

The social environment model: Small heroes and the evolution of human societyby Brian Whitworth and Alex P. Whitworth

Abstract

Traditional “realistic” theories of social action, whether based on the individual gain heuristics of capitalism or the collective class struggles of communism, cannot explain the massive volunteerism of online socio–technical collaborations like Wikipedia. Based on the idea that a social system is an environment within an environment, this paper argues that people in society are subject to both self– and social–interest directives, from natural and social world environments respectively. However, social dilemmas arise when these directives conflict. That people resolve social dilemmas by anchoring one directive then operating the other explains why the “social invention” of free markets was so successful, and further implies that socio–technical communities are a new social form, beyond capitalism and communism, which we call “free–goodness”. This model attributes the evolution of humanity to parallel technical and social evolutions. For example, the first civilizations that emerged from hunter–gathering thousands of years ago had to discover not only agricultural technology, but also the “golden rule” by which people cease to pillage each other. Socio–technical systems today continue that tradition, of taking humanity to a higher level, by combining social and technical advances.

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Introduction

In today’s world of massive online social interaction, it is easy to forget how unexpected it was. No theory predicted the success of work–for–nothing schemes like Wikipedia, or even imagined that user–run trading systems like eBay were possible.

Yet socio–technical systems, that began as largely free services, have had massive growth, *e.g.*, Wikipedia now dominates *Encyclopædia Britannica*, YouTube competes with television, Linux user–built operating systems are the standard for large–scale computing, user trading systems like eBay are a main point–of–sale for small businesses, and Facebook recently registered over half a billion members.

Given no “invisible hand” of profit incentivizing individuals to contribute to online communities, nor any central governance coercing or motivating them, why then do people choose to upload, share, blog, help and cooperate in increasing numbers? A theory is needed to explain the socio–technical phenomenon, to explain why *less–for–profit* systems are flourishing.

This paper analyses the social dilemma inherent in any social interaction, to give a social environment model that explains not only socio–technical successes, but also failures of larger society, like the Enron collapse and the credit meltdown.

Socio–technical levels

Sociologists who see people as conduits of social meaning consider individual–level psychological, biological and physical explanations of social realities as faulty reductionism. Yet this just swaps the determinism of biology (Wilson, 1975), or psychology (Skinner, 1948), with *social determinism*, where society writes social agendas, like communism or capitalism, upon individuals as if they were *tabula rasae* (blank slates). Yet if individuals truly could not think independently, society would cease to exist as surely as if all its members vanished physically. This has led to attempts to re–attach social theory to its psychological roots, *e.g.*, Bourdieu’s “habitus” references individual percepts of the social environment and Giddens discusses the mental frames that underlie social life (Bone, 2005).

This “top–down” return of sociology to its roots matches an equally vibrant “bottom–up” trend in computing, as *human–computer interaction* (HCI) uses psychological concepts like attention in Web design, and socio–technical systems (STS) invoke community needs like privacy. Today technology designers must recognize four system levels (Whitworth, 2009):

1. *Hardware systems*, based on *physical* energy exchanges.
2. *Software systems*, based on *information* data exchanges.
3. *Human–computer interaction systems*, based on personal *semantic* exchanges.
4. *Socio–technical systems*, based on *community–wide* exchanges.

In this framework, engineering, computing, psychology and sociology are just overlapping “views” of the same system ([Figure 1](#)).

Software depends on hardware, but reducing software to hardware voltages would be like describing World War II in terms of atomic events, both difficult and pointless. Software concepts not only better *describe* computer systems, they also offer better ways to *design* them, *e.g.*, software cache prediction concepts revolutionized chip design. Each level emerges from the previous: physical exchanges create information, information exchanges create meaning and human meaning exchanges create

communities. Each higher level naturally invokes new performance requirements that *flow down* from higher to lower levels, allowing the entire system to perform better.

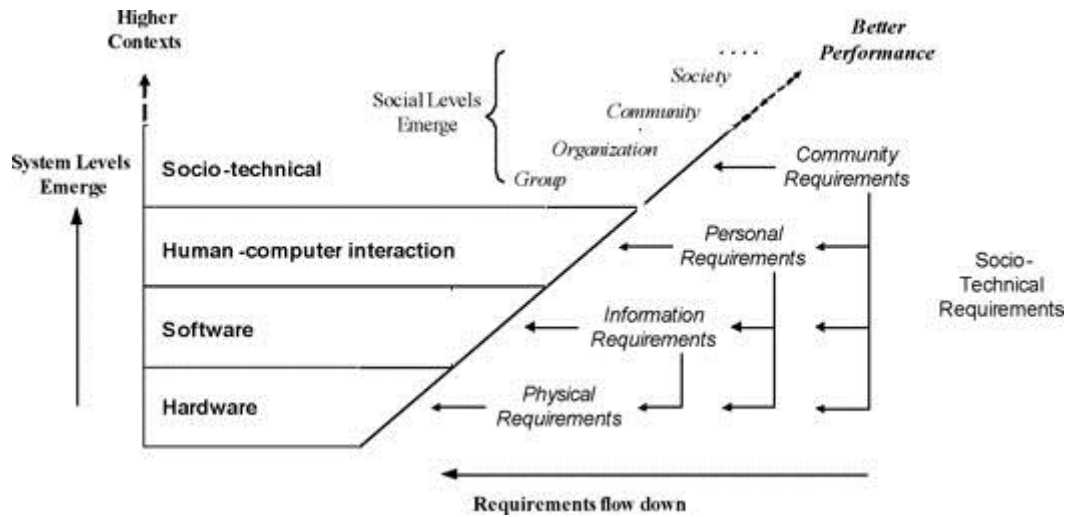
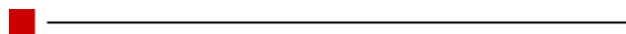


Figure 1: Socio-technical levels.

In the following, a *socio-technical* system is a social system that emerges from a technical base, as opposed to a *socio-physical* system, that arises from a physical one. Both are social systems, but with a different architectural origin. Technology advances mean that socio-technical systems are now equivalent to physical ones, *e.g.*, the over five hundred million person membership of Facebook exceeds that of many countries.



Social dilemmas

Social dilemmas are now proposed to be inherent to any social system, however mediated.

Competition

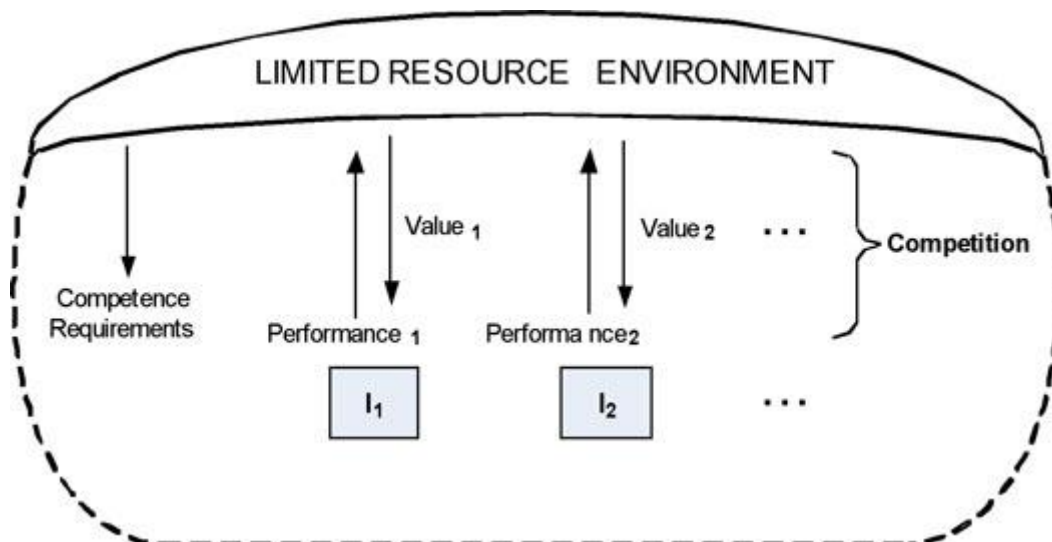


Figure 2: Individuals competing in a limited resource environment.

In a limited resource environment, if two beetles independently seek the same food and one gets it, then the other must do without. If the beetle that gets the food is more likely to survive, the result is “natural selection”, as individuals compete for advantage to survive. Limited resource environments push individuals to develop linked competencies, like strength, armor or speed, which together form a *web of system performance* that has given rise to the diversity of nature (Whitworth, *et al.*, 2006). In [Figure 2](#), *competition* between individuals for limited resources requires them to be *competent* to survive, so competence is a *requirement* the environment places upon those within it. Individuals must both to act to generate value (seek opportunity) and not to act to lose value (avoid risk).

Homo economicus

[Figure 2](#) supports the *Homo economicus* model, that people benefit themselves by maximizing personal gain, minimizing their effort, or both (Persky, 1995). The logic of individuals seeking competitive advantage defines Mill’s *economic man*, who seeks wealth, leisure, luxury and procreation. Adam Smith (1999) argued that profit is good because individuals competing for individual gain in a free market become more competent and productive, which benefits society, with production tied to the health of the community. This led to the ideal of a *rational actor*, who by calculating his or her own best interests supports the evolutionary process of natural selection. By this logic, individuals in a competitive environment should follow a *selfish action rule*:

Choose individual acts that give more value to oneself. <Rule 1>

This rule not only calculates value outcomes for the individual but also allows them to evolve. The concept of “value” here is deliberately left vague, to include physical gains like food, social tokens like money, psychological gains like appreciation, and social gains like reputation.

Homo sociologicus

Yet while competition is evident in nature, cooperation is equally common. In the animal kingdom, geese fly in flocks, wolves hunt in packs, and social insects like ants form highly successful massively cooperative societies that account for at least one-third of all insect biomass. The genetics that drive their behavior evolved because individuals working together can create more value than working apart (Ridley, 1998). Here the unit that competes and survives is not the individual but the community, *e.g.*, soldier ants die protecting the colony as without it they cannot survive. When individuals combine into a social unit, it “performs” in evolutionary terms as the sum of the actions of its members (Figure 3), *i.e.*, according to their cooperation.

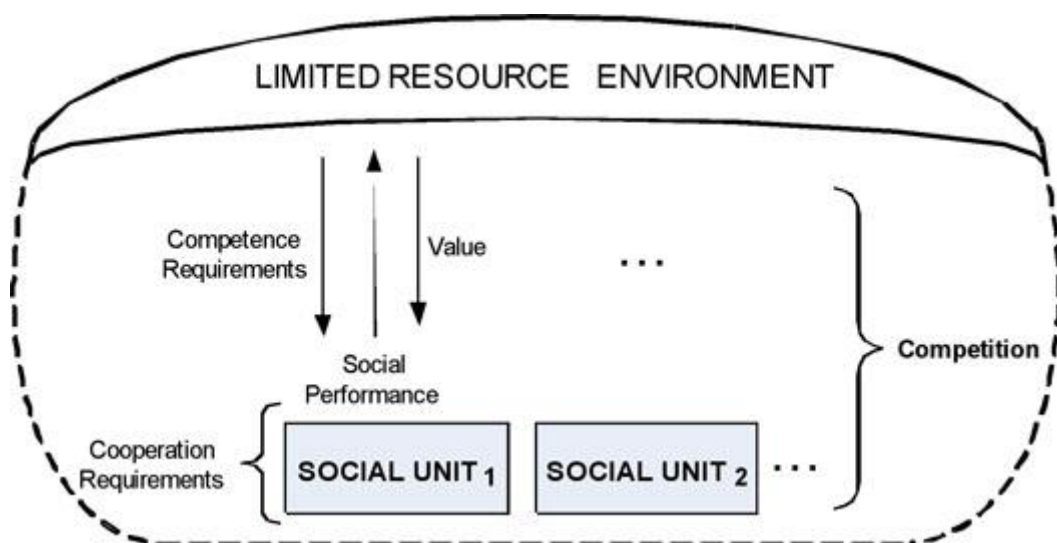


Figure 3: Social units competing in a limited resource environment.

Hence biologists now argue for multi-level selection — evolutionary selection for groups as well as individuals (Wilson and Sober, 1994). It seems that social Darwinists learned only half of nature’s lesson, of being red in tooth and claw, and chose to ignore the other half, that in social groups individuals cooperate to succeed (Waal, 2009). That the much trumpeted “selfish gene” can act unselfishly changes the evolutionary logic, as individuals can create value via a community, giving an alternative *social action rule*:

Choose social acts that give more value to the community as a whole. <Rule 2>

This rule calculates value outcomes for the group as a whole, allowing social evolution to occur. By this logic, natural selection favors *social acts* that reference the community not the individual, *e.g.*, “defend society” is an act of the society not the

individual. Such acts, being generic across society, brook no individual choice, though “castes” allow social roles, *e.g.*, worker and soldier ants.

Applying this rule to human society gives *Homo sociologicus*, who prefers acts that benefit the community as a whole (Bone, 2005). This is Marx’s *communist man*, who is politically motivated to do common acts for the good of society. A psychological base for this is social identity theory where group members share a common “identity”, so if *one* is attacked *all* feel attacked and respond accordingly (Abrams and Hogg, 1990). While in [Figure 2](#) individuals act to reap individual consequences, in [Figure 3](#) the social unit acts to get consequences, which it then distributes somehow to its members. Both rules, of selfish action and of social action, are logical and pragmatic. What then happens when, as can occur in the human case, they contradict?

Social dilemmas

Game theory, the systematic study of rational choices in interdependent interactions, underlies many economic, political and group decision theories today. It usefully presents the essentials of social situations for analysis. In the classic “prisoner’s dilemma” scenario, two prisoners (Bill and Bob) face two–year jail terms on circumstantial evidence for a crime they *did* commit. Each is separately offered a plea bargain, to testify against the other. If one prisoner testifies against the other, who does not testify, he walks free, while his partner earns a seven–year sentence. However if both testify, both get six years (one off for testifying), so the possible outcomes are:

1. Bill and Bob stay silent, and is sentenced to two years in jail.
2. Bill testifies for immunity, and Bob earns a seven–year sentence.
3. Bob testifies for immunity, and Bill earns a seven–year sentence.
4. Bill and Bob both testify, and both earn a six–year sentence.

Table 1: Prisoner’s dilemma — personal outcomes.			
Individual years free for Bill/Bob		Bob	
		<i>Cooperate</i>	<i>Defect</i>
Bill	<i>Cooperate</i>	5/5	0/7
	<i>Defect</i>	7/0	1/1

[Table 1](#) shows these outcomes as free years out of seven for each prisoner. If both keep quiet, or cooperate, both get five free years, but if both testify, or defect, they only get one free year each. The temptation is for one to defect to get seven free years while the other cooperating “sucker” gets none.

Working as individuals following Rule 1, each prisoner must rationally conclude:

- Whether the other cooperates or defects doesn't depend on my choice.
- If he defects, it pays me to defect, as then I get one rather than zero.
- If he cooperates, it still pays me to defect, as then I get seven rather than five.

So by Rule 1 it **always** pays individuals to defect. If both parties follow this logic, defect/defect is the *equilibrium state*, even though it is the worst possible result for the two prisoners.

Table 2: Prisoner's dilemma — social outcomes.		
Years free for the social unit pair		Social outcome
Social act	Cooperate	10
	Defect	2

However working *as a social unit following Rule 2* gives a different result. The available **social acts** for *the pair* are mutual cooperation or defection. Given the expected gains of 10 and two years respectively ([Table 2](#)), mutual cooperation is the equilibrium state, and indeed simulated agents in a prisoner's dilemma with social cohesion between actors do reach a cooperative equilibrium (Dayton–Johnson, 2003).

Traditional game theory *assumes* individuals calculate payoffs for themselves, but a “social” game theory could equally rationally calculate payoffs for the pair as a social unit ([Table 2](#)). As Rule 2 is just Rule 1 applied to the social unit instead of the individual unit, it is equally valid. Taking the community as the unit of analysis in a value calculation is just as rational as taking the individual. We consider ourselves individuals, but biologically our bodies are colonies of cells cooperating for the common good, with cancer illustrating what happens when they don't. Even psychologically, what people *define* as “self” includes the community around them (Persky, 1995). Both rules are equally rational, and in the prisoner's dilemma at least the Rule 2 ten-year equilibrium is a considerable improvement over that of Rule 1 (two years).

The prisoner's dilemma, once thought to be an unusual case, is now known to be just one of many *social dilemmas* common in social interaction (Diekmann, 2001). In the volunteer dilemma, a group needs volunteer help but it pays each individual to let others volunteer, so no one does and the group declines. The tragedy of the commons (Hardin, 1968) extends the two-person prisoner's dilemma to a many-person group, and parallels many forest and river conservation problems. This conflict, between self-good and social good, is typical of many collective action or “free-riding” problems from labor unions to political movements (Olson, 1965).

Social dilemmas arise *when Rule 1 contradicts Rule 2*. The typical example is crime, where individuals benefit themselves at the expense of the society, but a society can also exploit its members, as when an illegitimate government does not allow the gains

of social cooperation to flow down to the individuals who create it, who tend eventually to revolt or leave.

Social synergy

Let *social synergy* be the difference between what individuals produce working together and what they produce working individually, for any value. In the prisoner's dilemma example, the synergy is the cooperation value (10 free years) less the defect value (two years), *i.e.*, eight years. Synergy can be positive or negative, *e.g.*, trade is a positive synergy and internal conflict a negative one. It pays people to join positive synergy communities but not negative ones, *e.g.*, users leave Web sites plagued by conflicts. In competitive situations people receive benefits according to their own acts, but in social situations individuals benefit from the acts of others, *e.g.*, roads, goods, electricity and entertainment come from the efforts of others.

Game theory recognizes this as the difference between zero-sum and non-zero-sum games. In *zero-sum games*, like poker, your loss is my gain, but in *non-zero-sum games* your loss can also be my loss. So if I destroy your roads, then I also lose the benefit of their use, *i.e.*, diminishing the reward "pie" gives everyone a smaller share on average. Civilization can then be described as the growth of collective synergy, and conversely when a civilized society descends into chaos everyone becomes poor, as failed nations illustrate. Left to themselves, purely self-interested individuals following a zero-sum model return to what Hobbes called a "state of nature", living lives that are "*solitary, poor, nasty, brutish and short.*" While *non-zero-sumness* is an unpleasant term, the argument that social synergy is the key to modern prosperity is a strong one (Wright, 2001).

A feature of synergy gains is that they increase disproportionately with group size. Competence gains depend on the person and so increase linearly with group size, but synergy gains arise from the social interactions which increase geometrically with group size. So synergy is especially important in very large groups. When the Internet allows millions to synergize, it becomes a critical success factor. As Shirky (2008) noted: "*Here comes everybody.*"

That the vast wealth of modern civilized society arises when citizens grow the common good is why even ordinary middle class individuals today have better food, health care and leisure than the richest aristocrats of the Middle Ages, and today's "aristocrats" have more money than they can spend in a lifetime. The cause is simply the power of social synergy.

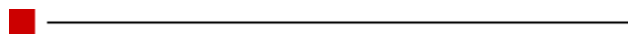
Social instability

However people with *instincts* for personal gain (Rule 1) who are *socialized* to create synergy (Rule 2) can choose to follow either rule. One person defecting, or even just free riding, reduces the gains of *everyone* else, which increases the pressure on them to defect [1]. If another does so, this further increases the pressure on the remainder, which may cause another to defect, and so on. Certainly a common reason given for cheating others is that "everyone is doing it" (Callahan, 2004). In a socially weak society even just one defection can cause a chain reaction that collapses all social

synergy, supporting Edmund Burke's conclusion — “*All that is necessary for the triumph of evil is that good men do nothing.*”

Every social synergy has corresponding defections that can destroy it. In commerce, if sellers defect from a manufacturer because of false claims, shoddy products or bad warranties, then customers distrust them and don't buy. Buyers can defect as well — buy an expensive ball gown, wear it to a ball, then falsely request a refund saying it didn't fit. Then sellers will refuse refunds (also defect), although refunds benefit both seller (more sales) and buyer (less risk). The end point of mutual defection is always a loss of synergy. So if a crime wave “succeeds” the social benefits it relied on dry up, like a parasite that kills its host. So despite its obvious benefits, is mutual synergy, like a ball balanced on a crest, inherently unstable? Or can kindness cascade too?

Certainly *individuals acting alone cannot solve social dilemmas*. One person cooperating in a social dilemma is just a “sucker”. In the tragedy of the commons, the farmer who doesn't graze just loses out and the commons is destroyed in any case. If the choices for individuals in social dilemmas are all bad, how have we achieved synergy at all? Even after thousands of years of struggle, how has modern society stabilized massive non-zero-sum synergies like global trade? How did humans bypass the cliffs of defection to cross the mountains of *zero-sumness* into the lush valley of massive synergy we call civilization?



Crossing the zero-sum barrier

The answer, it seems, is that we seek social gain as well as individual gain. This explains why people in social dilemma games are more cooperative than game theory predicts (Poundstone, 1992). The evolutionary reason is that kindness works. Axelrod (1984) invited programs for a simulated “survival of the fittest” online social interaction “tournament” and found that none of the eight most successful programs initiated defection. While nasty programs succeeded at first, in time they ran out of victims and met only other nasties, while cooperative programs found allies and prospered. So logicians concluding that social cooperation is “irrational” (von Neumann and Morgenstern, 1944) is like engineers deducing that bumblebees can't fly, when in fact they do. Clearly that parents help their offspring at personal cost is as critical to a species' survival as any tooth or claw “fitness.” If nurture is as central to nature as conflict, theories that purport to predict reality should recognize what human instincts already know: that *sociability improves performance*. Any effective model of social performance must include both co-operation and competition.

Social order

One way to solve a social dilemma is to apply Rule 2 directly, i.e. for a *higher social unit to form and issue a directive in its own best interests*. In the case of the commons, farmers can form a village to institute and enforce a cooperative grazing roster, as societies form governments to make public good laws and provide police to enforce them. Game theory specifically excludes such social agreements, even though they

are critical to solving social dilemmas (Aumann, 1998). A social group following Rule 2 carries out social “acts” as a monolithic unit, as all community members are bound by the directive to cooperate. Let a social unit’s *order* be the degree its members follow common rules. In perfect social order everyone is of “one mind”, like an ordered crystal whose constituent atoms move as one. In contrast *anarchy* is social disorder where each sub–unit follows its own rules, like a gas whose atoms move independently by individual exigencies.

Successfully cheating another increases social disorder, as in [Table 1](#), cheater and cheated act differently. Equally, the chance of being cheated creates behavioral uncertainty, or disorder. If a whole community acts as one (social order), whether by religion, culture, law or force, social dilemmas disappear and synergy can arise. Yet achieving this social state by coercion or brainwashing makes citizens effectively “ants”, without individual diversity, freedom or choice, who then cease to evolve individual competencies. Enforcing social order enables synergy, but political centralization and obedience are a known drag on innovation and efficiency (Lasswell, 1950). In contrast *freedom*, letting social members individually *choose* their acts, releases individual creativity and competence, but at the risk of anarchy and chaos.

This choice between supporting social or individual evolution is unique to human society. A society that replaces the “barbarian” Rule 1 for the “civilized” Rule 2 engages social evolution by disengaging the evolution of its individuals, who may then become “weak”. Perhaps civilized societies retain gladiatorial sport contests for this reason. The value of both individual and social growth may underlie historical power swings between the rise of sophisticated civilizations and their fall at the hands of more vigorous barbarian individualists. We now develop the view that human evolution arises from the parallel advancing of *competence*, including by technology power, and *socialization*, including by various social ideals, ethics and norms.

Legitimacy

One social “invention” is the idea that certain acts are *legitimate*, and so are permitted by society as formally defined in its laws, while other acts labelled illegitimate are punished. In sociology, legitimate governments are those that can be justified to the community and not just imposed by coercion (Outhwaite, 1994). The term invokes the idea of a social “rightness” beyond mere power or legality (Barker, 1990). John Stuart Mill noted there are “... *limits of power that can be legitimately exercised by society over the individual*” (Somerville and Santoni, 1963). Human rights are essentially legitimacy statements, of what should be permitted.

Legitimate rights then can be seen as based on the social need to create and improve synergy. One such right is the freedom for individuals to own themselves and not be slaves of others, as it is both fair and productive for society. Yet if freedom is a right, does that not return us full circle, to the selfishness of individualism?

The golden rules

While societies have enforced synergy for thousands of years, people have also been encouraged to choose synergy by the “golden rule”, expressed in many different ways:

1. Rabbi Hillel's sum of all rules: "*If you don't like it done to you, don't do it to others.*"
2. Buddhist Dhammapada: "*One who, while himself seeking happiness, oppresses with violence other beings who also desire happiness, will not attain happiness hereafter.*"
3. Hindu Mahabharata "*One should never do that to another which one regards as injurious to one's own self. This, in brief, is the rule of dharma.*"
4. Socrates in Plato's *Crito*: "*One should never do wrong in return, nor mistreat any man, no matter how one has been mistreated by him.*"
5. The Bible, in Matthew: "*Do unto others as you would they do unto you.*"
6. Kant's proposal: "*Act only on that maxim by which you can at the same time will that it become a universal law.*"
7. Pareto's optimality principle: "*Good actions benefit at least one other and do no harm.*"
8. Rawls' "*veil of ignorance*" requires state justice to be "blind" to individual needs.
9. Harsanyi's ruling out of immoral or anti-social acts from consideration (Harsanyi, 1988).

The golden rule is not the ethical reciprocity of an eye-for-an-eye, but a statement of higher good beyond game theory economics. Kant distinguished his *categorical* imperative from *hypothetical* ones, so the rule is not "Do unto others *so* they will do likewise unto you", which tit-for-tat deal is a mere *instrument* to individual benefit. Kant's imperative in contrast is to *categorically* do the right thing, regardless of personal outcome. The golden rule asks free individuals to hypothetically flip the social equation their act implies, to check it still works in reverse. It asks them to stand in the shoes of others in their community. It denies what the early Zoroastrianism religion poetically called the "Demon-of-the-Lie":

"This I ask Thee, O Ahura! tell me aright; how shall I deliver that Demon-of-the-Lie into the two hands of Thine Order ... to keep those deceitful and harsh oppressors from reaching their (fell) aims?" [2]

In this "original groan" of social creation, the earliest human societies were the "righteous order" of settlers tending crops and herds, battling hunter gatherer raiders who attacked to pillage their hard earned produce. This was not a mere physical battle, but one for hearts and minds of humanity, to deny the "lie" that stealing what others produce is sustainable, that in this world of causality one can get something for nothing. If without this call to "rightness" humanity could not have evolved socially, our civilization may have been founded upon this early expression of the golden rule.

Anti-social acts fail all golden rule tests. Hillel rejects stealing as one does not wish to be stolen from, Kant finds it wrong as if everyone does it, it doesn't work, and Pareto finds that it harms another. Rawls from behind his veil of ignorance cannot advocate it without knowing if he himself is being stolen from, and Harsanyi finds stealing an anti-social act. In this model, Rule 2 applies as well as Rule 1, so an individual gaining value should not do so at the expense of the social whole. A wallet stolen is

not just a money transfer from victim to thief, which would for society be a net zero change, but a net loss due to disruptive costs like reordering credit cards..

The golden rule is a solid universal ethical principle that is equally applicable to the socio–technical systems such as computing (Siponen and Vartiainen, 2002). The possibility of social synergy makes Rule 2 as practical as Rule 1, and indeed it is the same rule applied to the social unit instead of the individual unit. In this model, ethics is not just “niceness” but a higher level of pragmatism. Following the golden rule, the ship of humanity has avoided the evolutionary dead ends of selfish conflict and mindless, ant–like conformity.

Social health

If “social capital” is the “... *norms and networks facilitating collective action for mutual benefits*” (Woolcock, 1998), then social health is how successful those norms and networks are. Unlike ants, people have to learn to socialize. With young soccer players a “cloud” of players trails the ball, as each individual tries to score a goal. Inevitably, they obstruct each other and the results are poor. Only with training can players learn roles like forward or defender, and engage in social acts like passing the ball. While teams need competent members, a star team is not just a team of stars. The evolution of cooperation arises naturally because soccer is a competition between groups, as well as a player–vs–player competition.

Just as one can test how competent an individual is by what they do, so can one test how much social health a community has by its behavior. If a group offers cheap coffee on an “honesty” system, where each person leaves 25¢ per cup, what percentage cheat, and take the coffee but leave no money? If everyone defects and takes the coffee for free, the synergy (and coffee) fails. Conversely if everyone contributes, people continue to get cheap coffee, *i.e.*, practical gains require social health. Another example is the invention of supermarkets. Traditional shopkeepers kept goods behind the counter to prevent theft. Only when most customers learned not to steal could products be put out on shelves for customer self–selection, improving efficiency enormously. Social health — the percentage who defect on social synergy — affects social performance.



The social environment model

The social environment model arises when Rules 1 and 2 are combined.

A social system is an environment to its members as it imposes requirements on them (laws and norms) and dispenses gains and losses (salaries and taxes; prestige or shame, etc.). It uses *social tokens* like money, which one can exchange for goods, like food. If citizens operate in a social environment which itself operates in the world environment, a community is an *environment within an environment* ([Figure 4](#)). Hence it can fail in two ways:

- a) By external incompetence, as when a manufacturer with poor products goes bankrupt.
- b) By internal conflict, as when a community collapses due to crime or corruption.

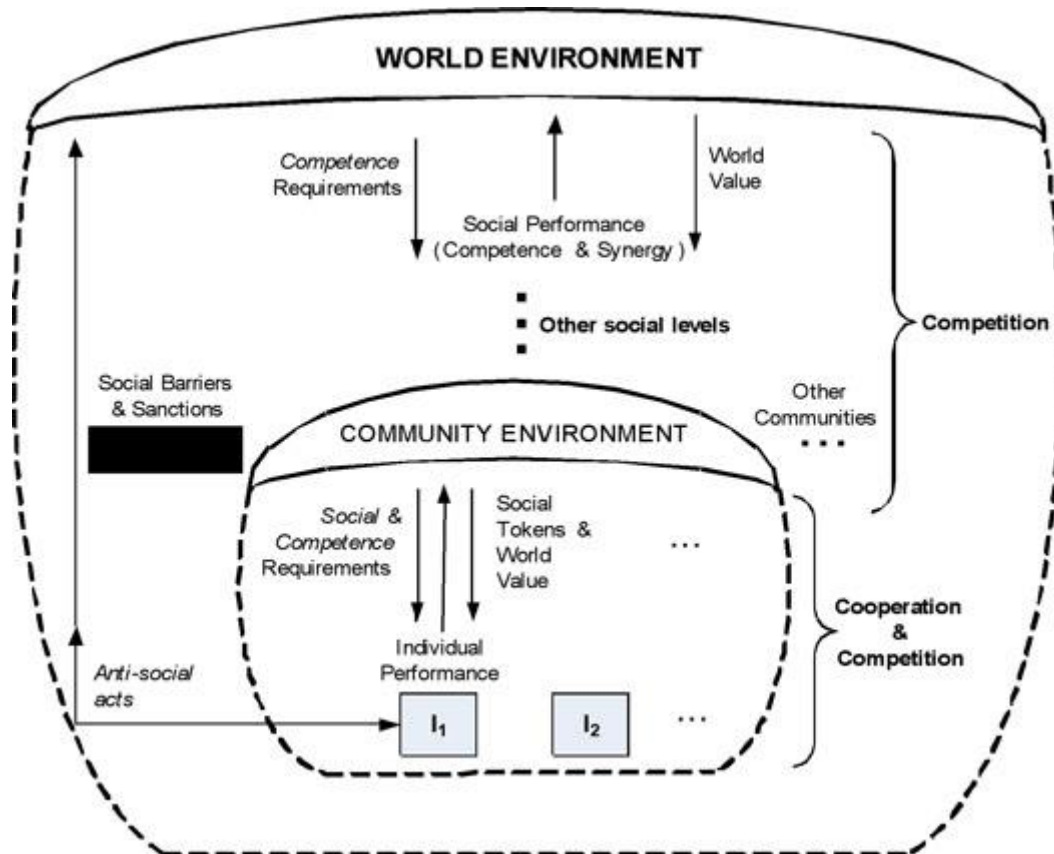


Figure 4: Social environment model.

Equally, individuals within a society simultaneously operate under two distinct environments:

- a) A social environment that rewards them for working within its laws and rules.
- b) A world environment that rewards them for taking opportunities and avoiding dangers.

Anti-social acts like stealing are “realistic” responses to world opportunities that “short-circuit” the synergies of social cooperation. Criminal acts bypass the social environment and treat its synergies as just resources to be exploited. Hence the inconsistency of terrorists who denounce modern society but use its benefits like the Internet and airplanes to advance their cause. Equally, one can expect crime to decline as the gains of social synergy become more transparent and its benefits shared more fairly.

Table 3: Individual choices by self and community outcomes.				
Outcome		Community		
		Gain	Minor effect	Loss
Self	Gain	Synergy	Opportunity	Anti-social
	Minor effect	Service	Null	Malice
	Loss	Sacrifice	Self-harm	Conflict

If an individual's behavior affects both the individual and the community, acts can be categorized by their outcome for each, as in Table 3. In this table, the selfish Rule 1 directs individuals to choose the first row representing individual gain, while the social Rule 2 directs them to choose the first column of social gain. If citizens recognize both Rules 1 and 2 as valid, they will seek some sort of hybrid, but how can one optimally combine the dual directives of two environments?

One well known proposed solution is the utilitarian ideal of Star Trek's Mr. Spock — "*the needs of the many outweigh the needs of the few.*" This rule to calculate the overall good seems simple but is not so easy in practice. Is an aircraft crash that loses some lives but causes safety changes that save even more future lives "good"? Is a revolution that kills thousands and destroys a country's economy but then institutes a better political regime worthwhile? The greatest good rule sounds easy but to calculate it over millions of people over time is not feasible.

Equally, a simple AND of Rules 1 and 2 is feasible but not optimal, as if people *acted* only to benefit *both* themselves *and* society, they would often not act at all. As Adolph Monod observed: "*Between the great things we cannot do and the small things we will not do, the danger is that we will do nothing.*" Equally, any weighted trade-off between social and individual utility raises difficult questions, like how much social gain is my personal loss worth, or how much personal gain warrants a social loss?

A rule merger is needed that both works and is feasible. We know that individuals making decisions often use heuristics — psychologically efficient versions of rational logic (Tversky and Kahneman, 1999), one of which is cognitive anchoring, fixing one rule then applying the other. Applying the logic of satisficing one rule while operating the other gives two workable strategies:

- a. Choose acts that don't hurt society significantly but benefit oneself. <Rule 3a>
- OR
- b. Choose acts that don't hurt oneself significantly but benefit society. <Rule 3b>

This logic supports both social free acts and free social acts. In the first part (3a) individuals make lawful profits by legitimate opportunities, as defined by the society's good conduct laws, *i.e.*, compete fairly. This rule well describes the social invention we call free markets. In the second statement (3b) contented individuals help society as they can afford, *i.e.*, satisfied citizens engage in public service volunteerism. This rule well describes the modern invention of socio-technology, as well as traditional concepts of philanthropy. Such anchored rules are more efficient than the selfish optimization of game theory and more effective than utopian ideals like utilitarianism. While the growth of government public services were the social invention of the 20th century, the growth of *non-government* public service is the social invention of ours.

Individuals who follow Rule 1 exclusively become criminals, willing to carry out acts that work against society. Those who follow Rule 2 exclusively become martyrs, willing sacrifice themselves for the good of society. Those who follow Rule 3, in either of its forms, are free-good citizens, who espouse neither crime nor altruism, but try to get ahead without harming others, and to help others without harming themselves. Applying Rules 3a and 3b to [Table 3](#) gives the options of synergy, opportunity and service, but not anti-social crime or altruistic sacrifice. Hence people in social groups tend to respond as negatively to altruistic givers as to criminals, both being equally seen as deviant "rule breakers" (Parks and Stone, 2010).

If humanity only followed Rule 1, crime and anarchy would prevail and society would collapse, while if it only followed Rule 2 we would still be slaves of kings, emperors or pharaohs. Societies with absolute rulers, like Burma and North Korea, are today social anachronisms. They are inevitably poor, as their ruler's personal agendas stifle not only individual creativity but also the natural competence needs of the larger world environment. For example, Mugabe opposed social inequity in Zimbabwe by giving the productive farms owned by white farmers to cronies who looted but did not plant, grow or harvest. Equity without productivity turned Zimbabwe from the breadbasket of Africa into the basket case of Africa, needing regular food aid. This paper argues that the best social evolutionary path of humanity is neither equity nor order, but the combination of individual freedom and community cooperation here called *free-goodness*. Free-good citizens will pursue individual goals that don't damage society and help others if they can without sacrificing themselves.

Polanyi (1966) identified the modern contradiction between the "scientific skepticism" that feels free to reject traditional religious and social logics to pursue personal goals, and the "moral perfectionism" which would enforce a utopian society on others by revolution. This dichotomy stretches individuals out between selfish consumerism on the one hand and revolutionary socialism on the other. In this model, neither extreme can resolve their contradiction, as the dominance of either will give problems that lead back to the other. The resolution of Polanyi's dilemma is that individuals freely choose the good of others without disrupting society. In practice, individuals seem to do this only when the value of doing so is self-evident, and the speed and power of technology is now making this possible on a large scale for the first time. Socio-technology then succeeds because it makes evident to all what some have seen all along.

Communism and capitalism

In the political conflict between capitalism and communism, free competition (Rule 1) is the assumed opposite of enforced public good (Rule 2), but in this model they are not opposites at all, just the same logic applied to the individual and the social unit respectively. Indeed, is a group that produces little but shares it equally better than one that produces much but shares it unfairly? Capitalism vs. communism frames the choice as pairs of opposites, like wealthy inequality vs. poor equality, but this model espouses a middle way. If capitalism and communism are the same principle at different social levels, they can theoretically combine into a hybrid that allows the gains of both, *i.e.*, wealthy equality. Indeed the slow process of human evolution illustrates the merging of individual and social evolutions for larger and larger social units (Diamond, 1998).

Adam Smith (1999) linked individual good to public good, by showing that the “invisible hand” of a market of individuals maximizing profits also increased value to the group. If competing individuals produce more individually, then so must the group whole of which they are part. However to see Smith’s argument for individual competition as an argument against social cooperation is to misunderstand it. Indeed “free” markets need common good rules to operate, as stock markets punish insider trading. Competitive environments, like playing fields, work best if they are level and reward good performance not cheating. So as economic sociologists have shown, successful competitive economies are always embedded in a larger social context (Granovetter, 1985).

It follows that Smith’s argument can be reversed, that the link between individual and social good also works the other way, as without public good agreements no market can succeed. In general, public good infrastructures benefit citizens by synergy and individual competitive efforts benefit the public by competence. In the social environment model, individual competition to achieve competence is as valid as social cooperation to achieve synergy. So a social environment must transmit to its citizens not only its own synergy needs, but also the demands of its environment, and markets illustrate one way to do this.

This merges the *capitalist* view of society, as self–interested but free individuals competing, with the *communist* view of society, as ant–like units cooperating, into a new vision of free–good citizens who help others *because it seems like a good idea*. This is neither pure capitalism (Rule 1), which requires rewards, nor pure communism (Rule 2), which requires order, but a hybrid. This merger can avoid both the inefficiency and conformity of communalism, and the corruption and profiteering of individualism. The model predicts that communist states will move to *socialism with a business face*, and that capitalist states will move to *public good capitalism*, until both meet in the middle and are virtually indistinguishable. Social performance requires the “invisible hand” of free competition to work alongside the “visible hand” of public good.

Levels of ethicality and competence

[Figure 3](#) is not so simple as it seems, as in the vertical ellipsis one social environment can contain another. If many people form a company, those companies can form a stock market, which is also a social group. A company is a social group to its members but is also itself a member of the stock market community. Both groups

activate social systems to generate synergy value for their members. Companies distribute the gains of their competence and synergy to their employees and shareholders. Stock markets also reward companies that perform well with increased public investment to increase their value. Both company and stock market make synergy demands on their members. Companies ask employees to work hard but not to steal their product value (inventory) by taking it without paying, and stock markets ask companies not to steal their product value (ratings) by falsely reporting profits.

When social dilemmas arise at higher social levels, apparently "new" problems occur, *e.g.*, the Madoff investment scandal was just a Ponzi con on an unprecedented scale. The Enron debacle, with estimated losses of over US\$60 billion, arose as Enron executives cheated their environment, the stock market, by reporting false profits to raise their stock price, causing other companies to lay off staff, to "compete" with Enron's imaginary profits of over 80 percent. Enron defected on the trust the stock market social system uses to create synergy. If everyone made false claims, no one would invest.

If businesses operated by a purely competitive model (Rule 1), then Enron's innovative methods of stealing from its stock market environment would be a competitive advantage. However the business maxim "greed is good" does not justify defecting on the social demands of synergy, and "competitive advantage" does not mean cheating one's peers in a community. The bottom line for the U.S. stock market was that Enron's actions threatened the group as a whole, so it had to disable Enron or collapse itself.

Enron hypocritically asked its workers to loyally serve their social environment, the company, while itself disloyally stealing from the social environment to which it belonged, the stock market. Its innovation, to "have it both ways", was just a new form of an old "lie". Today, we see it not so much as sinful, unethical or evil, but as unsustainable. Gangs similarly demand strict loyalty and service from their members, but as a group pillage the community to which they belong. Systems founded on hypocrisy inevitably collapse. The only question at issue is whether they also collapse the greater society. In general, a truly good social rule should work at every social level:

Choose acts that don't significantly harm higher environments but benefit lower ones.

OR

Choose acts that don't significantly harm lower environments but benefit higher ones.

In this model, categorically good acts give value "all the way up", not just for the self, but for the community, humanity and even the larger global environment. This principle, of levels of good, could be seen at the Nuremburg trials — where German citizens who obeyed national laws were still convicted of "crimes against humanity" — held to a higher standard of right and wrong. Humanity is still coming to terms with the idea of levels of justice, fairness and public good beyond those of the nation state.

Social inflation and external rectification

In this model a society can fail not only by internal problems like crime but also by external incompetence, as a social environment cannot insulate its citizens from the demands of its environment. It may hide external needs from its citizens, but can't forever protect them from the external consequences of their acts. Ultimately outer demands "drive" inner ones, so a social unit must somehow "transmit" to its members the demands of its environment, or it will eventually fail itself.

Social environments that ignore the demands of their environment experience social inflation, as their social tokens lose external value. Monetary inflation is an example, as the social token "money" loses value relative to say the physical reality of a loaf of bread. Another example is grade inflation, when professors give all students As regardless of competence, so the token "A grade" loses value in the larger social environment of employers. *Internally*, giving high grades seems to benefit all, as grading is easier, students are happier and high pass rates attract more students, but *externally* the employer's need for competent employees to deal with difficult jobs is not met.

To succeed, a social unit must transmit the competence needs of its environment to its members, *e.g.*, by promoting the competent to leadership roles. Conversely, in failing societies the incompetent, criminal or even the insane rise to leadership positions. If crime arises when people only see the outer "realist" world and forget society, then social inflation is when people become so parochial they see only their society, not the world around it. If in crime citizens are *under-socialized*, then in social inflation they are *over-socialized*. As the organization loses competence it becomes:

a) *Bureaucratic*. Members follow social rules without thought, regardless of practical consequences. When rule following becomes a primary directive, the group becomes externally incompetent.

b) *Image focused*. When social appearances supersede practical skills, people with fake qualifications get high positions. As image wins over substance, the group becomes incompetent

c) *Reality denying*. Outside problem "shocks" are covered up or denied rather than dealt with, and whistleblowers who point them out are suppressed or fired, so no competence learning occurs.

d) *Political*. Members are too busy with internal power struggles to attend to outside problems, which the organization handles increasingly incompetently.

e) *Negatively driven*. Traditional socialization works by applying sanctions or punishments. An over-socialized group thus tends to be negatively driven, favouring sustained "non-failure" rather than success. It imposes budget cuts and formal error monitoring, but has no real success incentives or positive vision, so its citizens become submissive to the system, apathetic and externally incompetent.

All of the above are maladaptive responses, as they try to use social means (rules, image, conformity, politics and sanctions) to achieve competence ends. The right solution to external incompetence is to support competence, by allowing the breaking

of rules to achieve results, by delving behind image to performance, by respecting internal criticisms, by discouraging internal conflicts, and by incentivizing its citizens.

The social descent of an organization into external incompetence occurs gradually, like a choir slowly going off-key together, but can end suddenly in a catastrophic failure, when the society can no longer shield its citizens from the external effects of their actions. Any society that continuously ignores its environment eventually experiences an *external rectification*, when that environment directly impacts its citizens. Catastrophic world events like economic depressions and world wars can be seen as examples of external rectifications.

A recent example is the 2008–9 credit meltdown, which arose when banks and credit companies offered loans almost regardless of risk. Internally, this seemed feasible, as lenders got more interest, borrowers got the money and bank popularity grew, but then due to world realities bad loans decreased the value of the “share” held by banks — there was social inflation. The expected result of this external rectification was the collapse of the global credit system. So the U.S. government and other countries stepped in with hundreds of billions of dollars in bailouts.

This resolved the problem in the short term, but in the long term no society, however powerful, can insulate its citizens from its environment. Without an *internal rectification*, bailouts of a “business as usual” social inflation only delay the inevitable collapse. As Enron was a higher level of unethicity, so the credit meltdown illustrates higher level incompetence.

Internal rectifications

Failures like the credit crunch and Enron suggest that business relates to the state as a child relates to a parent. When Wall Street’s credit froze, *by its own bad judgment*, the state essentially paid outstanding debts for the public good. Similarly, when Enron, playing with the matches of cheating, nearly burnt down the market house, again the state stepped in, again for the public good. To seek state bailouts in hard times but no “interference” in good times is like a child wanting the freedom to be left alone except when there are bills to pay. As in ordinary life, rarely does good arise when children instead of adults run the family. If public good is important in hard times then it is important all the time. If in times of trouble the nation pays the piper then in times of plenty it can call the tune, which here is the melody of competence to the backing of synergy.

If the ultimate responsibility for social failure lies with society, what should it do? For corporate cheats, the government typically prosecutes them, then implements fair-play public-good “new rules”, for example, of financial disclosure. For corporate incompetence, while a society should not *punish* it, it cannot expect to succeed if it *promotes* and *retains* incompetence. A society that bails out failed corporations can and should ask those who led them to step down as failed leaders. If those who engineered the credit collapse still draw bonuses based on their business “skills”, no internal correction has been made. To make no internal correction is to invite an external one. A society unable *in its own interests* to remain externally competent invites its own demise.

In this model, both the social ills above arise from an inconsistency that cannot be maintained. In simple terms, they are based on a “lie”, which like all lies, cannot tolerate open scrutiny. Those who knowingly propagate lies are con men who deserve prosecution and those who do so unknowingly are incompetents who deserve no high position. Society must also ask itself if it is an environment where deceit flourishes. Just as mould grows under dank and dark conditions, so it can be argued that social errors grow in secret deals and undisclosed arrangements. The openness and transparency espoused by modern socio–technology then illustrates what corporate and state governance could be.

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Technological support for free–goodness

The conflict between individual selfishness and public good morals has been around as long as humanity itself, but modern technology magnifies the issues:

“... as science generates an ever–larger set of opportunities for us all, it simultaneously raises the level of moral responsibility that falls on our shoulders.” (Shapiro, 1999).

In this model, human evolution occurs when social and technical advances go hand–in–hand. Technical inventions like printing helped spread social inventions like democracy which then enabled technical innovations like the Internet which today allow further social invention. It is the combination of social and technical evolution that is succeeding today. A new generation of online technologies is allowing the social innovation of open access at sites like SourceForge and Wikipedia. These “socio–technologies” are a new social form, as well as a new technical one.

Socio–technology

Table 4 shows how socio-technologies both support community synergies and defend from anti-social defections. While in physical society, the focus of police, courts and prisons is to deny anti-social acts, in online communities the focus is to enable synergy. Indeed if the ultimate social goal is synergy, why not seek it positively rather than negatively?

Table 4: Socio–technical synergies and defections.			
Aim	Examples	Synergy	Defection
<i>Communicate</i>	E–mail, chat, Skype, listservs	<i>Shared communication:</i> Individuals send	<i>Spam:</i> Spammers waste time of their victims

		messages that they otherwise would not.	leading to the development of imperfect spam filters.
<i>Learn</i>	WebCT, Moodle, Blackboard	<i>Shared learning:</i> Students helping others reduces teacher bottlenecks.	<i>Plagiarism:</i> Students copy the work of others, leading to solutions like turnitin.com.
<i>Know</i>	Wikipedia, TiddlyWiki	<i>Shared knowledge:</i> Taps knowledge of the group, not just a few “experts”.	<i>Trolls:</i> Wikipedia’s monitors fight “trolls” who damage knowledge.
<i>Relate</i>	Facebook, MySpace	<i>Relationships:</i> People keep in touch with friends and family.	<i>Predation:</i> Social network predators are reported and banished.
<i>Follow</i>	Twitter	<i>Shared following:</i> Individuals join a group to follow an idea or person.	<i>Identity theft:</i> Individuals assume identities, misleading groups.
<i>Keep current</i>	Digg, Delicious	<i>Shared bookmarks:</i> People see what others are looking at.	<i>Advocates:</i> Certain individuals “digg” a site because of a vested interest.
<i>Play</i>	Second Life, MMORPG, Sims	<i>Shared play:</i> Individuals have varied digital experiences impossible in reality.	<i>Bullies/thieves:</i> “Newbies” robbed by experienced players need “safe” areas for novices.
<i>Trade</i>	eBay, craigslist, Amazon	<i>Item trading:</i> People exchange goods.	<i>Scams:</i> Scammers are reduced by online reputation systems.
<i>Work</i>	Monster, CareerBuilder.com	<i>Work trading:</i> Individuals find and offer work more easily.	<i>Faking:</i> Padded resumes and fake jobs need online reputation systems.
<i>Download</i>	BitTorrent, Napster	<i>Shared downloading:</i> People share file downloads.	<i>Piracy:</i> Napster encountered copyright laws.
<i>View</i>	Flickr, YouTube, podcasting	<i>Shared experiences:</i> People share photos and videos with family and friends.	<i>Offensiveness:</i> Editors remove offensive files.
<i>Solve problems</i>	Tech help boards like AnandTech	<i>Shared technical advice:</i> People help others with problems.	<i>Confusers:</i> Individuals starting new tracks, rather than checking old ones, are scolded.
<i>Express opinions</i>	Slashdot, Boing Boing, blogs	<i>Shared opinions:</i> Individuals express opinions and read	<i>Caviling:</i> People “peck” new ideas to death — karma systems deselect

		opinions of others more easily.	them.
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As online citizens come and go at will, engaging synergy becomes as important as defenses against anti-social acts. This changes the social lens, from people as selfish, ignorant primitives to be bribed or controlled by the arbiters of society (Rules 1 and 2), to people as free citizens whose competence and kindness need only to be activated (Rule 3). Indeed if users were purely selfish, systems like Wikipedia or SourceForge could not succeed, as no one would give away their work to others for no profit.

Hence the Internet has led to new business models based on public service. Yet research on trust still largely frames the business problem as how to manipulate customers to trust and buy. Even if this were possible, customers would lose money buying foolish things. Such customers die out, economically speaking, and their business dies with them. Seeking propaganda to create *stupid* customers is neither desirable, sensible, nor sustainable.

Community-based business models change the goal from tricking customers out of their money to working with them to create sustainable synergy. Instead of customers being sheep to be herded and fleeced, they are invited into the business house, as partners in joint value creation. In systems like eBay and Amazon, reputation, review and feedback systems generate customer value. Google illustrates the power of this approach, as what began as a free public service now rivals Microsoft in influence. The Google motto, “Don’t be evil”, clearly works. However, communities are not built as bridges are, by putting parts together, but emerge naturally from social interactions and growing trust and social health. One should not “manage” citizens by manipulating them, as Lao-Tse says:

*“One should govern a state as a cook fries small fish,
that is without scaling or cleaning it.”*

The socio-technical invention

A feature of today’s online communities is the willingness of individuals to help others they have never met before and may never meet again, *e.g.*, experts helping others with hardware problems on online boards or people reviewing movies for others on Netflix. No selfish rule alone can explain this. Yet it is common in physical society too; urban dwellers will give lost visitors directions even though they will probably not see these strangers again. That people *willingly* help others for no reward is distinct from Smith’s argument that people seeking selfish rewards in markets unconsciously help society. Here even if individual rewards are not available, a positive urge for social value remains. In BitTorrent, users help each other download files yet they could just download and leave. In open source initiatives like FLOSS (free, libre, open source software) and community sites like SourceForge, people freely give their work to others (synergy) provided they don’t copyright or sell it (defect).

Socio–technical systems succeed because people made free by the nature of online interaction, are still willing to be good citizens and contribute to social synergy. The socio–technical invitation to be a “small hero”, to do small acts of *selfless service*, is taken up. In this, the democratization of heroism, community citizens freely give their time and effort to help others (Rule 3b). If the free–good citizen rule was invalid, socio–technical systems could not succeed.

This then is new. We knew from history that enforced order enables synergy, as the pyramids of Egypt attest. We also know today that markets can incentivize synergy, given legal systems to prevent injustice. However it was not generally known, or even suspected, that people not coerced, controlled or enticed could freely synergize in a stable way. We knew that people could be *forced* to work together, *brainwashed* to follow social rules, or *threatened* or *bribed* to be a social unit, but not that they would *freely* act together to generate synergy. Yet the fact is that when systems like Wikipedia threw themselves upon the goodwill of online humanity, they didn’t just survive, they prospered.

Free good citizens

What then is the rationale behind this? It is proposed that as anchoring social good and invoking self–interest gave the free market successes of last century, so anchoring individual good and invoking community interest is giving us the socio–technical successes of today. If so, the latter is not just a technical change. That technology can support productive “virtue” then is an important discovery, with implications for all humanity (Benkler and Nissenbaum, 2006).

The implication is that modern socio–technology depends as much on social health as on technology. The democracies of today were not just unthinkable a thousand years ago, but also unworkable. Even if an all powerful being gave today’s freedoms to yesterday’s citizens, they would still probably not have succeeded. For example, the French Revolution’s “liberté, égalité, fraternité” soon reverted to the anarchy of Madame Guillotine, then the autocracy of Emperor Napoleon. Social growth can be neither given nor enforced, but is a fruit only possible if the people are “ripe”. Yet today, democracies work so well we find it hard to see why our predecessors ever settled for less.

The socio–technical systems that now transform the Web (Kolbitsch and Maurer, 2006) differ from physical society in being more *open* to everyone, more *transparent* in action, more *freely* participative, more *democratic* in control and more *community* focused. The members of these systems generally oppose all forms of social control, whether the denying of acts (repression), or the denying of ideas (censorship), or the imposing of acts (coercion), or the imposing of ideas (propaganda). They see themselves and others as adults, not children, who will act rightly if left alone to do so.

This is not capitalism, as value is given for free. It is not communism, as individuals can differ from the collective. It is not socialism, as competent individuals can take value and give nothing back. It is not anarchy, as anti–social defenses oppose disorder. It is not altruism, as no one must sacrifice for the community good. It is not liberalism, as citizens seek not freedom from society’s demands but to be part of a

community. It is not progressivism, as no one dares to presume to change others, to make politically correct choices for them, or tell others how to live their life. Socio-technical systems, it is here argued, are *a new technology-based social form*.

The next step

The “rational” decision-making of game theory doesn’t explain how humanity crossed the non-zero barrier to achieve the massive social synergies of civilization today. That we are socially where we are is only possible if *Homo sociologicus* exists in us alongside *Homo economicus*. While one seems “bad” and the other “good”, in the social environment model both are equally critical to human evolution.

If the *only* focus is personal profit, the inevitable ideal is the greedy myth of getting something for nothing — and Enron, World Corp. and other scandals illustrate the result. If the *only* focus is the social collective, the inevitable ideal is individuals slavishly serving the goals of society, and both communist and fascist totalitarianism illustrate the result of that. Systems that treat people as ants fail because individuals are not ants. Systems that consider them selfish gain seekers also fail, because they are not that either. Neither focusing on the collective attainment of wealth nor the individual attainment or wealth alone suffices. As Winston Churchill observed:

“The inherent vice of capitalism is the unequal sharing of blessings; the inherent virtue of socialism is the equal sharing of miseries.”

Hence, as Giddens (1994) argues, the political concepts of ‘left’ and ‘right’ are breaking down. Big-picture political visions are giving way to “small picture” visions, of individuals making grassroots level decisions that cumulate. In this model, free competent citizens choose to produce community synergies, because the system lets them see what a good thing that is.

Autocratic social systems that coerce citizens are already seen as outdated, but capitalist systems that bribe people may also be ending their useful life. While it is true that if one offers peanuts one gets monkeys, it is also true that if one offers honey, one gets wasps.


It is time to try something new. Instead of bribing or forcing individuals to virtue, let the incentive simply be that it manifestly works. Socio-technical systems do this by decentralizing control, making actions transparent to others, letting people freely participate, making the system open to all, supporting legitimate rights like privacy and encouraging the common good. Systems that everyone sees working have no need for propaganda. Systems that employ no rewards offer few temptations to steal or cheat. Systems that are not centrally controlled are harder to hijack. Systems where acts are transparent can name and shame the corrupt or inept in the court of community opinion. Systems that aim for the common good have an aim that everyone can agree on.

If such systems work online, can they work anywhere? As technology learns from society to be more social, can society learn from technology to be more open? Can a nation without reward tokens, run by no person or clique, open to all, defended by all,

ever actually work? The Internet says yes, but the jury is still out on whether it is possible in the larger society, as it depends on both the social health and practical competence of its citizens, both to discern good and choose it.

This model predicts the rise of independent voters, sitting between the traditional right and left wings of politics, and who already decide many elections. Traditional parties call them “swing voters”, but they are just free voters who decide each case on its merits. Members of this *party of free choice* accept no conventions, agree to no rules, follow no formats and believe in no final solutions or utopias. To them, *every political vote should be a conscience vote*, as they hold that:

- a) *I am free*. I am not a slave to anyone else, however righteous or powerful.
- b) *I am good*. I seek the benefit of others as well as myself.
- c) *I am a citizen*. I am not alone, but part of a larger group.

Free-good citizens reject personal power, selfish profit and community control as evolutionary dead-ends that have been tried and failed. They hold that each person should freely do what they think is best, and let others also do so, as while some may err most will not. Simply put, they *believe* in “us”. When people openly talk and interact, as science should [3], it is felt that the truth will always win out in the end. Conversely, what harmful plan is so secret that someone somewhere does not know of it, and can tell others? If humanity can use technology to tap the social goodness of its many “small heroes”, whose lineage has already given us civilization, it can further transform itself. If freedom is the price of individual evolution, and goodness the price of social evolution, the socio-technical experiment suggests that humanity can have both. Beyond grand social schemes of domination and the anarchy of selfishness is the original human spirit of freely doing what is best. 

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Notes

1. This is just the synergy principle in reverse.

2. See <http://www.sacred-texts.com/zor/sbe31/sbe31014.htm>.

3. Brian Whitworth and Rob Friedman, 2009. “Reinventing academic publishing online. Part I: Rigor, relevance and practice,” *First Monday*, volume 14, number 8, at <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2609/2248>, accessed 30 October 2010.

References

- D. Abrams and M. Hogg, 1990. *Social identity theory: Constructive and critical advances*. New York: Springer-Verlag.
- Y. Aumann, 1998. "Rationality and bounded rationality," In: D. Jacobs, E. Kalai, and M. Kamien (editors). *Frontiers of research in economic theory: The Nancy L. Schwartz Memorial Lectures, 1983–1997*. Cambridge: Cambridge University Press, pp. 47–60.
- R. Axelrod, 1984. *The evolution of cooperation*. New York: Basic Books.
- R. Barker, 1990. *Political legitimacy and the state*. New York: Oxford University Press.
- Y. Benkler and H. Nissenbaum, 2006. "Commons-based peer production and virtue," *Journal of Political Philosophy*, volume 14, number 4, pp. 394–419.
- J. Bone, 2005. "The social map and the problem of order: A re-evaluation of 'Homo Sociologicus'," *Theory & Science*, volume 6, number 1, at <http://theoryandscience.icaap.org/content/vol6.1/bone.html>, accessed 30 October 2010.
- D. Callahan, 2004. *The cheating culture: Why more Americans are doing wrong to get ahead*. Orlando: Harcourt.
- J. Dayton-Johnson, 2003. "Knitted warmth: The simple analytics of social cohesion," *Journal of Socio-Economics*, volume 32, number 6, pp. 623–645.
- J. Diamond, 1998. *Guns, germs and steel: The fates of human societies*. London: Vintage.
- A. Diekmann, 2001. "Cooperation: Sociological aspects," In: N. Smelser and P. Baltes (editors). *International encyclopedia of the social and behavioral sciences*. Amsterdam: Elsevier, pp. 2,751–2,756.
- A. Giddens, 1994. *Beyond left and right: The future of radical politics*. Cambridge: Polity Press.
- M. Granovetter, 1985. "Economic action and social structure: The problem of embeddedness," *American Journal of Sociology*, volume 91, number 3, pp. 481–510.
- G. Hardin, 1968. "The tragedy of the commons," *Science*, 162, number 3859, pp. 1,243–1,248.
- J. Kolbitsch and H. Maurer, 2006. "The transformation of the Web: How emerging communities shape the information we consume," *Journal of Universal Computer Science*, volume 12, number 2, pp. 187–213.
- H. Lasswell, 1950. *Politics: Who gets what, when, how*. New York: P. Smith.
- M. Olson, 1965. *The logic of collective action: Public goods and the theory of groups*. Cambridge, Mass.: Harvard University Press.
- W. Outhwaite, 1994. *Habermas: A critical introduction*. Cambridge: Polity Press.
- C. Parks and A. Stone, 2010. "The desire to expel unselfish members from the group," *Journal of Personality and Social Psychology*, volume 99, number 2, pp. 303–310.
- J. Persky, 1995. "Retrospectives: 'The ethology of Homo Economicus,'" *Journal of Economic Perspectives*, volume 9, number 2, pp. 221–231.
- M. Polanyi, 1966. *The tacit dimension*. Garden City, N.Y.: Doubleday.
- M. Ridley, 1998. *The origins of virtue: Human instincts and the evolution of cooperation*. New York: Penguin.
- H. Shapiro, 1999. "Reflections on the interface of bioethics, public policy, and science," *Kennedy Institute of Ethics Journal*, volume 9, number 3, pp. 209–224.
- C. Shirky, 2008. *Here comes everybody: The power of organizing without organizations*. New York: Penguin Press.
- M. Siponen and T. Vartiainen, 2002. "Teaching end-user ethics: Issues and a solution based on universalizability," *Communications of the Association for Information Systems*, volume 8, at <http://aisel.aisnet.org/cais/vol8/iss1/29/>, accessed 30 October 2010.
- B. Skinner, 1948. "Superstition in the pigeon," *Journal of Experimental Psychology*, volume 38, pp. 168–172.

- A. Smith, 1999. *The wealth of nations*. Harmondsworth: Penguin.
- J. Somerville and R. Santoni (editors), 1963. *Social and political philosophy: Readings from Plato to Gandhi*. Garden City, N.Y.: Anchor Books.
- A. Tversky and D. Kahneman, 1999. "Judgement under uncertainty: Heuristics and biases," In D. Kahneman, P. Slovic, and A. Tversky (editors). *Judgement under uncertainty: Heuristics and biases*. New York: Cambridge University Press, pp. 3-20.
- J. von Neumann and O. Morgenstern, 1944. *Theory of games and economic behavior*. Princeton, N.J.: Princeton University Press.
- F. de Waal, 2009. *The age of empathy: Nature's lessons for a kinder society*. New York: Harmony.
- B. Whitworth, 2009. "The social requirements of technical systems," In: B. Whitworth and A. de Moor (editors). *Handbook of research on socio-technical design and social networking systems*. Hershey, Pa.: Information Science Reference.
- B. Whitworth, J. Fjermestad, and E. Mahinda, 2006. "The web of system performance: A multi-goal model of information system performance," *Communications of the ACM*, volume 49, number 5, pp. 93-99.
- D. Wilson and E. Sober, 1994. "Reintroducing group selection to the human behavioral sciences," *Behavioral and Brain Sciences*, volume 17, number 4, pp. 585-654.
- E. Wilson, 1975. *Sociobiology: The new synthesis*. Cambridge, Mass.: Harvard University Press.
- M. Woolcock, 1998. "Social capital and economic development: Toward a theoretical synthesis and policy framework," *Theory and Society*, volume 27, number 2, pp. 151-208.
- R. Wright, 2001. *NonZero: The logic of human destiny*. New York: Vintage Books.

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