

A Renaissance of the Commons

How the New Sciences and Internet Are Framing A New Global Identity and Order

By John Clippinger and David Bollier

Cultures, like people, can run out of ideas. They can exhaust themselves in the face of events and ideas they can no longer predict, explain or control. When they do, they revert to the repetitive assertion of the simplest and most soothing of their founding ideas. These attempts to ward off the unknown through the ritualized assertion of familiar core beliefs are what anthropologists call a “ghost dance.” The name is taken from a Sioux Indian ritual dance designed to resurrect ancestors. Sioux warriors believed the dance made them impervious to the bullets of the U.S. Calvary in the 1870s.

What may seem to be a bizarre ritual is in fact a well-documented practice of all cultures, traditional and modern. Many events in contemporary American life can be understood as a ghost dance of denial: ritualistic behavior that people hope will ward off unpleasant social and economic realities, ecological perils and new global interdependencies that are profoundly threatening to established cultural norms. The ghost dance desperately repeats unexamined, unquestioned “truths” despite contrary evidence.

In our time, the ghost dance can be seen in a celebration of *laissez-faire* capitalism, radical individualism, and the alienability of all human activity and nature for market consumption. In their time, these myths were invaluable. They helped emancipate the “common man” from ancient obligations to feudal overlords by giving individuals the

power not only to elect their own representatives, but to freely sell their labor in open markets. Civil freedoms would henceforth be linked with market freedoms.

Adam Smith and the Founding Fathers were not championing a “market absolutism”; they realized that both commercial interests and individual rights depended critically upon the integrity of a shared moral and civic order. This was the idea of the “commonwealth,” now a little-used term in public life. The essential principle of the commonwealth, as John Adams once put it, is that “no man, nor corporation or association of men have any other title to obtain advantage or particular and exclusive privileges distinct from those of the community, than what arises from the consideration of services rendered to the public.”¹

What was originally seen as a common-sense curtailment of the absolute powers of monarchs (read governments) and the vested rights of a ruling class, has today morphed into an all-embracing economic, cultural and political dogma. The subtle arguments about inalienable rights and common obligations made by Jefferson, Madison, Smith and other 17th and 18th Century philosophers, have congealed into a self-contained, ritualized belief system.

Without limitation, today’s doctrine of “free markets” righteously insists that markets should govern virtually all aspects of civic, cultural and economic life. In fact, this doctrine dominates our politics, economics and public policy. Because it has become universalized, unassailable, unarguable and closed, free-market doctrine has become a *dogma*, or what we have called “FMD.”

FMD declares that individuals maximize their self-interest by buying and selling in the “free market,” and that the renowned Invisible Hand – the aggregation of these transactions – advances the public good. Believers in FMD see market activity as the supreme expression of “freedom.” Any collective alternatives to the “free choices” offered by the market, especially government action, are seen as coercive and benighted.

Since FMD regards individuals as the sole originators of wealth, it follows that they alone should be entitled to own and control wealth. Government action to control property is considered inherently suspect because government is bureaucratic and wasteful, goes the thinking, while “free” individuals acting through the market are far more intelligent and innovative. Because the market is presumed to be more efficient than government, the default strategy for managing public resources is to privatize and marketize them. Attempts by government to restrict the prerogatives of ownership are often blasted as confiscatory, punitive or unconstitutional “takings.”

As for the social disruptions and environmental harms caused by market activity, FMD regards them as aberrations that markets will ameliorate over the long term. The churn of “creative destruction” – the phrase coined by economist Joseph Schumpeter and much-touted by the *Wall Street Journal* – is said to be our best assurance of social equity and accountability. This faith is reflected in such “common sense” as “a rising tide raises all boats” and “progress through economic growth.”

FMD is far more than a matter of economics, however. It is a moral calculus and foundational set of social norms. It declares price to be the best indicator of value and that market principles as the fairest way to allocate wealth and other rewards. In this sense, FMD is not just the centerpiece of conventional economics, but a catechism of our politics, economics and culture – our American creed.

An Insurgent New Worldview

Yet even as FMD orthodoxy dictates the scope of permissible discussion in American life, a powerful new tide is rushing in to batter the citadel. Dissenting critiques are emanating from a variety of improbable sources – the hard sciences, behavioral economics and complexity theory, robust new types of Internet-based communities, and startling new trans-national social movements.

These eclectic and evolving insurgencies do not constitute a coherent response to FMD – yet. But look more closely, and with an open mind, and begin to connect the dots. A remarkable array of scientific discoveries, academic conceptualizations and social practices are converging around some common principles. One can discern, in fact, some deep and disruptive challenges to conventional notions of property rights, free markets, organizational hierarchy, national sovereignty and human nature.

Surely a primary exhibit is the startling growth of free and open source software, especially as exemplified by Linux. It seems nothing short of miraculous that a global network of thousands of volunteers operating via the Internet could build a highly complex operating system that could out-perform Microsoft’s products. Our surprise merely suggests the limits of our mental categories, which cannot fathom how online communities harness personal identity and collaboration to produce such a sophisticated “product.” A number of major companies such as IBM and Hewlett-Packard, however, understand that open source is a serious business proposition, not mere idealism, and have made it a core part of their competitive market strategies.

Equally astonishing are the varieties of Internet-based networking communities that are out-flanking commercial venues. Collaborative websites, listservs, peer-to-peer file sharing, weblogs, institutional repositories at universities, new content licensing schemes and “tagging” protocols for digital content: such tools are giving rise to entirely new sorts of creative genres, research literature and cultural platforms. In turn, these online platforms are propelling the growth of many powerful social movements of global scope -- sustainable environmentalism, human rights, socially responsible trade, affordable AIDS drugs, peace.

Within the academy, meanwhile, genetics, evolutionary biology and brain neuroscience are challenging classical models of human brain functioning and cognitive processes. Comparative anthropologists and evolutionary psychologists are making

breakthrough findings about our species' deeply embedded instincts for social cooperation. A new generation of economists is finding that neoclassical economic theories are just too rigid and abstract to do justice to the empirical realities of modern economic life. Behavioral economics is building a new intellectual edifice to explain how personal and social factors affect economic activity. Complexity theory is providing new conceptual tools for understanding the non-linear, dynamic flows of natural and economic systems.

Predictably, the Guardians of our traditional order – neoclassical economists, the scientific establishment, the major political parties, Washington policy elite, the corporate media and business leadership – generally have little interest in the dissenting critiques. FMD creed is, after all, comfortably entrenched and seamlessly comprehensive. Its defenders do not “need” to explain disturbances on the periphery. FMD provides a “good enough” template for explaining how things “really” work.

And in truth, most of us have so internalized the cognitive universe of FMD that it seems a bit disingenuous to rail against some external villains. The perceptual myopia that afflicts our culture – let's be frank -- lies within ourselves. It is not easy to change one's sense of identity and cultural outlook, let alone cognitive habits. Psychology experiments have shown that the more a belief system fails, the more tenaciously its adherents cling to it.

This may help explain why American culture seems caught in some sort of Groundhog Day, senselessly forced to repeat the same cycles of the past *ad infinitum*. In our fixation on free-market dogma, we are enacting our very own ghost dance. We are stuck in an interregnum. An aging corpus of free-market dogma maintains a tight stranglehold on American life even as its explanatory power wanes in the face of new realities.

As the ghost dance intensifies, it is worth asking: Why is the old order imperiled, and how is it incompatible with emerging trends? Based on the fragmentary evidence now emerging, what are the key features of the new worldview? How might we begin to embrace a more realistic understanding the human condition and social structures in the 21st Century?

A Renaissance of the Commons

The emerging paradigm that we see, based on the dispersed insurgencies bursting out, is the renaissance of the commons. The commons is a social regime for managing shared resources and forging a community of shared values and purpose. Unlike markets, which rely upon *price* as the sole dimension of value, a commons is organized around a richer blend of human needs – for identity, community, fame and honor – which are indivisible and inalienable, as well as more “tangible” rewards.

In a commons, transactions are based on ongoing moral, social and personal relationships, not episodic, impersonal exchanges of money. A commons is also marked by openness. This helps assure that developments affecting the community’s interests can be scrutinized by all. It also helps the commoners identify and punish free-riders, preventing the so-called tragedy of the commons. (This term is actually a misnomer because it describes an open-access regime of private appropriation; a commons, by contrast, is managed by consensual rules, membership, limits on alienability, transparency, etc.)

Human societies need markets for their ability to stimulate innovation, efficiency and growth. Price is a powerful organizing tool in this respect, facilitated by the division of resources into private property. But human societies also need things that are indivisible and inalienable, which is the essence of the commons. If the social relationships and values that constitute a commons can be bought and sold – made

“alienable” – they are destroyed. It is hard to trust someone whose loyalty and judgment can be “bought,” just as we lose respect for a government corrupted by bribery and corruption. Similarly, many shared resources – parks, libraries, ecosystems, democracy – can only be sustained if they are held “in common.” Their organic integrity must be protected against private exploitation, lest the shared resource be converted into a market and destroyed.

While the champions of FMD regard markets as the universal, default norm of human social organization, recent developments seem to be refuting that. Evolutionary scientists are coming to believe that many social behaviors that are crucial to the commons – social reciprocity, trust, shared values – have played a vital practical role in assuring human survival and adaptation. These human behaviors have been at least as important as the more familiar economic notions of competition and alienability.

Now, with the rise of the Internet, we are seeing a strangely appropriate convergence of the future and the past: A lightweight, high-tech infrastructure, the Internet, is enabling some primordial human impulses to come to the fore in powerful new ways. Fundamental truths that FMD has always denied – that human cooperation comes naturally, that collective action can be more efficient than markets, that the gift economy is a potent source of value-creation and human satisfaction – are being vindicated. It is still quite early in the game, but the commons may be the critical matrix for understanding many of the rebellions now underway.

It is foolish to think that the new commons will (or should) replace markets. Markets are far too necessary to human welfare to disappear. But what is likely to emerge – indeed, what is already occurring – is the rise of a hybrid without a name that will complement, and mitigate free-market dogma. This new path, the commons template, is neither *laissez-faire* capitalism nor state-managed collectivism. It moves beyond the antimonies of “free” versus “regulated” markets and seeks to resolve the intensifying

contradictions of market capitalism. Through the commons template, one can imagine having the efficiency, flexibility and freedom of markets on the one hand, and preserving and advancing the common good on the other.

The following sections explore the remarkable renaissance of the commons as reflected in new academic approaches, economic schools of thought, social practices and global movements.

New Scientific Evidence vs. *Homo economicus*

One of the most potent challenges to free-market dogma – and affirmations of the commons – is coming from new scientific findings about human nature. Thanks to recent research into brain functioning, genetics, developmental and evolutionary psychology and biology, and comparative anthropology, we need no longer accept the armchair speculations of 17th Century philosophers such as David Hume, John Locke, and Thomas Hobbes about the actual propensities and capacities of human beings.

Although our understanding is by no means complete, recent research points to a coherent new understanding of basic aspects of human nature. The research – which is inherently non-ideological and eminently testable – is almost a point-for-point refutation of the premises of free-market dogma. The implications are enormous. If the different strands of the emerging sciences could be woven together and popularized, the resulting synthesis could catalyze a sea change in our images of ourselves and human society.

While FMD conveniently offers an antiquated, highly simplified model of human nature and economic behavior, a new, more dynamic model of human agency and social identity is starting to emerge. Our history as a species reveals that social cooperation, not just brutal competition, has been a critical evolutionary factor in the survival of the human species. Unfortunately, the story of human nature continues to be told in the sound

bites of 17th century philosophers. A more balanced, subtle and realistic account is long overdue.

The skeptic might ask, Why should we bother to address the vision of human nature put forward by free-market dogma? Why does it matter? Such an inquiry might be interesting and diverting, but so what if *homo economicus* is an agreed-upon fable, an abstract ideal? Isn't that more or less how the world works?

That is precisely the point: the world *does not* work according to the conventional representations of FMD, and those representations have incalculable sway over economics, politics, public policy and culture. To be sure, nasty, brutish behavior still exists and flourishes. But the new sciences are showing that social reciprocity and trust are deeply engrained – indeed, biologically encoded -- principles of our humanity. They are a precondition even for markets.

As Karl Polanyi described in his landmark book, *The Great Transformation*, no “free market” can survive very long without extensive social institutions and shared ethical norms. A lot of cooperation and trust is needed to devise legal regimes, establish regulatory agencies, administer a judicial system and maintain consumer confidence in markets. FMD is notably deficient in recognizing this fact, however. This was vividly demonstrated when free marketeers tried to introduce market competition to the former Soviet Union. Predictably, the experiments floundered because the necessary institutions of civil society and cultural norms simply did not exist.

This very blind spot in the epistemology of the market has long been at work in the West as well. Without outside intervention, FMD generally *doesn't recognize* that social ethics, a healthy environment, product safety and community well-being are important to the long-term vitality of markets. Its economic theories see them as distracting sideshows to the main action, market exchange. Without collective oversight

(which defenders of FMD constantly seek to undermine), scandals such as Enron, Global Crossing, Worldcom, Arthur Andersen are, sadly, inevitable.

It is here that the new insurgencies are making remarkable headway against FMD. Ingeniously, they are harnessing the forces that FMD dismisses as “exogenous variables” and leveraging them to maximum advantage. This is the most significant (and unacknowledged) achievement of the Internet – the empowerment of countless new forms of social communion, creativity and knowledge without the ministrations of the market. The powerful psychic and social energies driving the growth of the Internet are quite inexplicable – and invisible – by the terms of FMD.

Consider it the revenge of the commons: the social context that FMD has long regarded as incidental is now surging forward as a powerful force in its own right. The emergence of the commons in cyberspace has a tantalizing correspondence with new scientific findings about the evolutionary character of the human species.

The Scientific Case for the Commons

A growing body of evidence suggests that social trust and cooperation has been the enduring theme of human evolution. FMD model of *homo economicus*, which purports to be a universal norm, actually has very little basis in fact or history. There are three general lines of evidence.

1. Social exchange is an “evolutionarily stable strategy” (ESS) and thus the critical platform for cognitive development in humans. In evaluating the “fitness” of an adaptation or mutation, geneticists, evolutionary biologists and mathematical game theorists often look for evidence of an “evolutionarily stable strategy,” or ESS. Such strategies are noteworthy because they are powerfully adaptive and stable; in effect they cannot be displaced by any other evolutionary strategy – or mutation or phenotype -- because there is no advantage in doing so. If an evolutionary trait can be considered an

ESS by the lights of genetics or evolutionary biology, therefore, it constitutes powerful evidence that it is a deep aspect of human nature.

Recent studies have argued that the notion of “reciprocal altruism” is an ESS. So are many innate “social contracting algorithms” of the human brain.² What makes this evidence especially compelling is that the ESS approach can successfully predict what kind of “strategies” and even special competences will emerge in different social exchange networks. For example, many different species – vampire bats, wolves, ravens, baboons, and chimpanzees – exhibit similar social behaviors and emotions such as sympathy, attachment, embarrassment, dominant pride and humble submission. Both ravens and vampire bats can detect “cheaters” and punish them accordingly – a skill needed to thwart free-riders and maintain the integrity of the group.

This indicates that “cooperative strategies” have evolved in different species and, because of the evolutionary advantages that they offer, become encoded in their genome. While much more needs to be learned in this area, evolutionary sciences appear to be identifying some of the basic principles animating the “social physics” of human behavior.³ When different species independently “arrive at” the same ESS, it suggests that there is a unifying social physics governing complex forms of behaviors regardless of the species.

2. Reciprocal social exchange is a highly specialized brain function critical to the rise of identity, community and culture. The fact that humans can communicate, coordinate, and carry out social exchanges so effectively stems from uniquely human social “algorithms” for doing so – patterns of instinctive response that are genetically encoded. Social contract algorithms are those innate capacities of individuals that enable human societies to function as communities. Such algorithms include a person’s sense of justice and guilt, social reciprocity through gift-giving, and an ability to “read” social cues.

While earlier sociobiologists believed that natural selection worked almost exclusively at the individual level of gene mutation, it has become increasingly clear that many social algorithms also co-evolve at the “group” level.⁴ David Sloan Wilson, an evolutionary biologist who has written extensively on natural selection and cooperation, writes that “social groups become so functionally integrated that they become higher-level organisms in their own right.”⁵ At such a point, evolutionary pressures appear to play out at the collective level, not just at the genetic and individual level. (There is a spectrum of views about the level at which natural selection is most influential – group or individual -- but not even Darwin was as radical an “individualist” as many contemporary scientists such as Richard Dawkins, author of *The Selfish Gene*.)⁶

Historically, many scientists and economists have relied upon rational models of self-interest to explain how organisms evolve. Game theory and “prisoner’s dilemma” scenarios are often used to explore how people “really” behave. The presumption is that people’s natural inclination is to “win” at the expense of their opponent or their “neighbor.” But neuroscientists are discovering that rational-actor models grossly misrepresent how the human organism actually functions. It seems that we as species are neurologically hard-wired to be empathic and cooperative, and to connect emotionally with what is occurring in the world in general. Moreover, this occurs at a species level, not at an individual level.⁷

A species sustains itself through such cooperation. In this sense, the idea of the commons is not a cultural artifact of English history. It is a driving principle of natural selection that is literally manifested in the architecture and physiology of the brains of *homo sapiens*. It reveals itself in the kinds of effective group cooperation that humans have shown throughout two millions years, and in the development of language itself, which is thought to serve important social-bonding purposes.

Brain neuroscience is starting to confirm that we may be “hard-wired” to empathize and cooperate. A group of neuroscientists in Parma led by Giovanna Rizzolatti and Vittorio Gallese studied how brain neurons responded in the prefrontal cortex of macaque monkeys. Scientists found that when a monkey performed a complex motor action, the same neurons would fire in other monkeys who were merely watching.⁸ These neurons – “mirror neurons” – are complemented by “canonical neurons” in adjacent brain tissue, which fire when an animal sees an object of the kind normally involved in a given action. All these neurons, in turn, are connected to the portions of the brain that process emotions and govern empathy.

As linguist George Lakoff explains, “We know from psychology professor Paul Ekman’s research that configurations of facial muscles express certain emotions. Presumably, our mirror neurons fire when we see the same configurations of facial muscles on someone else that our facial muscles would make. And that firing can activate our own emotional centers. In short, that allows us to empathize – to feel someone else’s pain or joy.... We have evolved to be empathetic (via mirror neurons and connections to the emotional centers of the brain) and to be connected to the world (via canonical neurons). Empathy and connection to the other and to the physical environment are central aspects of human nature!”⁹

Altruism is not limited to human beings, but is typical of many different social species. Experiments with monkeys have shown that monkeys would refrain from pulling a chain to deliver food if it would result in shocking other monkeys. This suggests that ethics – a sense of compassion and reciprocity – is not some kind of soft-headed, idealistic and therefore untenable evolutionary strategy of the sort dismissed by “tough realists.” It is, rather, a well-established fitness strategy that seems to be encoded in the behaviors of many species. The highly respected neurologist Antonio Damasio has argued in his recent book, *Looking for Spinoza*, that social emotions have an identifiable

physiology and measurable role in the behavior of the human brain. Anger, fear, shame, indignation, jealousy, pride, compassion, gratitude, sorrow and joy appear to be part of “an overall program of bioregulation.”¹⁰

Damasio writes: “The biological reality of self-preservation leads to virtue because in our inalienable need to maintain ourselves we must, of necessity, help preserve other selves. If we fail to do so so, we perish and are thus violating the foundational principle, and relinquishing the virtue that lies in self-preservation. The secondary foundation of virtue then is the reality of a social structure and the presence of other living organisms in a complex system of interdependence with our own organism.”¹¹

Evolutionary biologists have also discovered that, contrary to the precepts of free-market doctrine, people tend to act in ways that express and reinforce the social exchange rules of their group, which typically follow principles of reciprocal exchange. Social exchange – “I’ll scratch your back if you scratch mine” -- is the process of cooperating for mutual benefit. Sometimes called “reciprocal altruism,” it is an adaptive trait that is a deeply rooted product of natural selection that benefits the collective. The history of cultures shows that social exchange is in fact a human universal; it is not a recent cultural invention.

“This mutual provisioning of benefits, each conditional on the others’ compliance, is rare in the animal kingdom,” write evolutionary psychologists Leda Cosmides and John Tooby. “Social exchange cannot be generated by a simple general learning mechanism, such as classical or operant conditioning....This strongly suggests that engaging in social exchange requires specific cognitive machinery, which some species have and others lack.”¹²

Cross-cultural analysis has verified the neurobiological evidence. In a survey of fifteen very different societies, economist Samuel Bowles has shown that the celebrated

homo economicus invoked by neoclassical economists does not exist in any recognizable form. He simply could not be found.¹³

3. The rational “free choices” that FMD considers a primary justification are in many instances reflexive social “flocking.” One of the central premises of FMD is that individuals consciously make rational choices to advance their self-interests, which a responsive market then actualizes to achieve the public good. But new findings in brain neurology are showing that a great deal of human behavior is not a matter of conscious deliberation and rationality, but of physiological and social instinct. New discoveries about cognition and thought suggest that humans are patently not “rational actors” who approach every situation free of deeply ingrained genetic predilections and cultural habits. As a species, we act in species-symptomatic ways – ways that define and perpetuate the collective (the species), not the individual. Moreover, “rationality” is but one of many capacities of the brain. Some of the most influential forces driving human behavior are autonomic reflexes that are independent, highly localized and fragmented in the brain.

Cognitive scientists are now realizing that it is too parochial to focus exclusively on the brain if we wish to understand human intelligence. Cognition does not take place in brain tissue alone. It takes place in the context of our bodies and the external environment, both of which we constantly use to gather information, draw upon as memory aids, and conduct computations. Patients with Alzheimer’s Disease, for example, rely heavily upon a highly structured environment, much of it self-created, in order to recognize things, make mental associations, and reason. Change the patients’ physical environment – move them to another location – and they lose large portions of their memory and cognitive capacity. In a similar way, all of us rely critically upon an external “scaffolding” of cognitive aids – books, newspapers, computers, other people, telephones, symbols, etc. – to “think” and function intelligently.

FMD is therefore incorrect to depict conscious and rational thought as a sovereign, independent force residing within individuals. The mind is deeply intermingled with its external environment, and is particularly influenced by the cultural milieu that it inhabits. “Individual brains should not take all the credit for the flow of thoughts or the generation of reasoned responses,” writes cognitive scientist and philosopher Andy Clarke. “Brain and world collaborate in ways that are richer and more clearly driven by computational and informational needs than was previously suspected.”¹⁴ Without abstract meta-representations of language, ritual, social cues, etc., “rational choice” is literally impossible.

Contrary to FMD view of independent choice, human beings seem to be neurologically and genetically “hard wired” with many innate routines and protocols, most of which help social groups to coordinate their actions. These routines and protocols are essentially social in nature and driven more by instinct than by rationality. Because these evolutionary features of the human brain seem so deeply rooted and enduring, evolutionary game theorists believe they reflect an “equilibrium selection” – i.e., an Evolutionary Stable Strategy for human survival. At heart, we are social creatures, not rational automatons.

Beyond Determinism: A Constructivist Human Nature

The empirical findings of the new sciences do not suggest a reductionist notion of a fixed and universal “human nature” of the sort portrayed in countless “nature/nurture” arguments. Rather, they suggest a far more “spacious” model of human nature. Human nature is not “determined” by genes, as popular mythology often seems to hold. It consists of shared and specific competencies that are expressed in different ways by different societies. It is not a reductionist model, but a profoundly *constructivist* model.

Innate propensities co-evolve over time with a wide range of social and physical conditions.¹⁵

Seen from this perspective, we can see that FMD is a highly artificial, if not fictional, notion of humanity. The free-market dogma worldview systematically, ideologically, privileges certain attributes of human beings while disregarding other innate propensities. It ignores the crucial interdependencies that individuals have with each other, with other cultures, and with nature. It validates a normative universe of cognition that is at odds with our genetic, neurological, psychological and social history as a species. It should not be surprising that FMD is also proving to be highly destructive of the natural environment.

It is time to recognize that our “neuro-cognitive architecture” has co-evolved with the natural environment over millions of years, predisposing us towards certain baseline psychological, social and cognitive behaviors. In the long sweep of human history, the values and behaviors that we take as normative in our high-technology, market-driven, media-saturated environment, are, in fact, profoundly aberrational.

The new scientific findings are not merely parlor-room curiosities. As we will see below, they could be the foundation for more enlightened public policies. Rather than privilege the unexamined tenets of free-market individualism, we could get better and more humane results if we began to leverage our deeply engrained social tendencies.

New Economic Challenges to FMD

Just as the evolutionary sciences are contesting FMD schema of human nature, so behavioral economics is questioning its core economic assumptions. Over the past generation, consumer activists and environmentalists have amassed a considerable literature documenting the chasm that separates market theory and realities.¹⁶ A handful of prominent economists – John Kenneth Galbraith, Kenneth Arrow and Vernon Smith

come to mind – have dwelt on the serious contradictions of FMD. But now a new generation of economists is beginning to fashion a coherent alternative set of theoretical principles for understanding how markets actually work. Free-market dogma may never be the same.

The standard MO for many economists is to traffic in theoretical abstractions and give short shrift to on-the-ground realities. An old joke has two economists on a desert island when a soda bottle washes ashore. One declares, “Assume a bottle opener....” New schools of economic thought – especially behavioral economics and complexity theory – are moving beyond this widely accepted cop-out. While they emphasize different sets of principles, the new approaches share a contempt for three primary tenets of free-market economics – the notions of “unbounded rationality,” “unbounded selfishness,” and “unbounded willpower.”

The first presumes that economic actors can be perfectly informed in all their economic choices. The second presumes that economic actors necessarily act to maximize their personal and material gain. And the third presumes that economic actors have limitless determination to achieve these objectives. These axioms supposedly combine to animate the Invisible Hand, the familiar principle of Economics 101, which holds that each individual and corporation will generate the optimum public good by pursuing its own narrow self-interests without impediment. The confluence of private capital, private property and private self-interests are said to drive us, efficiently and effectively, to new levels of innovation, wealth creation and progress.

But this idealized model of human economic behavior is plausible only if one discounts or ignores the “externalities” that usually accompany market behavior – the social disruptions, ecological damage, health and safety hazards, and deferred costs. It is easy to understand why we might collude in overlooking these costs. Many are hard to measure and are speculative in nature. (What are the real costs of driving the snail darter

into extinction?) The chief beneficiaries of FMD, investors, are usually not eager to document the full breadth of market externalities lest they be required to pay for them.

Finally, the actual inequities and costs of FMD have been tolerated for so long because the only other coherent method of wealth-creation – the centralized command-and-control system typified by the former Soviet Union – was so notoriously wasteful and inefficient. The standards for judging the success of FMD are singularly low.

And so FMD, despite its patent deficiencies, continues to be accepted as a virtual natural law of economics and the fundamental model for wealth creation and development throughout the world. Social inequities, environmental degradation, cultural homogenization and wealth concentration are accepted with a shrug as tragic yet necessary costs of achieving “progress.” Tom Friedman of *The New York Times* has approvingly called this Faustian bargain the “golden straightjacket.”¹⁷

Behavioral economics is beginning to open up new vistas of possibility, however. By developing rigorous empirical models of the ways that markets actually behave, and by bringing market “externalities” back into the discussion, behavioral economists are pioneering radically different metrics for understanding the supposed “efficiency” and “rationality” of “free markets.” Their findings are undermining the largely unexamined assumption that markets are the most effective and legitimate mechanisms for collecting and allocating public resources. Using new types of on-the-ground research, behavioral economists are validating that humans actually exhibit a “bounded rationality” in their market choices. They often exhibit trust and reciprocity towards other economic players rather than selfishness. They exhibit limited motivation to maximize their “rationality” and personal gain. Social exchange theory is beginning to describe how people naturally make decisions and cooperate.

One must emphasize, again, that market activity is not going to become obsolete any time soon. It not only produces negative externalities (events beyond the market

transaction itself) like pollution and social disruption; it often produces *positive* externalities. Much of the story of the transition from feudalism to mercantilism, indeed, is about how popular access to capital undermined the power and privilege of landed and titled elites, and opened the door for broader participation in the economy. The market system created new jobs, new wealth based on merit, and new economic and political freedoms.

From the vantage point of the 21st Century, however, we can now see that there are inherent limitations to what 18th century price mechanisms and property conventions can achieve. While FMD declares that the price mechanism makes all resources “substitutable,” for example, the real world of human beings, nature and public resources is not always so tractable. Not all resources are, or should be, indivisible and inalienable, as FMD presumes. “Progress” may not really be served by letting markets decide which new species should be invented; by promoting incessant television-watching among young children; and by building functional substitutes for the melting polar ice caps. FMD is also ill-equipped to allocate resources and incentives in fair and humane ways.

Yet just as the Enlightenment and market capitalism lifted the yoke of feudalism and unleashed unimagined forms of creativity, prosperity and civic participation, so the renaissance of the commons offers new strategies for resolving many of the paralyzing conundrums of market capitalism. The new sciences and commons-based social regimes point to new principles for coping with issues -- “externalities,” “market failure,” “irrational behaviors,” “agency costs,” and “public goods” – that otherwise cannot be easily addressed within the terms of market theory.

Behavioral economists are not the only ones looking for new theoretical principles; others are using complexity theory to help explain non-linear behaviors and the importance of social context in markets, among other real-life dynamics. This still-emerging critique is far more humanistic and socially oriented than the rigid, quantitative

models of conventional economics. Instead of trying to come up with tidy mathematical formalities that depict a specious market “equilibria,” complexity theorists are far more concerned with understanding the importance of singular evolutionary pathways (for individuals, companies and economies), the properties of self-organizing systems, and the patterns of non-linear, dynamic change.

Taken together, these new types of economic thought are subverting some core principles of an earlier economic worldview and striding toward a post-market economics that has yet to be named or fully described. This novel but highly cogent worldview is all but incomprehensible to mainstream economic models of the world that derive, let us recall, from the simplistic, static and mechanical concepts of 17th Century thought. Not surprisingly, the Guardians of FMD and their critics have yet to engage in a frank, direct dialogue; their categories of understanding are so radically incommensurate!

The new sciences are attracting increasing attention, however, and for a simple reason. They are better able to explain contemporary economic phenomena. They make more sense. The growing maturity of behavioral economics can be seen in the recent Nobel Laureates given to Professor Vernon Smith of George Mason University and Professor Daniel Kahneman of Princeton University, both of whom are behavioral economists. Similarly, since its founding in 1994, the Santa Fe Institute, the leading outpost of complexity theorists, has steadily gained in stature among innovative, forward-thinking economists.

The Rise of the Internet and Global Culture

If the latest advances in evolutionary sciences and economics remain unknown to most of the public, the impact of the Internet is another matter. Its social, economic and political repercussions are one of the most stunning developments of recent history. Here, too, the story is mostly about the surge of the commons and the limits of free-market dogma.

“We share a collective blind spot to the possibility that human beings can act together to create real value, without relying either on selfish exploitation of private property (or markets or firms) or top-down governmental action,” write Internet law scholars David Johnson and Susan Crawford. “Today’s political conversation ignores the potential for emergent, networked collective action. But right in front of our noses is a living example of a system that is working to produce value without visible control or rent-seeking behavior.”¹⁸

This living system is, of course, the Internet. But because its dynamics do not fit easily into current political and economic categories, its powerful role in creating value through social collaboration remains largely unseen. Many modes of interaction occur over the Internet, but the most robust ones tend to leverage our social desires to share and collaborate. Listservs, collaborative websites, open source software, and peer-to-peer file sharing technologies are among the ways that a dispersed, decentralized collective of people are coming together to create value. Scientists use P2P networks to collectively advance their research; thousands of online self-help groups host everything from genealogical research to child-adoption guidance to volunteer mapping of the craters of Mars.

Not only do these new self-organizing, “bottom-up” networks of individuals arise spontaneously without the customary “top-down” organizing apparatus of a corporation, government agency or nonprofit, they tend to be much more innovative and efficient than market mechanisms. The kinds of leadership and coordination that once required a business enterprise – as economist Noble Laureate Ronald Coase declared in his famous 1934 essay on the rationale for forming corporations – can now take place outside of formal boundaries of a corporation with greater efficiency and creativity.¹⁹ This is powerfully confirmed by the flourishing open source software movement and explained

in theoretical detail by NYU law professor Yochai Benkler in his essay, “Coase’s Penguin.”²⁰ (The penguin in the logo for Linux software.)

The efficiency claims for the commons are supported by conventional economic analysis. “The laws of network topology dictate that the more people can be connected, and the more easily those connected people can form into value-creating groups, the more easily value will be created,” write Johnson and Crawford.

The resulting conversation creates immense value that is not counted in economic terms nor treated as part of any governmental/political system. Yet this interwoven tapestry of collective conversation provides a large and growing percentage of the value humans collectively seek: our education, our decisions about what to do with our privately owned resources (our capital, our time, our products and services), our decisions regarding what government should do, and our social and family relationships. This new ‘commonwealth’ has flourished precisely because, having gone unnoticed, it has had a chance to thrive.

Because FMD systematically fails to recognize the powerful influence of social context, it fails to appreciate that its own structure of property rights, contracts, enforcement, profit incentives, etc., are sustained by a vast social apparatus and cultural norms which entail huge agency and transaction costs. It is very expensive for a company to offer high salaries to top management, hire attorneys to draft contracts, go to court to enforce violators, and so forth. But when leadership, coordination and motivation can be achieved easily through self-synchronizing, self-enforcing means, gracefully leveraging our natural social tendencies, why should anyone be surprised that such a system of exchange will be more efficient, effective and equitable than a market system? Communities of trust and transparency can be fantastically efficient! The rise of the Internet and various software systems are so powerful precisely because they leverage

people's natural desire for meaning, trust and social belonging – traits that FMD cannot understand, but which are deeply embedded in our evolutionary history.

This is the as-yet-untold story of the commons. In the commons, price alone is not the sole arbitrator of value and property rights may actually impede the creation of value. A larger set of human values, embodied in historically unique communities, determines the meaning of “value.” Money is not the only meaningful currency.

Such concepts are difficult for people steeped in our current property-bounded traditions to accept. How can we collectively create valuable resources that are not owned by anyone (or that are owned by everyone, by way of government)? We assume that resources must be treated as “property” to make sure they are distributed, by way of the market, to those who can exploit them most efficiently. We believe that we should create “public goods” by means of government. But in the age of the Internet, these obvious propositions are not necessarily true. Intangible resources that we often treat as “intellectual property” *increase* in value as they are made available to the Internet, where others can easily find them and add value. (The rub: private companies may or may not be able to capture that increase in value for themselves alone.)

Significantly, this commons perspective is entirely supported by the findings of the evolutionary sciences. Human beings share a common genetic heritage with all forms of life, and we are therefore indivisible and interdependent with other species. Far from evolving as independent, self-actualizing and materialistic actors, human beings emerged as a relatively small and vulnerable species 150,000 years ago because we developed a unique set of social contract algorithms based on language and cooperation. How oddly appropriate: the Internet and related technologies are simply allowing us to give fuller expression to our evolutionary legacy!

This helps account for the fledgling new forms of global culture that are coalescing around issues that must be addressed if we are going to survive as a species:

preservation of ecological systems, international cooperation to assure world peace and human rights, and more socially constructive forms of global commerce. By empowering our social natures at a grassroots level, beneath the power of market institutions and nation-states, a new citizen-driven ethic is emerging on the global stage.

As David Bollier describes in his 2003 Aspen Institute report, *The Rise of Netpolitik*, the Internet is giving new global platforms to diasporic ethnic communities such as dispersed populations of emigrant Chinese and exiles from Ghana and Zimbabwe.²¹ It is enabling international political movements to coordinate the work of thousands of citizens, leading to impressive public agitation to ban land mines, and clean up the Bhopal chemical disaster. Millions of citizens are bypassing the corporate media and converging around personal web logs and independent websites to find information they consider more reliable or at least more overt about their biases.

In short, the commons is growing rapidly. As it becomes a less exotic and more familiar cultural category, so there is a greater prospect of creating more transparent, accountable, ecologically benign and humane institutions. Just as the environmental movement introduced a new kind of framing rhetoric into public dialogue, so “the commons” opens up new opportunities to reframe issues. It asks us to move beyond conventional dualities of private versus public, market versus state, individual versus the group, consumer versus seller. Such dichotomies become less relevant as the new models of commons-exchange take root and proliferate.

But what might these models look like? We conclude by offering a speculative preview of how the commons perspective might alter our approach to numerous public policy questions.

Public Policy in the Age of the Commons

The resurgent notion of the commons may be most valuable in helping us re-conceptualize approaches to public policy and localized modes of self-governance. One of its signal strengths is its capacity to combine social, moral and ecological choices with serious economics in a coherent theoretical framework. The concepts that describe the commons, if elaborated, could serve as valuable building blocks for a kind of post-market critique. Precisely because it approaches economic questions in a holistic, long-term way, it embodies a more humane and sustainable vision.

The worldview implied by the commons opens up fresh new avenues for the imagination and institutional innovation. One promising idea is a new conception of ownership rights and decisionmaking authority. Collective action can often lower “agency costs” within organizations through greater efficiencies of trust, reciprocity and self-enforcing social contracts. They also tend to result in more equitable outcomes.

One way to facilitate the creation of organized commons is to develop new forms of “tags” that can “mark off” work that is developed through a commons, as opposed to a market. This is essentially what the General Public License, or GPL, does for products of free software communities. It sets the work product off from the standard market products and identifies it as legally “belonging” to the commons. This ensures that no free riders can “take private” the code that the members of the commons have created.²²

One can also imagine new public policy vehicles for asserting direct and responsible stewardship of collective resources. Already there is a burgeoning movement seeking to use certain segments of the public’s electro-magnetic spectrum as a commons (instead of assigning exclusive control to commercial licensees). The State of Alaska has pioneered the use of a stakeholder trust, the Alaska Permanent Fund, to share oil revenues from drilling on state land, with all Alaskan citizens.²³ This model has inspired a Sky Trust proposal to give all citizens an equity stake in the atmosphere, so that they can reap

the financial benefits of selling “pollution rights” to corporations (instead of giving away those rights for free).²⁴

The essential point of such commons vehicles is to bypass the bloated overhead of traditional corporations and government bureaucracies, and to more directly empower citizens in the stewardship of resources that they legally or morally own.

The commons approach to policy-making has some deep implications for how we reconcile market activity with the natural environment. By recognizing that human beings are interdependent with all of life – rather than somehow apart, as FMD holds – we can begin to craft institutions that are more compatible with life systems. Amory Lovins and his colleagues have developed this perspective in their book, *Natural Capitalism*.²⁵

Embracing the principles of the commons can also yield greater efficiencies and sustainable wealth-creation opportunities. Market theory holds that creating private property rights gives people indispensable incentives to produce new wealth. But the empirical evidence of this framework is being refuted in a growing number of wealth-creating realms. Software development, natural resource management, and online knowledge, among other areas, are showing that a commons stewardship can be more efficient, sustainable and feasible over the long term. It turns out that the much-vaunted “efficiency” of material self-interest, as advanced through property rights, is often an illusion because the markets/property/contracts framework structurally ignores the significant externalized costs it displaces onto other people and nature. A commons critique also helps us get beyond some fatally deceptive assumptions of market theory, which holds that all inputs are essentially fungible and substitutable.

But this logic has catastrophic results when applied to nature – for good reason. Ecological areas tend to be unique and indivisible. FMD makes a “category mistake” in applying false analytic terms onto natural systems that are organic and interconnected. FMD presumes that parts of nature can be divided, monetized and traded without harm to

the whole. The past half-century of pell-mell economic development has vividly demonstrated the ecological fallacy of this doctrine.²⁶

In a similar fashion, a commons critique can help expose the dangers of surrendering the social order and its values to commercial forces. Major corporations are now exploiting brain and anthropological research to explore how humans make affective attachments from childhood through adulthood.²⁷ Sony's highly successful Aibo robotic dog is an early prototype of such "emotionally designed" products. Disney has similar aspirations in designing animation and theme park characters.

This intent of such research is to develop emotionally irresistible products and experiences, and to intensify brand loyalties and product dependencies. The market logic is impeccable and ingenious. But the morality and cultural wisdom of exploiting children's "Darwinian buttons" in order to open up new market opportunities is dubious. The commons perspective gives one a philosophical vantage point from which to confront the problematic behavior of markets.

Yet another realm that may be invigorated by a commons perspective is international relations and globalization. Throughout most of history, human beings have divided themselves into separate tribes and relied upon force to preserve their tribal differences. But as the once-separated segments of the "family of man" inexorably comes together on the global stage, more people are beginning to realize that we must either learn to co-exist with nature and with each other – or destroy nature and humanity itself.

Rather than accept our past identity as controlling and immutable, the human species must somehow, as a matter of survival, engineer a new leap in our cultural and moral evolution. We must own up to our atavisms, our propensity for reflexive, violent "flocking behavior" in the face of uncertainty and threat. The Holocaust, Rwanda, Kosovo and other pogroms against The Other are not the exception but the rule of human history. But if, in the past, these were evolutionary stable strategies and contributed to the

overall evolutionary success of the species, they are patently lethal in the context of a globally integrated humanity.

Neurologist Antonio Damasio has noted that innate human propensities for cooperation and trust have a dark side as well. “The nice emotions can easily turn nasty and brutish when they are aimed outside the inner circles towards which they are naturally targeted. The result is anger, resentment, and violence, all of which we can easily recognize as a possible embryo of tribal hatred, racism and war. This is the time to introduce the reminder that the best of human behavior is not necessarily wired under the control of the genome. The history of our civilization is, to some extent, the history of a persuasive effort to extend the nest of ‘moral sentiments’ to wider and wider circles of humanity, beyond the restrictions of the inner groups, eventually encompassing the whole of humanity.”²⁸

This may be the story of the new global culture that seems to be emerging – a fitful movement, it would appear, that aspires to cultivate new values and social protocols. At this point, no one can simply declare anything so grand as a new identity and ethos for the emerging global culture. Yet we can start to realize that the either/or, us/them perspective that pits one closed worldview against another is a relic of the Pleistocene era. There is a dawning awareness that it is seriously maladaptive in today’s highly integrated, technologically potent global culture. As weapons of mass destruction have grown smaller, cheaper and more available to everyone, we are facing a threat to humanity that is utterly unprecedented.

What may seem like a moral or cultural crusade of utopian dimensions may in fact be a pragmatic necessity, even to those with the most callous notions of self-interest. Recognizing our identity as a species and our fragile place in evolutionary history may be the first, indispensable step toward saving ourselves.

Such a collective revelation is becoming even more urgent as the lines between what is natural and humanly “constructed” blur. Various new technologies are enabling unprecedented co-mingling of biological life forms with human design -- genetic manipulations of agricultural seedlines, genetic engineering of human beings and animals, and irreversible manipulations of ecological systems and the global atmosphere. These developments signal a new era in human history. Human beings are no longer the children and adversaries of nature, the abject subjects of the gods. We are nature’s stewards; we have become our parents. Nature is not something outside ourselves; it is something that we are constructing – co-creating – with all forms of technology, resulting in new forms of co-evolution between ourselves and nature.

Even though we are totally unprepared for this responsibility, within the next decade human societies will somehow have to confront – or evade – the inevitable problems that ensue. To the extent that many problems stem from our overweening faith in FMD, a critique that acknowledges our common humanity – and not just the competitive pursuit of private gain – could help us chart a new course.

It’s Time to Start a New Conversation

It is time to get beyond the ghost dance that afflicts this moment in our history. We desperately need a new humanistic vision, one that gets us past the large flaws and dated assumptions of FMD. The archetype of the commons may provide just such a platform for building such a vision. It complements the findings of the new sciences, it cogently deconstructs free-market ideology, and it offers its own feasible alternatives.

There could not be a more apt moment for ambitious, imaginative thinking. The new sciences are yielding a rich harvest of new insights into our contemporary circumstances. The Internet is enabling rich new forms of value-creation and social

exchange. Many old models of economic life and human nature, relics of the 18th Century, are crumbling. The rudiments of a new citizen-based global culture are sprouting up.

But we must remember that the old rarely yields to the new without a struggle. The new must be actively and imaginatively built. That will require forging new networks of visionary thinkers and bringing disparate disciplines together into new conversations. It will require challenging the comfortable shibboleths of FMD and taking new risks to develop a more accurate understanding of the human species.

Could there be a more urgent task for the 21st Century? It is a daunting challenge, to be sure, but the long-term transformations – for economics, politics and policy and culture -- could not be more needed.

NOTES

¹ Insert source for John Adams quote.

² Cosmides, L, Tooby, J., *Evolutionary Psychology: A Primer, Center of Evolutionary Psychology* (University of California, Santa Barbara, 2002).

³ John H. Clippinger, “Why Routing is Better Than Sharing,” November 2002 (work in progress, on file with author).

⁴ William Durham, *Co-Evolution: Genes: Culture and Human Diversity* (Stanford, CA: Stanford University Press, 1991).

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

⁶ Richard Dawkins, *The Selfish Gene*

⁷ One compelling bit of evidence that social exchange is a universal trait for all human societies is a study that compared the ability to detect deceit among the Shiwiar, a non-literate, isolated Amazonian tribe of hunter-horticulturalists, and Harvard undergraduates. If the ability to identify cheating were the product of culture or economic development, clear differences in competence would be discernible. But the study found that “cheater detection reasoning” has been found in every developed and developing country that has been studied. Sugiyama, Tooby & Cosmides, “Cross-Cultural Evidence of Cognitive Adaptations for Social Exchange Among the Shiwiar of Ecuadorian Amazonia,” *PNAS* #3529.

⁸ Insert Parma neurologists citation re mirror neurons in monkeys.

⁹ Insert George Lakoff citation for quote.

¹⁰ Antonio Damasio, *The Feeling of What Happens: Body and Emotions in the Making of Consciousness* (New York, NY: Harvest, 2000), p. ____.

¹¹ Damasio, p. ____.

¹² Sugiyama, Tooby & Cosmides, *PNAS* #3529.

¹³ A cross-cultural survey of fifteen societies by economist Samuel Bowles has shown that the celebrated *homo economicus* that neoclassical economists routinely invoke *does not exist* in any recognizable form. See “In Search of Homo economicus: Behavioral Experiments in 15 Simple Societies,” *American Economic Review*, 91, 2 (May, 2001) 73-78 with R. Boyd, C. Camerer, E. Fehr, H. Gintis, J Henrich, and R. McElreath. (Santa Fe Institute Working Paper).

¹⁴ Andy Clark, *Being There: Putting Brain, Body, and World Together Again* (Cambridge, Mass.: MIT Press, 1997), P. ____.

¹⁵ The fact that there are genetically encoded innate mechanisms that predispose or shape human thought and action should not come as a surprise. But this does not imply that there is strict determinism of human activity. If anything, the complexity sciences are especially respectful of the indeterminacy and indeed unpredictability of many of seemingly simple behaviors. Geneticists also recognize that genes are not

literal blueprints that strictly determine morphological development or growth over time. Hence the so-called nature/nurture dichotomy -- so often seized upon by the popular press -- is a false one engendering much heat and little light. See, e.g., Stephen Pinker, *The Blank Slate: The Modern Denial of Human Nature* (New York, NY: Viking, 2002).

¹⁶ See, e.g., Sendhil Mullainathan and Richard H. Thaler, "Behavior Economics," entry in *International Encyclopedia of the Social and Behavioral Sciences* (Elsevier Science, 2001).

¹⁷ Thomas Friedman, *The Lexus and the Olive Tree* (New York: _____), chapter ____.

¹⁸ David Johnson and Susan Crawford, private correspondence.

¹⁹ Ronald H. Coase, "The Nature of the Firm," *Economica* NS 4 (16), pp. 386-405.

²⁰ See Yochai Benkler, "Coase's Penguin, or Linux and the Nature of the Firm" (forthcoming), *Yale Law Journal*, 112 (Winter 2002-2003).

²¹ David Bollier, *The Rise of Netpolitique: How the Internet is Changing International Politics and Diplomacy* (Washington, D.C.: Aspen Institute, 2003).

²² The General Public License is a legal innovation of the Free Software Foundation, at <http://www.fsf.org>.

²³ For more on the Alaska Permanent Fund, see <http://www.apfc.org>.

²⁴ Peter Barnes, *Who Owns the Sky? Our Common Assets and the Future of Capitalism* (Washington, D.C.: Island Press, 2001).

²⁵ Paul Hawken, Amory Lovins and L. Hunter Lovins, *Natural Capitalism: Creating the Next Industrial Revolution* (Boston: Little, Brown, 1999).

²⁶ See, e.g., J.R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth Century* (W.W. Norton, 2000), and Tim Flannery, *The Eternal Frontier: An Ecological History of North America and Its Peoples* (Boston: Atlantic Monthly Press, 2001).

²⁷ Insert citation for corporate research into the anthropology of affective relationships.

²⁸ Insert Damasio citation for his quote.

About the Authors

John Henry Clippinger

Dr. Clippinger has been involved in a wide array of public policy and digital technology issues over the past thirty years. He participated in the founding of the National Telecommunications and Information Administration during the Carter Administration; built one of the first corporate intranets for knowledge management as Director of Intellectual Capital at Coopers and Lybrand; co-founded three technology companies; and was author-editor of *Biology of Business: Decoding the Natural Laws of Enterprise* (Jossey-Bass). Currently, Dr. Clippinger is Chairman of Parity Communications in Boston and a Senior Fellow at BUILDE – Boston University’s Institute on Leading a Dynamic Economy. He has held research positions at Harvard, Brandeis and the University of Pennsylvania, and is active with the Aspen Institute and The Santa Fe Institute. Dr. Clippinger can be reached at jhclippinger@mindspring.com.

David Bollier

David Bollier (www.bollier.org) is an independent strategist, journalist, and consultant specializing in progressive public policy and the impact of digital media on democratic culture. Bollier has been an advisor to television writer/producer Norman Lear on politics, public affairs and special projects since 1984, and is a Senior Fellow at the Norman Lear Center at the USC Annenberg Center for Communication. He is also co-

founder of Public Knowledge, a public-interest policy organization dedicated to defending the commons of science, culture and the Internet. Most recently, Bollier's work has focused on developing a new analysis and language for reclaiming "the commons," the subject of his recent book, *Silent Theft: The Private Plunder of Our Common Wealth* (Routledge; [ww.silenttheft.com](http://www.silenttheft.com)). Bollier can be reached at bollier@essential.org.