

Invisible Hands Commentary

by Maury Seldin

Introduction to Commentary

This commentary on invisible hands started off as a set of notes that might be adapted for a presentation to Books and Ideas at a 2016 session of ASPEC. The book that might be presented is titled ***Invisible Hands: Self-Organization and the Eighteenth Century***. It is a book published in 2015 that “... charts how eighteenth century Europeans learned to imagine an order that moved beyond both the mechanical worldview and traditional providence.” Its focus is on what is called ***self-organization*** in the context of what is known as ***emergence*** in the nascent discipline known as ***complexity science***.

It is coauthored by Jonathan Sheehan & Dror Wahrman, two historians approaching the topic from different perspectives, both with a deep “... shared passion for the question of order in the origins of modernity. [p. xiii]” One focuses on intellectual history; the other on cultural history. Their diversity, and ten years of collaborative effort, produced an outstanding scholarly work focused on the language of self-organization extant in the eighteenth century.

The book is of interest as a supplement to my treatise titled ***American Democracy: The Declaration, Pursuit, and Endangerment***. The opening essay that serves as the first chapter of the treatise is titled “The Declaration and the Other Invisible Hand.” In that essay, the position taken is that “The *other invisible hand* operates in the realm of evolution of **societal structure** as an organic entity producing a changing level of social capital as an emergent process.” [The emphasis on **societal structure** was added.]

The social capital concept as used by Frances Fukuyama in his 1999 book ***The Great Disruption: Human Nature and the Reconstitution of Human Order*** is defined as “a set of informal values or norms shared among members of a group that permits cooperation among them [p. 16].” Two pages earlier, he notes the following:

Indeed, social scientists have recently begun to refer to a stock of societies’ shared values as *social capital*. Like physical capital (land, buildings, machines) and human capital (the skills and knowledge we carry around in our heads), social capital produces wealth and is therefore of economic value to a national economy. It is also a prerequisite for all forms of group endeavor that take place in our society...”

That quotation is in a paragraph that followed a discussion of how both the Left and the Right wanted to “free the individual from restrictive rules.” For the Left it was a variety of traditional values; for the Right it was limitation on what they could do with their property. The paragraph from which the excerpt was taken started off as follows:

“As people soon discovered, there were serious problems with a culture of unbridled individualism, where the breaking of rules becomes, in a sense, the only remaining rule. The

first had to do with the fact that moral values and social rules are not simply arbitrary constraints on individual choice; rather, they are precondition for any type of cooperative enterprise.” [The second serious problem is noted in the box that follows.]

The second problem with a culture of intense individualism is that it ends up being bereft of community. A community is not formed every time a group of people happens to interact with each other; true communities are bound together by values, norms, and experiences shared among their members. [pps.14-15.]

The second excerpt (the one starting "As people soon discovered...") immediately preceded the first excerpt (the one starting "Indeed, social scientists...") in Fukuyama's book on page 14.

The point being made in the opening chapter of the treatise is that **social capital is the product of the other invisible hand**. The nature of the shared values, and their observance, affects what emerges over time in the evolution of the culture from the individuals' pursuits of self-interest.

The *invisible hand* referred to by Adam Smith, as used in his *Wealth of Nations*, was an emergent phenomenon, the process of which was not understood. What was seemingly understood was that the self-organization led (through an invisible hand) to a beneficial outcome for society. That was in the context of economic outcomes closely related in time to the self-organization process of pursuit of self-interest.

The book, ***Invisible Hands: Self-Organization and the Eighteenth Century***, details a variety of perspectives of self-organization purporting to explain how that invisible hand (emergent process) led to the outcomes. The perspectives ranged from *providence* in the sense of emanating from a divine source to a variety of mysterious sources inferred from usage of the phrase. The difficulty was that science at that time was mesmerized by linear relationships that could be explained by cause and effect, especially as indicated by inductive logic supported by an experimental methodology. The analytics of nonlinear systems for the social sciences seemingly had to wait for a couple more centuries.

Smith's use of the term in his ***Wealth of Nations*** was linked to the concept of self-organization in the context of his advocacy of free trade as opposed to *mercantilism*. The context is thus the benefits to society during a slice of time as compared to the meaning of my creation of the term **the other invisible hand** which refers to emergent process producing the benefits (positive or negative) to society over an evolutionary period resulting from the changes in social capital.

My obsession with the discussion of the Enlightenment is based on an attempt to grasp an understanding of the intellectual and societal developments of the era that shed light on the forces leading to the transition to modernity; and to gain an understanding on how that transition could shed light on what forces might lead to a New Age of Enlightenment.

That New Age of Enlightenment would be characterized by at least two developments. One is that social science discipline developments advance enough to bring analytics of nonlinear relationships up

to a par with the analytics of linear relationships. The other is that balance of self-interest and community interest as an element of social capital evolves to produce a character of social capital that facilitates less painful transitions in the dynamic balance processes of the American political-economy.

Progress in those developments and a broader understanding the process of evolution of the Enlightenment may help Americans restore their pursuit of the ideals which the Declaration of Independence espoused. The hope is to reverse America's current path to dystopia.

The ideals of the Declaration of Independence are discussed in the treatise to which this commentary is an appendix. That treatise contains extensive endnotes and appendices. This commentary, as one of those appendices, has evolved to provide a docent led tour of some literature in the Seldin Library. That tour is considerably shorter than that of a related major tour that is labeled ***Liberal Education Docent Tour***.

Invisible Hands and Some Other Books

The book, ***Invisible Hands: Self-Organization and the Eighteenth Century***, sheds considerable light on the self-organization component of the complex adaptive system operating in Europe at the height of the Enlightenment. The self-organization operates in networks, the nodes and connections from which interactions generate emergence. It is the process of emergence that produces characteristics not present at the self-organizational level. The mystery of how that happened could not be explained by the linear analytics prevailing at that time.

The first part of the book discusses the presence of the language of self-organization as a cultural resource. In the first chapter the scene is set "with new departures in the European understanding of God's place in the material and moral world, amounting to a profound reconceptualization of the functions of providence without which self-organization would have been unthinkable." [p. xv,]

The first chapter noted that the mechanical worldview of the era clashed with the idea of ***providence*** used in its traditional sense of divine origin. The roots of the clash go back to the work of Epicurus, a younger contemporary of Aristotle who had amazing insights into natural philosophy. His explanation of the natural world is built on the idea of atoms, but via evolution and not Creation; it had no reliance on the divine. Only fragments of his work remain, but **Lucretius**, an early Roman wrote an epic poem, ***On the Nature of Things***, that gives a remarkable explanation of nature built on the idea of atoms, but via evolution and not Creation.

There are a few books that serve as a fine resource for understanding the background. For a translation of the Lucretius work, ***On the Nature of Things***, I use the one by **John Selby Watson**. The original work was suppressed shortly after it received distribution and the Roman Empire turned to Christianity. It came to light more than a millennium later after a copy was discovered by **Poggio Bracciolini** in the library of a monastery. The discovery was in 1417. But, by the 17th century, the Scientific Revolution was, through the scientific method, enhancing the quality of knowledge of some of the speculations provided by **Lucretius**.

Shelved in my library next to *On the Nature of Things* are two books relating to the Lucretius book. One, the story of the discovery of a copy the book in a remote monastery, is Stephen Greenbelt's *The Swerve: How the World Became Modern*. The other is *Epicureanism at the Origins of Modernity*. It is by Catherine Wilson. Her claim for *On the Nature of Things* as being the source of modernity is at least as "...a useful framework for understanding and interpreting the history of early modern thought." The quote is from the preface. Wilson argues "for the contribution of Epicurean natural, moral, and political philosophy to early modern theory and practice...[taking]... materialism as the only valid frame of reference, not only for scientific inquiry but for the solution of the deepest problems of ethics and politics."

These books relate to the evolution of thought built around the idea of the linearity of thought using mechanical explanations, *mechanistic materialism*. They also relate to the power of ideas, especially as to the source of authority, particularly the shift from royalty and church to the rights of individuals. The most comprehensive explanation in the transition to modernity provided in the books in my library is in the trilogy by Jonathan I. Israel, (1) *Radical Enlightenment: Philosophy and the Making of Modernity 1650-1750*; (2) *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man, 1670–1752*; and (3) *Democratic Enlightenment: Philosophy, Revolution, and Human Rights 1750–1790*.

Returning to the quote on the resolution of "God's place in the material and moral world," the first chapter explains that the *cause and effect* could not explain the *something out of nothing*, (the *from chaos to order*) that was observed through the self-organization. Science of the time could not explain it. Nor was Calvin's view of providence generally accepted in the light of scientific advancements. A *third way* emerged. It contrasted with "the older pieties of Christianity, and beyond the cold world of Descartes [p.41] ... It was Providence, but not Calvin's providence but rather a description of "nature's dynamic process." [p.45.] This sounded to me a little like Spinoza's God and nature as one, but lacked the explanation of how it worked in nature.

It took until late in the 20th century for the nascent disciplines of *network science* and *complexity science* dealing with the phenomenon of emergence to come up with substantially better explanations. A good transition from *networks* to *emergence* is in Steven Johnson's *Emergence; The Connected Lives of Ants, Brains, Cities, and Software*. [2002] He explains that the systems discussed have the commonality of being bottom-up structures, not top-down systems. "They get their smarts from below. [p.15.]" That is the self-organization.

The explanation of how emergence works that I find most intelligible is by John H. Holland in his *Emergence: From Chaos to Order*. [1998] He uses checkers and neural nets to explain the process. A good example of the intelligibility is in the section on comparisons. [Pages 112-113.]

The second chapter of the *Invisible Hands* book moves into the discussion of a variety of stories about self-organization. They reflect the existence of emergence, the phenomenon arising out of self-organization that produces situations with characteristics not present in the individual agents that self-

organize. Agents in this sense represent the self rather than another (the *another* being one who is represented by actions of an agent in a fiduciary capacity).

The chapter opens with a discussion of Daniel Defoe's 1709 published history of the circumstances leading to the

"1707 union between England and Scotland. The union according to Defoe was hardly the outcome of mutual collaboration or deliberate planning. Rather, different interest groups on both sides of the border pulled each in its own way with 'vehemence,' some opposing the union, others trying to imbalance it so as to serve their own ends with no regard for the whole; until, counterintuitively, [they worked it out...]... that mystery, Defoe declared, 'is a secret History few understood.'" [p. 47.]

The discussion of Defoe's published works continued. The second work, published later in 1709, was about credit.

"Defoe's two expositions converged unexpectedly. In both, Defoe conjured the image of wheels within wheels for a complexity that defied straightforward relationships of cause and effect. In both he described situations in which unintended consequences, beneficial for the greater whole, emerged mysteriously from the unplanned, contradictory, self-propelled motions that were the in the nature of the constituent parts. [p. 50]."

The rest of the chapter was heavily devoted to the market, including probability and chance as a way of life. This all is in the context of "...social, cultural, and intellectual life, each of which brought complexity home for some [p.50]." The stories of particular interest in this first half of the book are those dealing with the emergence of markets.

The third chapter completes the first half of the book with a focus on "...the sudden eruption of experimentation with the language of self-organization in the 1720's in the wake of Europe-wide financial crisis." [Pages xv-xvi.]

That chapter is titled "Man-Made Apocalypse: The Public Emergence of Self-Organization." It discusses "...the first public appearance as a meaningful European cultural phenomenon: namely, the crisis of hyperactivity in financial speculations that took over much of Western Europe around the year 1720 [p. 94]." The discussion included "the 'never-to-be-forgot or forgiven' South Sea Bubble, the first-ever stock market crash, which took place in London in late summer 1720 [p. 94]." It was the background for a poem, but "...it was also the specific context of its particular verses devoted to self-organization [p. 97]."

The self-organization concept was imbedded in an earlier poem, Mandeville's *The Grumbling Hive; or Knaves Turn'd Honest*. That was "as early as 1705," but it was followed by his *Fable of the Bees* in 1714. [p. 98.] It was at a time "... in which Mandeville appears to have come to combine his famous moral vision with a model of society as a self-organizing system [p. 98]." It was a prelude to the "unusual constellation of events around 1720...[that]...provided an opportunity and generated a pressing motive

for disparate individuals in disparate places to weave together self-organizing narratives, drawing on those conceptual tools and cultural recourses already in place [p. 99].”

The authors of *Invisible Hands* identified a persistent concern with **causality** in the unfolding of the events that appeared out of self-organization. It was the “madness of the multitude” that appeared to be perplexing. [p. 100.] **A poem by Jonathan Swift** is quoted on page 101 that sheds light on a view of causality. The discussion on the next page includes the following:

“However, the real power to shape the outcome is not in their hands [the bankers] but rather in those of the multitudes, whose destructive title wave is unleashed like ‘capricious Pranks,’ randomly and unpredictably, ‘whene’er they please.’ The main force here is not greed, with which bankers encroaching on speculators are amply endowed; it is the unfettered agency of the multitudes, their unpredictable capriciousness, irregular whimsy, and giddy fluctuations, resulting in randomness and chaos.”

The disorder turning to order was apparent, but explanations ranged from conspiracy to divine intervention. However, the following quote gives an overview;

“What all these reactions had in common, and what they all together reveal about the pressures of this particular historical moment, was the pressing impulse to grasp, deny, or rein in the most unsettling aspects of the 1720 financial crisis: the unpredictable multitudes, the man made disorder, the vulnerability of events of chance, the exposed limitations of linear causality [p.118.]”

There is more to the chapter, but only in the closing sentence on page 129 (quoting from *A True State of Publick Credit: er, A Short View of the Condition of the Nation, with Respect to Our Present Calamities*)
did I see a reference to what complexity science at the brink of the 21st century reached a turning point on harnessing complexity. The quote from the publication in 1721 is as follows:

And again: credit ‘must be left to itself,’ and if it is, within a generally beneficial environment, it ‘will disperse itself, and find out just as many Channels as will be useful.’ ‘If the Legislature will but lay the Foundation Stone, the **Superstructure** will not want any other Assistance in raising. [Emphasis added.]

The key word is structure as in the emphasis added to Superstructure. The only other reference to structure that I noticed in the several hundred pages of text is on pages 284-285. The quotations, as a series of excerpts from chapter 7, The Politics of Self-Organization, are as follows (with one comment I added in brackets):

Madison’s main argument in *Federalist 10* turned faction into virtue, and indeed into the very foundation upon which the American republic could be stabilized. The key to this alchemical transformation according to Madison was *scale*, in which inheres to the advantage of a republic over a smaller democracy. The greater the number of divisions and interests pulling and pushing in different directions, the less likely they are to combine and align in a single line of action to the detriment of others... [The key characteristic is diversity. The order arises out of the interaction of diverse interests.]

When Madison reformulated the argument again in *Federalist 51*, the self-organizing logic of this model was clearer to him and to us... 'People's well meaning intensions cannot be relied upon, so the key to the public good must be in the **structural characteristics** of the system, establishing order from the disorderly and contradictory impulses of without the active design of an overseeing legislator Order emerges in the aggregate...' "[Emphasis added.]

An additional comment, or two, is that on the next page the authors make reference to a counter position that "... social divisions like those celebrated in the *Federalist* must be orchestrated from above for harmony to emerge ..." They were made by a Frenchmen in a 1793 publication. That was the year before Edward O. Wilson in his book *Consilience* marks the end of the Enlightenment. That end, according to Wilson was March 29, 1794, but it could have been averted or at least postponed had Rousseau spoken of general reason rather than general will. The imposition of "the general will" had left no room for reasonable differences.

Additionally, I would note positions of two other authors:

1. **Alex de Tocqueville**, who a little more than a half-century after the American Revolution, and in the wake of the French Revolution of 1830, took a trip to America looking to identify some principles from the American experience in order to improve the system prevailing in France. His two volume work, *Democracy in America*, shed a great deal of light. His great fear was that there would be a *tyranny of the majority*.
2. **Joseph J. Ellis**, in his 2015 book, *The Quartet: Orchestrating the Second American Revolution, 1783-1789*, wrote "My argument is that four men made the transition from confederation to nation happen. They are George Washington, Alexander Hamilton, John Jay, and James Madison [p. xv]." They went for scale and diversity; and it took leadership to facilitate the evolution of the structure.

The 1999 book that put complexity science at the brink of the 21st century reaching a turning point on harnessing complexity is a book by **Robert Axelrod and Michael D. Cohen**. Its title is *Harnessing Complexity: Organizational Implications of a Scientific Frontier*. The key quote is a definition:

"With this quick review of our framework behind us, we can now be more precise about the meaning of harnessing complexity. The phrase means deliberately changing the structure of a system in order to increase some measure of performance [p. 9]."

Discipline Development and Contemporary Shortfalls

There is a lot more in the *Invisible Hands* book, but the basic analytical problem is the limitations of linear analyses as in traditional economics. A nascent branch of economics called *complexity economics* has five distinguishing ideas presented in a book by **Eric D. Beinhocker**, *The Origin of Wealth: Evolution, Complexity and the Radical Remaking of Economics*. Here is an adaptation of an excerpt from his book that was used in a paradigm shift article:

The Five Distinguishing Ideas of Complexity Economics

	Traditional Economics	Complexity Economics
Dynamics	Static, linear, profit-maximizing equilibrium	Open, dynamic, non-linear, far from equilibrium
Agents	Modeled collectively – perfect information, no errors or biases, no learning or adaptation	Modeled individually – agents subject to errors and biases; they adapt and learn over time
Networks	Agents act indirectly through the market	Model interaction of agent; networks of relationships change over time
Emergence	Micro- and macroeconomics remain separate disciplines	No distinction between micro- and macroeconomics; macro patterns are emergent result of micro-level behaviors and interactions
Evolution	No mechanism for endogenously creating novelty, or growth in order and complexity	Evolutionary process of differentiation, selection, and amplification provides system with novelty and is responsible for its growth in order and complexity

Adapted from Beinhocker and presented in an article co-authored By David Wyman, Maury Seldin, Elaine Worzala, *A New Paradigm for Real Estate Valuation? It was published in the Journal of Property Investment and Finance.*

What may by now have become the classic case is the shortfall in the application of linear analytics to the complexity of financial markets is the Long-Term Capital Management debacle. It was a hedge fund whose leadership included two of our nation’s most brilliant and respected economists. Apparently, they misunderstood how systems in motion operate. Indeed, they were well schooled in standard economic theory, but that theory is deficient, and debacles ensued.

The following is an excerpt from my communication to my fellow board members at the Homer Hoyt Institute and the leadership of the Subprime Research Council the Institute founded after the occurrence of the subprime crisis debacle:

“The Long-Term Capital Management principals included two Nobel Prize winners, **Myron Scholes and Robert C. Merton**, whose sophisticated mathematical models did not account for shifts in the system. That is a problem with econometric models that are built upon historical relationships.

“The subprime mortgage crisis, at the end of the decade that started with the Long-Term Capital Management debacle, was marked by the testimony of the former chairman of the Federal Reserve Board of Governors, Alan Greenspan, in which he admitted 'I did not forecast a significant decline because we never had a significant decline in prices.' He was referring to housing prices; but, that was only part of the testimony that related to the difficulty in forecasting.

“The point here is that the standard economic theory tends to view the economy as a mechanistic system that fails to include the analogous findings of Albert Einstein in his general theory of relativity. Another way to avoid the problem of forecasting outcomes solely on the basis of past relationships is to consider the system as an organic system rather than a mechanical one.

Furthermore, when understanding is insufficient for forecasting outcomes at acceptable levels of risk then strategy may be used to deal with the uncertainty.

More on the testimony before Congress by Chairman Greenspan is in an essay published in a supplement to a newsletter in 2009, [Supplement – “The Housing Problem and the Economic Crisis:..”](#) [“The Great Recession: Vision Problems of the Experts”](#)

Additionally, from my review of [Greenspan's book, *The Age of Turbulence: Adventures in a New World*](#), for Books and Ideas at ASPEC, here are a few additional comments. His first chapter sets the stage for our understanding that Greenspan clearly saw that observation and logic were essential elements for his models, but there was an insufficiency in the models because of the dynamics of the system. Later in the book he notes the merits of the idea of using different models for different stages of the system. However, in his Epilogue he noted that he used add-factors to try to make appropriate adjustments to his econometric models. Apparently, the econometric models relying on linear structures were inadequate for complex adaptive systems.

[Greenspan](#) and the two Nobel Prize winners mentioned in the discussion of the Long-Term Capital Management debacle are outstanding econometricians, but they are mainstream economists. The transition to complexity economics has begun.

Some of my work with the Homer Hoyt Institute in dealing with the subprime crisis and its aftermath has been alluded to. The series of newsletter supplements on the web, [Newsletters 2007 – Present](#), contains substantially more information on the quest for discipline development. My most recent coauthored publication is titled [“Hidden complexity in housing markets: a case for alternative models and techniques.”](#) The link has an excerpt from that [paper published in the *International Journal of Housing Markets and Analysis*, Volume: 6 Issue: 4, 2013.](#)

In summary as to discipline development and shortfalls here are two key points. One is that [Kuhn had it right when he wrote that the paradigm shift process had to do with expensive retooling.](#) And the second is that the team organization in blending disciplines in order to better understand on how to get a man on the moon applies to the current issue of restoring American democracy on its path to its ideals.

There is one more critical idea that needs to be discussed in this commentary. That idea has to deal with the role of morality in the context of pursuit of self-interest and societal structure to enhance the outcomes from *the other invisible hand*.

Ideals, Morality, and Ethics

[Adam Smith's](#) first published presentation of his idea of the pursuit of self-interest leading to the common good via an *invisible hand* was in his 1759 book, [The Theory of Moral Sentiments](#). The use of the metaphor by Smith in *The Theory of Moral Sentiments* appears as follows:

"They are led by an invisible hand to make nearly the same distribution of the necessaries of life which would have been made had the earth been divided into equal portions among all its

inhabitants; and thus, without intending it, without knowing it, advance the interest of society, and afford means to the multiplication of the species. [Page 182.]

What was Adam Smith thinking when he wrote *The Theory of Moral Sentiments*? It is not possible to know, but some clues are as follows: (1) He was a philosopher recruited in 1751 to fill-in for Professor Craige, a Professor of Moral Philosophy at University of Glasgow; (2) His focus was on motives; and he differed with his mentor, Hutcheson, on the role of motives; and (3) as a moral philosopher he was espousing pursuit of an enlightened self-interest by individuals as beneficial to society as whole.

The phrase invisible hand obviously became well known through his second book, *An Inquiry into the Nature and Causes of the Wealth of Nations*, first published in 1776 and successively revised until 1784. The use of the metaphor by Smith in *The Wealth of Nations* appears as follows with my emphasis added:

"But the annual revenue of every society is always precisely equal to the exchangeable value of the whole annual produce of its industry, or rather is precisely the same thing with exchangeable value. As every individual, therefore, endeavors as much as he can both to employ his capital in support of domestic industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of the society as great as he can. **He generally neither intends to promote the public interest, nor knows how much he is promoting it.** By preferring the support of domestic to that of foreign industry, **he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.** Nor is it always the worse for society that it was no part of his intention. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good. It is an affectation, indeed, not very common among merchants, and very few words need to be employed in dissuading them from it." [It is contained in Book IV, "Of Systems of Political Economy," Chapter II, "Of Restraints upon the Importation from Foreign Countries of such Goods as can be produced at Home." See pages 484-85 of the Modern Library Edition.]

What was Adam Smith thinking when he wrote *Wealth of Nations*? Although it is not possible to know, consider the focus in light of the metaphor. The metaphor was introduced in the discussion of foreign trade. He was a staunch opponent of mercantilism. In order to explain the benefits of free trade he needed to place the discussion in the broader context, the wealth of nations. In so doing, he spent better than a decade in developing his perspective of a political-economy. That perspective became a foundational component of economics as a discipline.

The pursuit of self-interest and the emergent phenomenon of the invisible hand producing societal good is often misunderstood. Consider the classic case of the London's *tragedy of the commons* of medieval times in which everyone was free to graze on common land. The result was overgrazing so that the land was no longer suitable for grazing. No individual had an incentive to cut back on grazing their herd and there was

no agreement at the time restraining the grazing. It took some structural changes for pursuit of self-interest to produce the common good.

Pursuit of self-interest does not mean the absence of morality. On the contrary, morality is an essential ingredient in the pursuit of self-interest. The pursuit of self-interest in acquiring the necessities of life requires a societal structure in order to get the scale and diversity of activities that would be more productive than living as a loner without other human contact. The benefits of the societal structure for a given individual depends on the society's productivity and the reciprocity to the individual in that structure. It is further impacted by the observation of the societal rules, be they as enacted in law or enforced by social pressure.

Morality is a shared value in a culture that impacts its social capital in that culture's portion of the production of the society of which it is a part. The morality may vary within the culture and certainly the ethical conduct of individuals may vary. **But it is shortsighted to try to understand the morality as an element of self-interest in the same way that the understanding of self-organization was sought to be understood using only the logic of linearity when dealing with organic systems that requires the logic of nonlinear analytics.**

Consider the case of the human mind operating to produce the consciousness when **"a self process is added onto a basic mind process."** That is a quote taken from **page 8 of Antonio Damasio's *Self Comes to Mind: Constructing the Conscious Brain*** and a **summary of that book by Jack Lillibridge**. Much of what follows on consciousness is from one or both of those sources.

The theme being developed here draws on those sources; but is being applied to developing an understanding of ***the other invisible hand*** as **producing a changing level of social capital** as an emergent process. The basic proposition is that **consciousness impacts management in societies as an emergent property from the interactions of the results of consciousness in the individuals in the society.**

Drawing on **Damasio's** exposition, the human organism blends primordial feelings with the self that emerges from biographical knowledge and from an evolution of human capability through enhanced acquisition and integration of knowledge. Damasio discusses that once the "...self comes to mind, the game of life changes...[p.304]." He continues noting the following:

"The emergence of human consciousness is associated with evolutionary developments in brain, behavior, and mind that ultimately lead to the creation of culture, a radical novelty in the sweep of history [p.304]."

My reading of **Edward O. Wilson's book *The Meaning of Human Existence*** indicates that civilization as we know it is at a youthful stage of its evolution as a civilization. **Returning to Damasio's book**, he notes a series of momentous historical events affecting human capability associated with the development of independent and rebellious human minds. He is discussing the evolution of human behavior that would "... reduce suffering, minimize loss, and increase the probability of happiness and fancy. That is when the rebel began to take human existence in new directions, some defiant, some

accommodating, but all based on thinking through knowledge, mythical knowledge at first, scientific knowledge later, but knowledge nonetheless [p.305]."

The biological revolution produced culture, and knowledge enhanced the quality of life. There was a great transition in the era that included the Scientific Revolution and the Enlightenment. The question now is how to go to the next stage, presumably with a better understanding of the nascent disciplines that shed light on the self-organization in Europe in the 18th century. Also, with a better understanding of development of social capital by enhancing the balance between individual self-interest and community interest as a way to get American Democracy back on its path towards the ideas espoused in the Declaration of Independence.