Metaphors for the evolution of the American economy: progressing from the invisible and visible hands to the humanistic hand

John F. Tomer [Manhattan College, Riverdale, NY]

Abstract
The first part of this paper considers how three important metaphors can help us understand the past progress of the American economy. First is Adam Smith's "invisible hand" metaphor that helps explain how the market economy functioned in the mid to late 18th century. Second is Alfred Chandler's "visible hand" metaphor that explains about the relatively decreased importance of markets and the increased importance of managerial decision making in the allocation of economic resources during the late 19th century and the first half of the 20th century. Third is Richard Langlois' "vanishing hand" metaphor that he used to characterize the significant changes occurring in the American economy's functioning from the late 20th to the early 21st century. Taken together these three metaphors help explain how the American economy's predominant functioning has changed as the economy has transitioned from one stage to another.

The second part of this paper proposes that the next economic stage will be associated with a metaphor called the "humanistic hand". Whereas the American economy's overall economic and technological performance has been relatively high, its human performance has generally not been favorable, especially in recent decades. That assessment refers to the economy's high human costs related to chronic ailments and other ways that Americans have been casualties of the socio-economy's dysfunction. The essential nature of the humanistic hand stage is its orientation to remedying the adverse human consequences of the socio-economic dysfunctions of modern capitalism.

To explain how a humanistic hand stage might function and come into existence, this paper has drawn on the research of Elinor Ostrom and David Wilson. Ostrom understood that the economy's productive groups can become dysfunctional when a group's participants are overly self-interested, and therefore, seek to gain at the expense of others. Such a result ultimately may cause the group to cease functioning and to fail. Ostrom and Wilson recognized that what is needed are functional organizations in which group participants communicate, trust each other, and become committed to common purposes. The humanistic hand economy is one in which the predominant economic organizations are functional organizations. There is strong reason to believe that in these functional organizations, the human costs associated with economic activity will be dramatically lower than what occurs in the typical enterprises of American style modern capitalism. Lastly, Wilson has explained how the functional organization of the humanistic hand stage might come about through a process of cultural evolution.

Introduction

The purpose of this paper is to consider how a selection of significant metaphors relating to the economy can help us understand the past progress of the American economy as well as a scenario for future progress. Carefully considering these metaphors can also help us explore important socio-economic issues and help economic policymakers make decisions. Consider three very important metaphors. First, in his *Wealth of Nations* book, Adam Smith (1776) used the metaphor of the "invisible hand" to explain his view of the functioning of the market economy in the mid to late 18th century. Second, in explaining how the American economy of the late 19th century and at least the first half of the 20th century functioned quite differently from the predominantly market economies of earlier times, Alfred Chandler (1977) used the metaphor of the "visible hand" to emphasize the relatively decreased importance of markets and the increased importance of human (or managerial) decision making in the allocation of resources. Third, Richard Langlois (2003) used the metaphor of the "vanishing hand" to characterize the significant changes occurring in the American economy's functioning in the late 20th century and early 21st century. These three metaphors relating to different economic stages have helped economists and other observers of the American economy appreciate many important aspects of the economy and how its predominant functioning has changed as the economy has transitioned from one stage to another over the years.

While it is impossible to predict the future, much less the character of future economic stages, this paper proposes an economic stage that could conceivably be the next stage. This stage is called the "humanistic hand". Whereas the American economy's overall economic and technological performance has been relatively high, the American economy's human performance has generally not been good. That assessment refers to the economy's high human costs related to chronic ailments and the other ways that Americans have been casualties of the socio-economy's dysfunction. The essence of the proposed humanistic hand stage is that to a great extent it would be oriented to remedying the adverse human consequences of the socio-economic dysfunctions of modern capitalism. This stage would be thus focused on raising the level of human well-being in the American society, a level that has generally suffered in recent decades despite the economy's rising productivity and income.

There is reason to believe that a humanistic hand economic stage could come into existence through a process of cultural evolution (Wilson, 2015). Further, based on the work of Elinor Ostrom (2009) and her colleagues on the functioning of common pool resources (CPRs), there is further reason to believe that contrary to conventional economic wisdom, destructive overuse of the resources involved can be avoided. What Ostrom learned is that users of the common resources can learn to cooperate and commit themselves to shared purposes, creating functional organizations in the process. In essence, based on the findings of Ostrom, Wilson, and others, the core principles related to successfully organizing and managing CPRs can be generalized to other contexts, thereby allowing successful large scale operation of many kinds of institutions without a tendency for the kind of dysfunction and market failure that has led to many of the societal human costs plaguing modern capitalist economies.

Economic stages, metaphors and progress

It seems fair to say that a nation's economy (or socio-economy) is always changing and evolving. Obviously some of these changes are more important than others, and some are more associated with progress than others. As indicated in the previous section, through the writings of leading authors, it is possible to identify important stages in a country's economic development and associate them with a metaphor. These metaphors along with short pertinent analyses may enable us to obtain a reasonable understanding of how important aspects of a nation's economy were developing and functioning during a particular stage as well as getting an idea about the importance of that economic stage with respect to its contribution to progress, i.e., adding to the well-being of the country's inhabitants during that stage. Although these metaphors/analyses are lacking in some ways, they nevertheless can be useful in shedding light on questions such as the following: To what extent did what was happening during that stage represent economic and social progress? How did the functioning in that economic stage lead to the succeeding stage(s)? How does this particular stage fit into the long arc of economic history? To what extent does the advent of the next economic stage displace the immediately preceding stage? In any case, it seems that much insight into a country's socio-economic path can be obtained via this kind of inquiry even though the analysis here may be considered lacking from the standpoint of a complete historical analysis. Further, this mode of inquiry can presumably be helpful to a country's policymakers insofar as they need to take appropriate actions to guide the economy, thereby fostering progressive trends and retarding retrogressive ones in an emerging economic stage.

According to Donald McCloskey (1985), metaphors are very important to economic explanation and advocacy. Metaphors are the language that economists use: they are not mere ornaments (pp. 74-76). They have much to do with determining our economic and philosophical convictions. According to the philosopher Max Black, "a memorable metaphor has the power to bring two separate domains into cognitive and emotional relation by using language directly appropriate to the one as a lens for seeing the other" (as quoted by McCloskey (1985, p. 76). Metaphors are a "distinctive mode of achieving insight"; they have a "capacity to astonish us with implications once unseen" (p. 77). Moreover, "what is successful in economic metaphor is what is successful in poetry" (p. 78).

The invisible hand metaphor

The original version of the invisible hand metaphor can be found in Adam Smith's *The Wealth of Nations* first published in 1776. According to Smith (1937, pp. 422-423), although

> "every individual who employs capital necessarily labors 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 …. He intends only his own gain; … he is [in effect] … led by an invisible hand to produce an end which was not part of his intention …. [Thus] by pursuing his own interest, he frequently promotes that of the society more effectually than when he really intends to promote it."

Accordingly, voluntary, self-interested trading by business people in a free market is believed to produce unintentional and widespread economic benefits for the society. And that free trade creates signals about the value of and costs of the exchanged goods that spontaneously directs competing consumers and producers to fulfill the needs and desires of others. These market signals are understood to contribute strongly to the efficient functioning of markets. Thus, when changes in the demand for goods occur, this automatically results in price and profit adjustments that lead to beneficial, equilibrating changes in supply.

The invisible hand metaphor was used by Adam Smith, and many others over the years, to support the view that free trade motivated by the self-interests of producers and consumers creates a self-regulating system that functions better than when governments regulate the economy. The advocates of free, unregulated trade are said to support laissez faire (French for "leave it alone") policies. In time the invisible hand idea became one of the primary justifications for free market forms of the capitalist system. Further, it is important to note that the invisible hand metaphor has represented what is understood to be the essential nature of how early market oriented capitalist economies have functioned in America (not to mention a number of European economies) in the 18^{th} century and a good part of the 19^{th} century. The invisible hand metaphor is henceforth used in this paper to represent the early market-oriented stage of capitalism. The metaphor is meant to evoke various aspects of not only how the early market economy functioned but how people in these economies thought about and experienced their economies.

It should be noted that the use of the invisible hand metaphor by Adam Smith represents in part how he understood markets to function, in part how he thought it should be functioning. In the latter sense, the invisible hand was an ideal. He emphasized how markets could function well with little or no government regulation and could contribute to business specialization, greater productivity, and economic growth. In other parts of his *Wealth of Nations* book, he was critical of some aspects of the market economy. However, insofar as Smith used the invisible hand metaphor, he can be faulted for insufficiently explaining about the flaws of markets, i.e., about the extent to which markets can be dysfunctional.

The visible hand metaphor

The next important economic stage takes its name from the title of Alfred Chandler's (1977) book entitled *The Visible* Hand. It is a metaphor that obviously contrasts sharply with the invisible hand metaphor. Note that this stage has also been called managerial capitalism. According to Chandler (p. 1), in mid19th century America, the "modern business enterprise took the place of market mechanisms in coordinating the activities of the economy and allocating its resources." It was the visible hand of management that "took over the functions of coordinating the flows of goods through… processes of production and distribution and of allocating funds and personnel for future production and distribution)" (p. 1). Accordingly, "modern business enterprise… became the most powerful institution in the American economy and its managers the most influential group of economic decision makers" (p. 1).

According to Chandler (1977, pp. 1-3), by the late 19th century, the large modern business enterprise typically had a fair number of business units or divisions handling its different lines of goods and services. In other words, corporations had become not only large but multidivisional enterprises. Among the important large-scale business enterprises that Chandler studied were E. I. DuPont; Standard Oil of New Jersey; General Motors; and Sears, Roebuck and Company. The activities of these companies' divisions and the transactions between them were coordinated by a hierarchy of middle and top salaried managers, not by market mechanisms. This was in contrast to the early (or traditional) American business firm that was a single unit enterprise that handled a single product and which performed a single economic function. "As late as 1840 there were no middle managers in the United States – that is, there were no managers who supervised the work of other managers and in turn reported to senior executives who themselves were salaried managers" (p. 3). Before 1840, all top managers were owners. "By World War I this [multidivisional] type of firm had become the dominant business institution in many sectors of the economy" (p. 3). "What the new enterprises did do was to take over from the market the coordination and integration of the flow of goods and services from the production of the raw materials through the several processes of production to the sale to the ultimate consumer" (p. 11).

> "The visible hand of management replaced the invisible hand of market forces where and when new technology and expanded markets permitted a historically unprecedented high volume and speed of materials through the processes of production and distribution. Modern business enterprise was thus the institutional response to the rapid pace of technological innovation

and increasing consumer demand in the United States during the second half of the nineteenth century" (p. 12).

They were the critical engines of economic growth in the U.S. (McCraw, 2008, p. 215) not only because their operations were generally more productive than market oriented small firms but because they enabled economies of scale (Usselman, 2006, p. 596). They also contributed to growth because they were the core around which medium and small supplier firms grew (Wikipedia, p. 2).

It should be noted that the success of large multidivisional firms required the creation of a managerial class that was needed to coordinate the increasingly complex and interdependent system. The growth in the size of the managerial class by the middle of the 20th century was extraordinary. By then, "these [large] enterprises employed… thousands of middle and top managers who supervised the work of dozens and often hundreds of operating units employing tens and often hundreds of thousands or workers" (Chandler, 1977, p. 3).

"Whereas the activities of single-unit traditional enterprises were monitored and coordinated by market mechanisms, the producing and distributing units within a modern business enterprise are monitored and coordinated by middle managers. Top managers, in addition to evaluating and coordinating the work of middle managers, took the place of the market in allocating resources for future production and distribution. In order to carry out these functions, the managers had to invent new practices and procedures which in time became standard operating methods in managing American production and distribution" (p. 7).

As time went on, these managers typically pursued careers that became increasingly technical and professional (p. 8). Because of the specialized skills needed, their selection and promotion required consideration of their training, experience, and performance. No longer were family relationships and money the key factors (pp. 8-9). Managers increasingly aspired to lifelong careers involving "climbing up the hierarchical ladder" (p. 9). Along with these changes in the nature of management came the increasing separation of management from ownership.

The vanishing hand

In the view of Richard Langlois (2003), the economic stage of capitalism that Chandler had labeled the visible hand had to a considerable extent run its course by the mid20th century. In Langlois' view, the vertical integration characteristic of the large multidivisional corporations began to be replaced by enterprises that favored vertical disintegration or at least less vertical integration. According to Langlois, the large multidivisional enterprises "are an increasingly small part of the landscape that [now] features a wide variety of market and network [organizational] forms (p. 353). Langlois uses the metaphor of a vanishing hand to refer to this relatively recent stage of industrial capitalism. The change from visible hand to the vanishing hand stage, as Langlois admits, is not as dramatic as the change from invisible to visible hand (pp. 352-353).

In the vanishing hand economic stage, innovative technological change has often involved simplifying and reducing scale. This has been true in the electricity generation field where new technology resulted in reducing the minimum efficient scale of new electric capacity (p. 370). A similar pattern occurred with the rise of semiconductor technology in telephony (p.

371). In these and related businesses, new profit opportunities “could be seized only by breaking down or ‘unbundling’ the vertical structure of the managerial corporation” especially in regulated utilities (p. 371).

A particularly interesting development during the 1960s involved corporations that used their management skills to diversify excessively such as ITT did. These corporations became conglomerates as they assembled new divisions by purchasing firms or divisions of other firms that were unrelated to their existing businesses. This pattern was aided by innovations in the securities markets that made it easier to do leveraged buyouts (pp. 371-372). Because of the generally poor performance of the conglomerates, these acquisitions eventually contributed to deconglomeration as the acquired divisions were sold off. Such activities were in effect a return to corporate specialization, the strategic catchword of the 1990s (p. 372). Companies were advised to return to their “core competences” (p. 372). Vertical disintegration and specialization became “perhaps the most significant organizational development of the 1990s” (p. 373). Companies were “finding it profitable to outsource increasing amounts of the production process” both domestically and abroad (p. 373). This was especially true of pharmaceuticals who often outsourced manufacturing, marketing, and clinical trials. In semiconductor manufacturing, firms were retaining their design, development, and marketing functions but did not own their manufacturing plants (p. 373). US auto manufacturers modularized their product design and supply chain strategies and relied heavily on subcontractors (374). These subcontractors were specialists in a sense but generalists in other ways; they had general purpose technologies or capabilities. This kind of decentralization made sense when the companies could avoid the high costs of coordination (p. 374). Various other developments such as visible design rules contributed to this type of specialization. Dell computer company is notable for “selling PCs to order by assembling them like Lego from a set of standardized components” often produced by other firms (p. 375). Further, these developments benefited from the evolving “external capabilities of the entire economy” (p. 375). One interesting example of the competitive pattern of the time period involved the steps in the home mortgage lending process, originating, underwriting, holding, and servicing the loan; these steps were typically being undertaken by different organizations (p. 376).

There are many factors that have led businesses in the late 20th century and early 21st century to increasingly use markets to obtain needed inputs rather than obtaining these from internal organizational units. One of these factors is the growth of coordinating technologies such as personal computers and broadband communication networks that can lower the cost of coordination across markets relative to internal sourcing. In Langlois’ (2003, p. 377) view, it was “not just by changes in coordination technology but also by changes in the extent of markets – increasing population and income but also by the globalization of markets.” The latter no doubt was related to the “reduction of political barriers around the world” (p. 377). In the late 19th century, the growth of internal sourcing from internal units of the large multidivisional corporations led to greater division of labor leading to higher productivity. In contrast to this, in the mid to late 20th century, productive changes in the division of labor were advanced to a greater degree by enterprises that took advantage of increasingly efficient suppliers around the world (pp. 378-379).

The noneconomic motivations of decision makers

The previous three sections of the paper have characterized three important stages of American economic development, the invisible hand, the visible hand, and the vanishing hand stages. These characterizations have focused to a great degree on the evolution of important structural aspects of the economy such as the main features of markets, organizations, and management. Little has been said about the motivations of the important economic decision makers. Given the capitalist nature of the economy, one can confidently assume that the owners of capital (and other resources) have been motivated largely by the prospect of profits. This is true both for the owners of small market-oriented firms as well as the stockholders of large organizations which are directed by multilevel managerial hierarchies. The importance of the profit motive and how it functions would presumably depend on circumstances such as the role of the company's founder(s), the firm's need for external equity financing, and whether the firm was a subcontractor or a large corporation with a dominant market position.

This is not to say, however, that individual owners and stockholders have not had other important decision-making motivations. There are many notable, interesting cases in which owners have been strongly motivated by noneconomic considerations, albeit these seem to be the exception rather than the rule. Let's consider three interesting cases from the 1980s and 1990s in which the owners' noneconomic motivations and behavior have been documented in book form. The three books are: Tom Chappell's *The Soul of a Business* (1993), Anita Roddick's *Body and Soul* (1991), and Fred Lager's *Ben and Jerry's: The Inside Scoop* (1994).

The first book concerns the story of Tom Chappell (1993) who was the founder and president of Tom's of Maine, a company that has produced a variety of toothpastes made wholly from natural ingredients. A number of years after founding the company, Chappell found that his "everyday business life had gone stale; his work had become an unfulfilling exercise" (p. xi). In his search for meaning, he decided to enroll in divinity school in order "to get back in touch with his original sense of purpose… and commitment to creating good products" (p. xi). He wound up finding "answers in the writings of the great philosophers" (p. xii). He discovered that he "could actually find a way to manage for profit and for the common good" (p. xii). He was able not only to rediscover his business vision, but to connect to his core values and spirit. He learned from studying religions that he needed to balance the spiritual and the practical and that his leadership required both his head and heart (p. xiv). The result was that he was able to lead his company in a way that brought to bear his beliefs and values. He developed a business strategy and mission that drew on his deep ethical principles and soul (pp. xiv-xv).

Anita Roddick (1991) opened the first Body Shop store in 1976. The Body Shop is in the cosmetics business, also known as the beauty business. Roddick had a personal vision and passionate belief that her business could be fun if it were conducted with love, and that it could be a powerful force for good (p. 7). She understood that the beauty business has typically taken advantage of women, selling them "totally frivolous and worthless products … [and] failing to take into account [their] real needs" (p. 9). She understood that it is "immoral constantly to make women feel dissatisfied with their bodies… by making miracle claims for a [beauty] product" (p. 15). She was determined that her business would be guided by feminine principles as well as by qualities like love, care, and intuition (p. 17). Anita's company aspired to ennoble the spirit "by creating a sense of holism, of spiritual development, of feeling connected to the workplace, the environment, and relationships" (p. 22). Commercial considerations were secondary for her. She aspired to have a business with a human face and a social conscience (p. 24). There is no doubt that The Body Shop has been a socially responsible company. Moreover, she wanted her company to be part of an enlightened capitalism (p. 27). A key to Body Shop's success was "balancing profit with principles" (p. 154). In line with this, an important part of Body Shop's operation was supporting community projects.

Ben and Jerry's ice cream company was started by Ben Cohen and Jerry Greenfield in Burlington, Vermont in 1978. In some ways, Ben and Jerry's business culture is similar to that of the Body Shop. Its style has been to bring some of the counter culture values of the 1960s to the business world (Lager 1994, p. xi). The company's unofficial motto was "If it's not fun, why do it?" Ben and Jerry

> "strongly believed that [their] business should give something back to the community that supports it. They started by giving away free ice cream and sponsoring local festivals, but as the company grew, their efforts became more ambitious, and Ben and Jerry's was soon recognized as one of the most progressive, socially active corporations in America" (p. 243).

Their mission statement clearly articulated their values. In Ben and Jerry's view, operating the company responsibly and joyfully was more important for them than making a profit.[1]

The transition from one economic stage to another

It is important to consider what happens when an economy makes a transition from one economic stage to the next. When the economy changes from one stage to another, the functioning of previous stage(s) do not disappear. The manifestations of previous stages just become less prominent and dominant. With the advent of the visible hand stage, coordination of the economy by markets (the invisible hand stage) did not cease to exist. What happened is that much more of economic coordination activity became taken over by large managerial enterprises. With the advent of the vanishing hand stage, large multi-divisional corporations did not disappear. They did, however, gradually become less dominant and prevalent. More of American economic activity was then taking place in more specialized companies, often ones that were supplied by a great variety of subcontractors rather than relying on supply from organizational units located within the vertically integrated enterprise.

What's next? An economy with a humanistic hand

Based on the preceding discussion of important economic stages in the history of American capitalism, it makes sense to inquire about the nature of the next economic stage. One could

[1] I have not studied the history of American business owners, and I cannot speak from knowledge or experience about owners who have been strongly motivated by noneconomic goals. My expectation is that there always has been a minority of owners who have been motivated by strong noneconomic convictions. But I don't expect that the particular noneconomic motivations of owners in the 18th century would be the same as those of owners in the 19th or 20th centuries. However, I do suspect there is a similarity in the way that some fraction of owners have had a passion for and wisdom related to their business' purpose that transcends pecuniary considerations.

presumably attempt to forecast the nature of the next stage based on an analysis of emerging trends. I will leave that approach to social scientists who have experience doing socio-economic forecasting. The approach utilized here is to develop a scenario for an economic stage that could be expected to lead to improved socio-economic performance for the American economy. My proposal for the next economic stage is one that would enable very substantial improvements in the kind of functioning that would provide remedies for the important ways in which the economy has been dysfunctional. Although the overall performance of the American economy has in many respects been dynamic and highly productive, its human performance has too often been unfavorable. In other words, there has been a high human cost associated with the American economy's typical functioning. The human economic casualties include the many people suffering from chronic ailments such as obesity and type 2 diabetes, not to mention cancer, heart disease, and many others. Too many suffer from poverty and addictions. Further, people both suffer from and have very serious concerns about environmental degradation. These human costs can usually be traced directly or indirectly to socio-economic dysfunctions. Market failure in one sense or another is usually involved.

Because the economy's functioning can usually be implicated in America's low human performance, and because there are an increasing number of people that are very concerned about these matters, my proposal is for a fourth economic stage known as the *humanistic hand*. The essence is that people participating in an economy in the humanistic hand stage would have strong aspirations for remedying the dysfunctions associated with the kind of modern capitalism that exists in contemporary America. In the humanistic hand stage, people would be focused on achieving the kind of socio-economic performance that can be expected to yield high human well-being. That is, they would be focused on finding and implementing remedies for many of the human costs associated with existing socio-economic dysfunctions (and market failures). It is beyond the scope of this paper to explain in detail how all the different dysfunctions would be remedied. However, the next section will explain how the thinking of Elinor Ostrom can provide a number of the essentials needed to illuminate the path toward an economy with a humanistic hand.

In what follows my plan is to start with a relatively brief explanation of Ostrom's institutional economic contribution in which she explains about the features of common pool resources that are associated with both successful and failed institutional functioning. Building on Ostrom's work, it is possible to gain important insights into what a modern capitalist economy needs to do to improve its human functioning without sacrificing economic functioning in the usual sense (output, productivity, technological innovation, etc.). The ideal is that an economy that reached the humanistic hand stage would experience much higher performance in mental and physical health, equality, social harmony, and related considerations than an economy at an earlier economic stage.

It should be noted that Ostrom's work applies most readily to small scale situations. To better understand how Ostrom's thinking can apply to large scale situations and at the societal level, I have drawn on David S. Wilson's interesting research that combines economics with evolutionary biology. Using insights from Ostrom and Wilson one should be able to understand how a socio-economy's humanistic handed functioning can be a substantial improvement over the functioning of earlier economic stages. Arguably, the American economy in the humanistic hand stage could be able to achieve substantially greater human performance than what is typically achieved by other modern capitalist economies in the world.

Elinor Ostrom and common pool resources

Elinor Ostrom's (1990; 2009) research focuses on common pool resources (CPR) and the dilemmas they have posed for their users and society. A CPR is a resource such as a fishing ground, an irrigation system, ground water, pasture land for grazing animals, etc. that jointly benefits a group of people (the users) but which provides diminished benefits to the users involved if each individual pursues his or her narrow self-interest without considering other users. The CPR has a definite capacity. The problem is that each individual user has an incentive to overuse the resource. As authors such as Garret Harden (1968) have pointed out, when each user single-mindedly and independently follows the incentives, that will cause depletion of the CPR's capacity, possibly creating a tragic overuse of the resource.

In the view of conventional economic theory, there are only two ways to deal with this overuse problem. The first is to have government impose rules and/or taxes forcing the self-interested individuals to refrain from the destructive overuse of the CPR. The second is to privatize the CPR, making it a private, marketable, excludable good (Ostrom 2009, p. 409). Ostrom and her colleagues recognize that this standard dichotomous way of understanding the options for dealing with CPRs is not adequate. They studied many CPRs around the world (see Ostrom 1990). They learned that the overharvesting can be eliminated or reduced by, for example, encouraging communication among the people in the user group, developing trust among them, thereby fostering cooperation among the group's members (Ostrom, 2009, p. 409). They further learned how CPR users can develop credible commitments among themselves in effect creating valuable social capital. What the researches came to appreciate was that the individuals and groups involved with a CPR are not hopelessly trapped; they can make fruitful efforts to organize and solve their social dilemmas (p. 416). It turns out that there are typically many elements of any CPR situation that can be modified. Ideas for such changes can come from individuals within the CPR who rely on self-reflection and creativity to develop novel patterns of interaction that restructure the interactions among the CPR's users (p. 417). Further, Ostrom's research found that groups that attempt to organize and effectively manage their CPR are most likely to succeed if they follow eight core design principles.

The eight core design principles are (Wilson, 2015, pp. 12-13; Ostrom, 2009, p. 422):

1. *Strong group identity and understanding of purpose*. The identity of the group, the shared resources, and the need to manage the resource must be clearly delineated.
2. *Proportional benefits and costs*. Members of the group must negotiate a system that rewards members for their contributions.
3. *Collective-choice arrangements.* Decision making should be by consensus or another process recognized to be fair.
4. *Monitoring*. To prevent free-riding and exploitation, monitoring should be used to detect violations.
5. *Graduated sanctions*. Transgressions need not require heavy-handed punishment, at least initially. More severe punishment can be waiting in the wings.
6. *Conflict recognition mechanisms*. Conflicts should be resolved quickly in ways perceived as fair.
7. *Minimal recognition of rights to organize*. Groups must have the authority to conduct their own affairs.
8. *For groups that are part of larger social systems, there must be appropriate coordination among relevant groups*.

Ostrom (2009, p. 419) found that "the capacity to overcome dilemmas and create effective governance occurred far more frequently than expected and depended upon the structure of the resource … and the rules-in-use developed by users." Further, the success of these CPR collaborations depended on the capability of boundedly rational individuals to acquire fully reliable information in situations where dependable feedback was present (p.430).

The findings of Ostrom's (2009) research leads to the following overall conclusion. Individuals in CPR groups who are faced with incentives to cheat at the expense of others can overcome these disincentives and learn to work together. They do this by talking face to face with each other, trusting each other, forging good cooperative human relations, and committing themselves to their common purposes. Further, they also need to face the facts and complexity of their situation and negotiate in good faith. What does this imply for public policy? The "core goal of public policy should be to facilitate the development of institutions that bring out the best in humans" (pp. 435-436). In Ostrom's view, well designed institutions can nudge individuals to behave successfully in CPRs and other challenging social dilemma situations (p. 435).

At the heart of what Ostrom and her colleagues have discovered is that determined, cooperative, purposeful individuals can produce better socio-economic outcomes, ones involving better functioning, than capitalist economies ordinarily give rise to. Of course, it should be noted that Ostrom's CPR research applies strictly to relatively small scale situations. However, there is reason to believe that similar favorable outcomes can be expected for much larger scale situations. Let's consider David Wilson's thinking on this subject.

Generalizing the principles of common pool resources

David Wilson is an evolutionary biologist. So it is not surprising that one of his research interests has been Darwin's natural selection theory relating to the evolution of all kinds of living organisms. More recently, Wilson's interests have turned toward the cultural evolution of human societies, particularly the kind of cultural evolution that can lead to improving socio-economies and, thereby, make the world and its societies a better place to live (Wilson 2015, p. 6).

For Wilson the term *functional organization* is a key concept that is very useful for understanding the positive role that cultural evolution can have with respect to socio-economic change. From a biological standpoint,

> "something is *functionally organized* when its parts work together in a coordinated fashion to achieve a given end. The organelles of a cell and the organs of a multicellular organism are miracles of functional organization designed by natural selection to enhance survival and production" (Wilson, 2015, p. 9).
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> "When a group of organisms is functionally organized, its members coordinate their activities for a common purpose just like the organs of an organism and the parts of a can opener. A group that is extremely well organized could even be called a *superorganism*…" (p. 9).

Recall Ostrom's analysis of what happens when users of a CPR are able to be successful in organizing their CPR such that it overcomes the dysfunctional behavioral pattern(s) that otherwise would have caused the overuse and depletion of the CPR. Presumably, the result of such a CPR organizing activity is that the organization will then embody more of the features such as cooperative relationships that make it a functional organization. In the functionally organized CPR, all the members are coordinating their actions to achieve their common purpose. By overcoming the tendency to dysfunction, it has also become an organization whose members are working for the common good of society (Wilson, 2015, pp. 9, 29).

It should be noted that the negative tendencies of CPRs are very similar to the tendencies that exist in many ordinary competitive markets. In the latter, the market is likely to fail when its businesses behave in a purely self-serving way by, for example, using manipulation, deception, and trickery that cause consumers to pay too much for products they do not need (Tomer 2017, p. 77). Arguably, if instead these markets were functionally organized a la CPRs, consumers and businesses would be communicating and cooperating with each other. They would be coordinating their actions and presumably finding a common purpose. And the businesses would be attempting to behave in a socially responsible manner. That is, the businesses would be learning about the true preferences of their customers and attempting to supply goods that are really and truly right for them rather than seeking to gain at their expense (p. 89).

According to Wilson, Ostrom, and Cox (2013) (henceforth WOC), the core design principles associated with successful CPRs can be generalized so that they are useful in other contexts such as in improving the functioning of markets. WOC argue that these "principles have a wider range of application than CPR groups and are relevant to nearly any situation where people must cooperate and coordinate to achieve shared goals… The principles can be used as a practical guide for increasing the efficacy of groups" (p. S22).

Also according to WOC, groups and societies can benefit greatly by using the core design principles in situations where there are possibilities for some group members to opportunistically benefit at the expense of others (WOC, 2013, p. S26). These principles which are required to accomplish shared objectives "apply to most human groups whose members are not close relatives, proven friends, or coping with a dire emergency" (p. S26). One might think that such groups would be inclined to spontaneously adopt these principles, but that is not so (p. S27).

Education is one of the contexts that can benefit significantly by applying the core design principles because many classroom situations are deficient in the use of these principles (WOC, 2013, p. S27). There is evidence that educational applications of these principles "can have a transformative effect on classroom behavior" not only in the short-term but in the long-term (p. S27). The Sudbury Valley School in Massachusetts provides a radical educational success story. In this school which has a strong democratic and normative environment and which emphasizes self-motivated learning, the core design principles have contributed to an environment that prevents bullying and other harmful behaviors (p. S28).

Another important context that can benefit from the core principles is neighborhoods. Two case studies have examined use of the principles as a framework for improving the quality of neighborhoods. The first is the West Side Community Collaborative in Buffalo, New York. The second is a program called Design Your Own Park in Binghamton, New York. The first focused on a neighborhood "characterized by substantial deterioration of the housing stock and the invasion of drug dealers, prostitutes, and substantial decline of property values" (WOC, 2013, p. S29). In this case, adopting most of the principles led to reversing the tragedy of the commons over a period of years. In the second case, the principles were used in connection with the opportunity to design and create a neighborhood park (p. S29). The groups working to create the park were coached to adopt the principles. Over time they had success in creating "a safe, secure and esthetically pleasing environment."

The upshot of these and other examples of applying the core design principles is that a generalization of the principles is possible because the principles "follow not only from political theory but from the evolutionary dynamics of cooperation in all species and the biocultural evolution of our own species" (WOC, 2013, p. S30).

"Our examination of a few case studies … only scratches the surface, but supports the notion that the core design principles can be generalized. In addition, an extensive literature on human social behavior in the laboratory can be related to the core design principles, if only in retrospect, and broadly supports their generality" (p. S30).

Toward a humanistic hand economy

If, as it seems, the American economy is performing relatively well in quite a few purely economic senses, but relatively poorly in that the socio-economy's dysfunctions are causing it to perform relatively poorly in a significant number of human senses, how can this situation be changed? That is, how is it possible to make a transition to the humanistic hand stage? The key to the answer is the understanding that a generalized version of the core principles that are useful for overcoming CPR dysfunctions can be useful for overcoming many of the economy's human related dysfunctions. Conceivably, appropriate application of the generalized principles can enable the economy to overcome its dysfunctions related to the problems of obesity, poverty, addictions, etc. To move in this direction, what is needed is a process of cultural evolution oriented to overcoming the human related dysfunctions. Cultural evolution, as Wilson (2015, pp. 19-21) explains, is like natural selection based on relative individual fitness except that it is instead based on "natural selection between groups." Cultural evolution involves much social experimentation, some of which involves conscious invention, and some of which is inadvertent (Wilson 2011, pp. 353-354). Some of the cultural evolution might be considered to be "guided mutation" (p. 354). As Wilson points out,

> "Life is complex, and our understanding is severely limited. At the end of the day, we need to try out multiple solutions, designing them as best we can, and select the ones that work based on a careful evaluation of their consequences. We need to manage the process of cultural evolution" (p. 354).

The cultural evolution process can lead to desired outcomes with the necessary scale; it is, however, not a sure thing like an engineered process. Some kind of cultural evolution is presumably always occurring but not necessarily the kind that will lead to the desired functional organization. Things can easily go wrong, and there are many unforeseen consequences (Wilson, 2011, p. 354). There always seems to be a substantial group of people that will oppose any good idea. The best that we can hope for are good leaders and a strong positive sense of purpose among the country's citizens. Nevertheless, knowing that there are core principles that, if followed diligently, can bring about favorable human results is an important reason for optimism. There is good reason to believe that guided cultural evolution can bring about economy-wide functional organization. The goal of overcoming major socio-economic dysfunctions surely is one that many will find to be a source of strong motivation. The reward of a transition to a humanistic hand economy involving positive institutional transformation would no doubt be worth the costs.

Conclusions

It is interesting to note that a number of leading authors (namely Adam Smith, Alfred Chandler, and Richard Langlois) who had a great amount of understanding about the economic stage of the American economy that existed during the time that they were actively writing and researching utilized metaphors as a short hand way to refer to the key characteristics of the functioning of the economy at that time. This paper has provided relatively short explanations of the important economic stages that the metaphors (invisible hand, visible hand, and vanishing hand) refer to. No doubt there are economic historians who could identify other economic stages in the development of the American economy. Nevertheless, the stages identified in this paper seem particularly important, and they provide a useful entry point to thinking about the nature of what might be the next economic stage (human hand).

The later part of this paper has drawn on the research of Elinor Ostrom and David Wilson to explain about the qualities of functional organizations, the kinds of qualities that a humanistic hand stage would embody. Ostrom understood that groups typically become dysfunctional when group participants are overly self-interested, and therefore, seek to gain at the expense of others, ultimately causing the group to cease functioning and to fail. Ostrom and Wilson recognized that what is needed are functional organizations in which group participants communicate, trust each other, and become committed to common purposes. The humanistic hand economy is one in which the predominant economic organizations are functional organizations. There is strong reason to believe that in these functional organizations, the human costs of economic activity will be dramatically lower than is the case in the typical economic enterprises of American style modern capitalism. Arguably, because of its high level of functioning, its emphasis on noneconomic motivation, its low human costs, and its high overall level of well-being, we need a humanistic hand economy. Can we expect cultural evolution to produce a humanistic hand economy? The answer is not knowable at this point. However, there are some signs that at least a certain significant and growing fraction of the American population would favor a transition to an economy with a humanistic hand.

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Author contact: johnftomer@gmail.com

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