



Understanding Society: The Interplay of Reason and Emotion

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...the assumption behind [scientific] consensus is that science is a source of authority. Rather, it is a particularly effective approach to inquiry and analysis. Skepticism is essential to science; consensus is foreign. To expect agreement on all or many aspects of a multifaceted issue would be unreasonable. (Professor Richard Lindzen of the Massachusetts Institute of Technology)

Abstract

Understanding society requires incorporating all of its human dimensions, including both reason and emotion. Emotion has been underplayed because it complicates the study of society, making it difficult to build mathematical models, the emblem of a true science, at least as it has been interpreted over the past several hundred years. Humanistic portrayals of society have thus been marginalized, as also is art, generally, because they undermine rationality, the hallmark of authority in a science-based world. However, science, itself has come to be seen as somewhat emotional, as scholars examine its history, to say nothing of human beings, generally, who are emotional through and through. Other versions of scientific and scholarly research are explored to uncover these dimensions and their interconnections, including recent developments in biology, which focus on the possible importance of consciousness in nature.

1. Science on Trial

Reason was reintroduced into the intellectual discourse in the 12th Century, thanks largely to the Arab philosophers who had preserved as much as they could of the ancient Greek tradition before the introduction of monotheism in the Judeo-Christian tradition. During and following the Renaissance, reason brought a profound change in the human understanding of nature to the extent that we now have enormous power to intervene in nature, sometimes with unintended consequences that might threaten our existence as a species. Reason has also become the guiding inspiration for the understanding of society, to the extent that social science uses it as the basis for theorizing about society in the same way as it has inspired our understanding of nature. One question is: Why would reason not inspire us to alter our behavior so as to avoid any possible tragic consequences of our reason-based interventions in nature?

Indeed, there is a certain dissatisfaction with science today, both from without and from within science itself. There is a degree of irony to this dissatisfaction, resulting as it does

from some of the unanticipated consequences of science in the social world to which science itself belongs. Science in ancient Greece, where it was formalized, was seen as a branch of philosophy, the search for wisdom as the name implies, often with the purpose of dispelling superstition. With the rise of monotheism this connection was greatly diminished. Most of the ancient temples of learning and the written expression of this learning were destroyed and replaced with religious teachings that were to guide human behavior for the next 1500 years or so. Estimates are that only a small percentage of ancient wisdom has survived this evolutionary change:

The ancient world has come to us depressingly fragmented... But the most lamentable, is that this ancient inheritance has been given to us in a mutilated, misunderstood and distorted form by the generations that intervened (Theodorides 1954, p. 1)

During the Renaissance the ability to contemplate this knowledge was largely a product of the leisure time for the privileged class that was made possible by the economic surpluses provided by the rise of mercantilism in Europe, especially in what is now Italy. These surpluses were a product of the ability to “buy cheap and sell dear”, with the profits then employed to increase the number of ships and sailors used along with the products involved in the trade itself. This then stimulated the increased production of those goods and the ultimate rise of industrial capitalism in Europe (Pirenne 1925).

Science, especially physics, played a critical role in this process. The scientific revelation that the earth revolved around the Sun (as Aristarchus had also claimed some 2000 years earlier but in a more tolerant environment), along with other insights developed through reason, resulted in the burning at the stake of Giordano Bruno at the beginning of the 17th century in the Campo de' Fiori, the departure of Copernicus to his native Poland and the house imprisonment of Galileo. The issue then was probably more the questioning of the authority of the church than with anything having to do with an understanding of nature. But it did, however, cause a certain delay in the acceptance of science throughout Europe during that period, as well as for some people even today.

Nevertheless, science was here to stay, and in time would replace religion as the ultimate source of knowledge for the western world. The explanation for this was not only that science was empirically grounded but that it was to provide the information for the technologies that allowed mercantilism and industrialism to flourish and grow throughout Europe and ultimately in the rest of the world. These technologies allowed productivity to increase rapidly, encouraged and allowed the earth's resources to be exploited but, equally importantly, also helped create the military weapons that would allow the imperial European powers to exploit workers and their lands throughout the world to the fullest extent. This produced an increasing amount of surplus value that could then be invested in the continuous growth of this process. But it also created the illusion, especially in North America with its endless frontier, that this process could continue forever and that there were no limits in the universe to hinder its continuation (Potter, 1954). That we were consuming our earth's capital and treating it as if it were income was not considered by those who were creating the myth of endless development that rules our consciousness even today (Schumacher, 2010 [1973], Meadows, et al, 2004 [1972]). Also, of course, there would be no embarrassing questions

from a physics-inspired science about the moral implications of this world-wide exploitation of man and beast. Physics sought mechanistic mathematical laws; of what importance could morality be in such a deterministic world?

2. The Organization of Science

It might be well to recall how science itself is generally organized in this respect. Nineteenth century physics was and still is, by and large, the godfather of all science. Most scientists, natural and social, aspire for the deterministic certainty claimed by physics (notwithstanding subsequent uncertainties presented by quantum physics). When Newton was formulating his reductionist and mechanistic theories about order in the universe, he believed that he was merely uncovering a design formulated by God. Any moral judgements about this design would not seem logical in this respect. The subsequent indifference to this possible divine origin of the universe by current scientists has not changed significantly the belief in its deterministic character. Thus, emotional and moral considerations continue to be seen as extraneous to the project of science. Indeed, these critical elements of human existence have been seen as an impediment to objective research, where they are believed to have deleterious effects. This became true for research on both nature and society.

The purpose of scientific knowledge has been, first, to understand nature and, subsequently, through its implementation in engineering, to dominate and exploit it for human purposes (Leiss, 1974). Not that religious inspiration has been missing from this perspective:

And God blessed them, and God said unto them: be fruitful and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living creature that moveth upon the earth. (*Genesis*, Chapter I, Verse 28).

The usefulness of this perspective to the evolution of mercantilism and industrial capitalism explains the symbiotic relationship that was developed between capitalism and science and further explains why so many resources continue to be devoted to science up to this day. This is especially true of the military applications of science that have made possible conquest and exploitation of the entire world by the imperial powers. Needless to say, all of this has been a male dominated enterprise from the very beginning, perhaps an extension of the hunter role of males throughout most of the previous evolutionary history of *Homo sapiens*.

The subsequent development of the other natural sciences, chemistry and biology, and more recently the social sciences based on this attachment to 19th century physics, has had important implications for society. Nineteenth century physics had certain ontological and epistemological presuppositions which guided its activity. We recall that presuppositions are not examined empirically; they are taken for granted and not subject to empirical examination.

One presupposition, as mentioned above, is that the natural world is governed by mechanistic and deterministic laws. At first, for Newton at least, these laws were thought to be the product of divine will: they were God's laws. Subsequently, most physicists dropped this divine origin and now, for the most part, believe that they are simply a fact of nature, born with the Big Bang or whatever origin the universe may have had. Second, these laws

were believed to be universal and infinite: they would exist for all times and all places, hence are deterministic Third, these laws were and are fundamentally mathematical: mathematical formulations can best express their true nature. Fourth, nature exists apart from the scientist; he (and now a certain number of “shes”) is simply a detached observer who is merely uncovering these laws. Fifth, these laws can be best examined by combining observations at the most microscopic level to form a picture of the whole; the whole being nothing more than the sum of these parts, combined mechanistically and expressed mathematically. Similar examples can be drawn from the other sciences, at least until recently, as will be discussed below.

3. Science and Human Society

The atomistic view of nature leads the other sciences to a similar approach, with the atomistic units, themselves, changing as befits the character of that science. In social science this has led to the ideology of individualism, that is, the idea that society is composed only of the individuals who constitute it and that the sum of their activities creates it. Therefore, the social whole is nothing more than the sum of these individuals’ activities and there are no other larger component parts.

Thus, following the inspiration of physics, the economy is seen as a deterministic mechanism composed of the actions of these atoms (rational individuals) which can best be expressed in mathematical laws. That there might be socio-organizational, including ideological principles, directing this process is not perceived in the atomistic framework of economics. An example of this limitation in perception is the belief by many economists (and businessmen) that an overall economy works best without government regulation, while at the same time ignoring the existence of significant forms of government regulation through tax laws, government subsidies etc., in society at large, as well as regulation *within* corporations, some of which are larger than most countries and their national economies. What corporate executive could imagine that his employees, acting in their own selfish interests, however rational, would produce the best corporate outcomes? In spite of this, many employees do logically behave in this way, inspired by our broader culture of possessive individualism, though always within the highly regulated corporate environment within which they work, of course (Macpherson 2011[1962]).

Needless to say, this is not a questioning of 19th century physics; it was perfectly adequate for its purposes at that time. Nor is it to belittle the enormous improvement in the material standard of living for those fortunate enough to have benefited from the free market system. It is rather more a questioning of the uncritical adoption of this model for explaining and understanding human society. Thus, one reaction to a physics-inspired science of social reality is the critique of science that many philosophers have been expressing for at least 200 years now.

One of the most vociferous of these critics was Friedrich Nietzsche. His early writings, especially, express a virulent questioning of the ability of science to provide an adequate view of social reality, especially in contrast to the view expressed by art. If social science were thought to be based on the idea of rational individuals, he would claim that most people have not either the time or the money or the education necessary to be rational in their

everyday lives. Most of their behavior is actually governed by emotions, emotions governed by the important myths of their time. His belief was that these myths were the most creative expression of human inventiveness. They have almost transcendental importance to human existence and should be an indispensable complement to science. (Megill, 1985, Ch. 2).

This insight had previously led an early 11th century Muslim philosopher, Abdul Ala al-Ma'arri, to claim:

They all err—Muslims, Jews, Christians and Zoroastrians: Humanity follows two world-wide sects: One, man intelligent without religion, The second, religious without intellect (Malik 2014, p. 135).

This is not just a minor inconvenience; it has also led to a major problem in the adoption of democracy as a system of governance: How can you have a democracy with a public that is generally ignorant of the complexities of modern society and that is, therefore, destined to vote on the basis of its emotions? This led the ancient Greeks and 18th Century Americans to establish a democracy in which only propertied men could vote, and for Plato to imagine a Republic governed by philosopher kings. All this, as if emotions were important only to sentimental women and that men were not governed by emotions as much as by intellect. War, based on the emotions of fear and anger, indeed, one of the most emotional of all human endeavors, is almost exclusively a male enterprise!

But, at the same time: How can you have a social science that ignores the importance of this dimension to human society? As an example, economics, the premier social science, ignores completely the most important of human emotional activities, the reproduction of the species, because it is carried on mostly by women and without any trace in the market system. Economists will claim, of course, that this is not their concern and that it is somebody else's problem. And in the fragmented and reductionist world of modern science this would appear to be true.

But, then, whose problem? Emotions are ruled out of science by definition. Yet, it is foolish to believe that emotions are inferior, or irrational, as the derogatory dichotomy of most discourse defines the non-rational or emotional. Human beings are both rational *and* emotional, usually in various combinations. This is why in ancient Greece rational philosophical thought was complemented by art, especially the theater, where these emotional and moral dilemmas could be explored in depth. It is also why theater in modern society is tightly controlled, as in the McCarthy witch hunt of the 1950s in the United States, when dozens of writers and directors were expelled from Hollywood because they were raising important issues about the society with an emotional impact on their audiences.

4. A Socially Constructed Society

Thus, perhaps one should take a somewhat more mundane and holistic view of myths: they may well be the product of inventive minds but in time become the habitualized view of reality as described by Berger and Luckman in their book, *The Social Construction of Reality* (1991). Human beings *construct* the social reality that they inhabit. They process information from their environment, including the behavior of those around them in order to develop a manageable understanding of their social and natural environment, which then allows

them to live together as a social unit. The assumption here is that human beings are social animals and that cooperation is indispensable to their survival. They are also individuals, of course, but individuals who are dependent upon each other and must be somehow *conscious* of this dependency in order to survive. This is something which cannot be captured by the mathematical laws of economics based upon the exclusive presupposition of individual rationality. Meanwhile, different societies have, over time, been organized in different ways, combining individual behavior and collective understanding of that behavior accordingly, as any anthropologist who studies culture well understands.

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This is also to emphasize that science, itself, also *influences* human behavior, such that the atomistic ideology of individualism has, indeed, had a great deal of influence on the culture of modern society, especially in the developed world. The (a)moral values of the “free market system” continue to influence our behavior emotionally, and undoubtedly have caused much of the alienation recognized by most philosophers for the past 200 years or more. Indeed, this morality of “predatory individualism” has become an important “myth” for modern society, leading to anti-social behaviors that could very well threaten our very survival as a species (Gutenschwager, 2015).

The Role of Darwin

Adding to this 19th century physics-based view of social reality is the sizeable contribution of Charles Darwin to social theory. His views have sparked a great deal of opposition from religious perspectives because of the distasteful assumption that we have descended from apes. Much of this type of opposition is based upon a very superficial understanding and a general ignorance about what Darwin actually wrote. More thoughtful opposition relates to the subsequent transfer of Darwinian principles to social reality where it is used in a different sort of manner, especially in support of the ideology of competitive (predatory) individualism.

Darwin’s theory claims that mutations in the genes of a species or changes in its environment would result in genetic changes in that species that would allow it to survive those changes. If these genetic changes do not take place the species will simply disappear, hence the terminology “survival of the fittest”. This, of course, has nothing to do with strength, as many have mistakenly interpreted it, but rather to do with the ability of a species to adjust genetically in order to survive. Thus, survival of the fittest has to do with adaptability: if a species can adapt to the environment, if it can “fit in”, it will survive.

Meanwhile, changes in the environment can range from contacts with other organisms to major events such as earthquakes, meteorite bombardments, etc., to possible geological shifts, climate change, etc., that may derive in part from these major events. As far as the

various species are concerned, these events are random and must be adapted to, according to Darwin, if they are to survive. It is also well to keep in mind that for Darwin these genetic adjustments take place at an individual level; there is no conscious species-wide adjustment. Individual members of the species either adjust or they do not. If they do not, they disappear. If they do, they will likely become part of what then becomes a new species.

In addition to these major events, there is often competition among species whenever there is a scarcity of resources necessary for survival. Thus, some species change and/or disappear related to their ability to access these resources. This may go a long way to explaining the predatory behavior of *Homo sapiens*, as science and technology have increased our demand for and our ability to exploit the resources of nature and society, as well as our ability to compete with other humans for access to these resources.

In the vast history of evolution there has been built up a constantly changing and amazingly complex system of species, based on this process, and culminating in the human mind-body with its trillions of highly integrated cells. As discussed below, some scientists also believe that a world-wide human society would be the next level of complexity, once humans have figured out how to manage their potentially self-destructive conflicts.

5. The Symbolic Role of Science

This is not to say that there is some sort of scientific conspiracy involved here. Physicists enjoy their exalted status in society, their “symbolic capital” as Bourdieu called it, as do economists, of course, because of their emotional importance to society as it is currently structured. And this importance follows from their allegiance to the ontological and epistemological principles of physics. Nor does this mean that science has plotted to distort society in the ways described. The distortions are more likely the result of an inability to see the connections drawn above. We live in a compartmentalized world with connections among these compartments seen by some, but probably not by most, men (McClelland, 1975, Ch.3; Gungor, 2008). Thus, we have a science divided into compartments—physics, chemistry, biology in the natural sciences and economics, sociology, political science, anthropology, etc., in the social sciences; as well as a medical perspective which sees the human body as composed of separate organs and systems with specialists attending to each, sometimes with insufficient concern about the connections (especially with the mind) among them; etc.

This mental compartmentalization possibly began with the rise of urbanization. Communities much larger than those of the hunters and gatherers led to the specialization of skills and knowledge, especially among men, that characterizes urban society even today. Urban dwellers are no less dependent on each other than hunters and gatherers, but the cooperation among them may be hidden by the “unseen hand” of the marketplace, as Adam Smith would claim thousands of years later.

However, it is entirely possible that this unseen hand would not necessarily guarantee the perfect social solution, as many economists still assume today. But it may have encouraged the compartmentalization of thoughts and behaviors, making it more difficult to see connections among them in the social world. This may also over time have come to be reflected in the lower number of synapses in the male as compared to the female brain, making it easier for the male brain to focus on a single project but more difficult for most men to multi-task, for

example, or to discuss more than one subject at a time (McClelland, 1975, Ch. 3; Gungor, 2008, Ch. 5).

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Thus, we must realize that the current social world studied by and in part created by a physics and Darwinian-inspired science is one result of the often unanticipated consequences produced by intentional rational behavior. To the extent that this is problematic, however, it should lead to a reassessment of our understanding of the social world, as well as of the intentions and the thoughts that prompt this understanding, especially in the scientific efforts to explain it.

For example, businessmen, as well as many common people, inspired by the myth of individualism, are now dissatisfied with a science that calls into question corporate behavior that threatens to alter the earth’s environment in detrimental ways, ironically one of the unintended consequences of an atomistic and reductionist science itself! Climate change and environmental pollution, generally, are understood empirically by most scientists to be a serious problem for humanity. However, this claim is rejected by some citizens and ignored by most businessmen, because *it contradicts the belief prompted by the myth of our times that rational individual behavior will necessarily lead to the best collective outcome*. Indeed, many economists claim that this myth to be true, even if it can only be proven deductively and not empirically! This is not to say that rationality should be abandoned in the search for understanding nature and society. But it is one thing to use reason in the scientific search for knowledge and another to attribute rationality to all members of society to facilitate the creation of mathematical models, as the physics-inspired social scientists do.

6. The Role of Art in Society

The importance given to art by Nietzsche is also complemented by other critiques of the mechanistic and deterministic view of society. As theater is a form of art, society could also be seen as theater, as claimed by Kenneth Burke (Rueckert, 1969), which was true for most ancient Greeks. This is derived from Burke’s claim that human beings are symbol-using animals. Thus, we, in essence, live in a world of symbols, rather than in a direct relationship with our environment. Language is our most basic symbol system, one developed to increase our understanding of our environment by allowing this understanding to be enhanced through its discussion with other human beings. Language is a system of symbols that represent elements of our environment, and as such is constantly evolving as our understanding evolves. Ancient languages were also thus more literal than modern ones. This can be seen with ancient Greek where words referred to specific elements of the environment, which then were elaborated into other metaphorical meanings with the passage of time, making translation into such a complex process it now is.

Mathematics is also one of these symbol systems, of special importance since the rise of science and of the technological society it has given birth to. Mathematics, however, also has symbolic, and often a mystical importance in today's social world, evoking important emotional responses which go well beyond its instrumental use to express meanings among the community of scholars who are studying nature and society. In other words, it has an artistic (sociodramatic) dimension sometimes understood explicitly or more often intuitively by its users: It can be used as a means of mystification, helping to establish the user as someone high up in the social "food chain". Religious symbols were and still are used to establish the same sort of status among its users and their audiences.

Art is the playground of this social evolutionary process because artists are given the freedom to experiment with meanings, not only by adding new meanings to words but by experimenting with other symbols, as well. Thus, sounds, colors, designs, movements, etc. add meanings that can be used to evoke emotional and intellectual responses in viewers and listeners. These metaphors are still very much in use today as any politician or advertiser or teacher or whoever can attest to. Burke (1968) and Duncan (1969) have elaborated an entire "science" of sociodrama to explain how people are motivated to think and act in various ways in society, according to the symbols that are used to influence their thoughts and, hence, behavior.

Other symbols, such as music, dance, hair and clothing styles, tattoos, etc., along with changes in language, can thus be used to support or undermine an existing social order, as the case may be. In the 1960s all sorts of symbols were used to criticize the existing social systems based on authoritarian and technocratic reason-based regimes found across the spectrum of political-ideological systems. All these regimes shared common anti-democratic propensities. These propensities were and are based on technological domination made possible by applications of modern science.

Indeed, the dream of some scientists and many engineers is to replace human beings with machines, using artificial intelligence to make human beings unnecessary and/or mere extensions of the machines that would control their lives. This would create a more productive and reliable "workforce", but the idea of work, itself, as an important element in the emotional life of human beings is mostly ignored in this vision. Not that technology is itself evil, of course; replacing repetitive, meaningless tasks such as the assembly line with automated technology is obviously a blessing. The problem is to recognize when technology is interfering with human creativity and emotional well-being to the detriment of those human beings whose tasks are being replaced (Cowles, 2019). But this would require a moral judgement, something missing, by definition, from most of modern science and engineering.

Thus, for many, if not most scientists and engineers the moral and emotional foundations of human society are invisible. Yet, human society is based on the ability of human beings to cooperate, which, in turn, as most of the scientists in the September 2018 issue of *Scientific American* agree, has been based on their ability to communicate and learn from each other. To communicate meanings and to cooperate requires an atmosphere of trust, which, in turn, depends upon an emotional and moral-based set of values that is referred to as culture. In order for this to occur, moral philosophy must be a part of everyone's "tool kit", including that of the scientist and engineer. But emotional and moral considerations are excluded,

as mentioned above, from the work of scientists and engineers, which has resulted in a worldwide technocratic culture that has become so alienating to today's human beings.

7. Countercultural Movements

All of this goes a long way towards explaining the countercultural movements that began in the 1960s throughout the world, irrespective of political-economic ideologies and systems. Because of the police repression imposed upon these young people at that time, these movements have gone “underground,” and continue today in a more clandestine manner. Ray and Anderson (2000) discovered this quite by chance during the research they carried out in the 1990s in the USA. They discovered groups of people that they labeled as “Cultural Creatives”, who were abandoning the modernist cultural values of competition, predation and materialism. Implicit in modernist culture is the worship of the “Money God”, as expressed most clearly in the social science of economics, which, in turn, aspires explicitly to the application of epistemological principles inspired by 19th century physics. Cultural creatives are trying to establish, wherever they might be, a new culture based on friendship, mutual trust and cooperation, much as Epicurus had done more than 2000 years earlier. Furthermore, these cultural creatives, found mainly in North America, Europe and Japan, are now estimated to include as many as 200 million adults, as reported on their web page.

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*“History is
 governed
 by human
 choices.”*
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One of the ironies here is that while economic development is progressing rapidly in China and other East Asian countries, many cultural creatives have been looking to the East for inspiration on how to create a more meaningful spiritual and emotional life. As always, Aristotle's maxim that we must search for the proper “measure in all things”, is highly applicable, including his insight that we find the proper measure by exploring the extremes. Eastern religions sought inner peace in the greater or lesser absence of the satisfaction of material needs. Viewing the West, this absence is now leading to great enthusiasm among Asians for material goods and services. They will probably have to reach the extreme levels of materialism found in the West before they begin to review their lost spiritual heritage.

An outstanding article by Chinese scholars, for example, exposes a certain irony in the process whereby China was able to collapse the prolonged economic history of the West into a few short decades whereby they introduced rapid industrialization and financialization into their country. This they accomplished by suppressing the prices of agricultural products while increasing the prices of industrial products, and using the surpluses to industrialize their economy. This they did:

...in a much shorter time than it took the West to appropriate the wealth and slave labor from its colonies from four continents, which it used to enter the era of industrialization (Sit Tsui, et al, 2019, p. 31).

However, along the way they discovered that:

...the peasants, who had just benefited from land reform and resumed a highly diversified peasant economy, were comfortable in their modest, self-sufficient ways and did not have an incentive to increase their trade volume (p. 28).

So much for the notion that development is a historical necessity governed by deterministic laws! On the other hand, could China not modernize its economy, given its experience with British imperialism the previous two hundred years? History is governed by human choices at one location that have effects at other locations, intended or not by the authors of the original decisions, whatever mythological, religious or scientific symbols are used to legitimate those ideological decisions. Thus, the current massive migration of refugees into Europe is an inevitable result of the endless, often bloody, meddling of Europeans and their descendants in North America in the internal affairs of their countries of origin.

All of these symbol systems, including especially science, of course, have been and will be playing a highly significant role in the process of evolving to the next higher level of evolution by creating an integrated world society. The question is, what sort of society? Will it be a society based on shared human moral and emotional values or will it be a fully mechanized technocratic society based exclusively on the values of 19th century physics, along with certain distorted extensions of Darwin's theory of evolution? Finally, can there be a new science involved in this process that would incorporate ongoing 20th century revisions to these approaches?

8. The Emotional Need for Power

Meanwhile, there is an abiding human problem, irrespective of the particular mythology that has governed human societies over the past 2000 plus years. Whatever the ideology at the time, there have been some people, mostly men, though not only, who have used that ideology to satisfy an excessive, often pathological need for power. This is partly a result of the need that ordinary people have for a leader and their unwillingness to get involved, themselves, in the messy process of getting more or less egocentric individuals to cooperate in order to allow a large-scale society to operate at that level.

It is also a product of the fact that for most of our evolutionary history we have been prey, not predators, as many of the followers of Social Darwinism suppose us to have been (Sussman & Hart, 2005). Most of our ability to survive as prey has been the result of our ability to communicate and cooperate and thus outsmart the predators. Hence our need to live in groups. However, living in groups requires that rules be established so that everyone would know how to behave and be able to predict how others would behave in any given situation. Thus, moral systems were born along with cooperative group living, and these systems were deeply embedded emotionally, because survival depended upon everyone agreeing to abide by them. As we have moved to larger and larger scale societies, we felt the need to find a basis for designing moral systems to serve at these scales. Kenan Malik (2014) has traced these efforts in his book covering more than 2000 years and over most continents. He found that both reason and emotion have been involved in this effort, and concludes that the search has resulted in:

a polarization of the moral debate between those who insist that morality is nothing more than individual preference and those who desperately search for some external agent or realm in which to fix the objectivity of values, whether that be God or science, nature or transcendence. The real problem with contemporary morality, the reason it appears fractious and fractured, is, paradoxically, not moral but social (Malik, 2014, p. 343).

Of course, we can always return to the original reason for a moral system: survival. Insofar as we can estimate it, we can ask whether a given action would enhance or lessen our chances of survival, and assign a moral connotation according to this criterion. This would not be ultimately sufficient, but it would constitute a starting point.

In any case the question of morality does lie between the two extremes of the individual preference and the transcendental, as Malik concludes: it is a social problem. And the need would appear to be universal at that level. As most anthropologists would confirm, all societies need a moral system to guide the behavior of its members. This emotional need may be satisfied through the collective understanding and judgement of its members, the usual case in small scale societies, as well as in systems expressed in the idea of democracy. Or it can be satisfied through some sort of central leadership, tyrannical or otherwise. We are currently struggling with the question of how we can solve this problem in large scale societies.

But, currently, nothing seems to be working very well, neither the belief by some that science can resolve this either by ignoring morality altogether, as is often the case, or by substituting scientific law for moral code. Nor has religion been any more successful with its belief systems, which often include eliminating all those who do not share the beliefs of their given tribe. Nor have the specific recommendations by philosophers for any given standard been very successful in influencing the behavior of any given society. Indeed, the current scientific ideology of individualism embodied in economics hardly confronts this need at all.

Thus, unfortunately, we have yet to discover a social system with its concomitant ideology, at least in a large-scale urbanized world, that would relieve human beings of the uncertainty and anxiety that accompanies life in those systems. Gunther Stent (1978) finds inspiration in a possible innate or deep structure that might underlie the universal human need for a moral code. This would offer the hope that we will find a way, as this deep structure surfaces, to find meaning much as we do in forming specific languages, based on the deep cognitive structure that we all share biologically, as Chomsky suggests. This could also obviate the overwhelming emotional need for power in that small(?) number of individuals who seek to overcome anxiety by controlling the world and tyrannizing everyone else in the process.

The ancient Greeks averted this problem in part by believing that the community was the ultimate reference point for individual behavior. They separated life into the private, the “*idiotiki*” (ιδιωτική), and the public; the moment a person stepped out of his house he was automatically a citizen. A “*politik*” (πολίτης), from which derives so many of our common words from political to policy to police. Within the house he was an “*idiotis*” (ιδιώτης), from which derives our current word “*idiot*”, the person who lives in his own individualistic private world, even while he is out in public.

Meanwhile, the need for power is an example of the complexity of the emotional dimension of human existence. The need for power is in some ways a part of being human. Thus, it has had both normal and pathological expressions throughout history. Its pathological expressions can be very harmful both to individuals as well as to whole societies themselves. This has become more and more obvious over the past two hundred years or more, with the development of advanced technology and weaponry that has allowed power to be exercised ever more brutally.

McClelland (1975) has conducted major research on this problem. He traced the need for power through the stages of emotional development of the typical human being. He used the Freudian scheme, further developed by Erickson, of the oral, anal and genital developmental stages of the human being, which he then related to the need for power. Assuming that the need for power is present in everyone, he sought to explain how it might differ, both according to age as well as to the level of emotional development of the individual, irrespective of age. In the oral stage the need for power is realized through reliance on others, typically as a representation of the mother who provides sustenance and security, and in its pathological adult form as being “tied to apron strings of one’s mother”, or to any other provider of emotional sustenance. In the anal stage power is realized by the ability of the child to say “no”, thus recognizing his or her own power, which in its adult pathological form results in the person who constantly avoids making decisions or who collects prestigious possessions, such as expensive automobiles for men or shoes for women, etc., as an expression of one’s power. In the genital stage it is represented by the ability to actually control the behavior of other people, which in its adult pathological form leads to the tyrannical behavior characteristic of so many of history’s political, religious or business leaders. McClelland, as well as other researchers (Lee-Chai and Bargh, 2001), however, add a fourth stage, the use of power in an organizational setting to bring about changes in the social world, present in everything from the local community groups to the antiwar movements of the 1960s, or even radical religious movements. He suggests that the need for power can be seen as a normal part of the process of reaching emotional maturity, but also can take on pathological dimensions as described above, when maturity is not reached and it is used in excess, especially in stage 3.

It may also be that those with an excessive need for power and who often become tyrannical leaders, may be seeking power over others to respond to a feeling of inadequacy in their own psychology, mistaking fear expressed by others as a form of respect, or esteem as Maslow (2010) labeled it, in order to compensate for a lack of achievement in their own lives. This is not exactly a conclusion suggested by McClelland, but might be seen as a possible dimension that could be explored. This psychosocial problem is simply one more reason to broaden the study of society to include much more than reason (or even mythology and religion) as a means for explaining it.

Thus, emotion should not simply be dismissed as irrational and of no importance, as is so common in the age of science and engineering. Rather it should be explored and understood for its importance in everything from the operation of the “free” market system via advertising and marketing, to its use in the political arena to influence voting behavior, to its use in supporting an enormous worldwide military-industrial complex, about which President Eisenhower warned in 1960, and which has been so important to the capitalist system for at least 200 years. This major investment of public funds requires a viable enemy, something apparent in the emotionally charged McCarthy witch hunt of the 1950s in the USA and even to Thomas Paine in the late 18th century:

The English government presents, just now, a curious phenomenon. Seeing that the French and English nations are getting rid of the prejudices and false notions formerly entertained against each other, and which have cost them so much money, that government seems to be placarding itself for a foe; for unless it finds one

somewhere, no pretext exists for the enormous revenue and taxation now deemed necessary.

Therefore, it seeks in Russia the enemy it has lost in France, and appears to say to the universe, or to itself, 'If nobody will be so kind as to become my foe, I shall need no more fleets and armies, and I shall be forced to reduce my taxes... Unless I can make an enemy of Russia the harvest from wars will end [*Plus ça change...*!]. I was the first to incite Turk against Russian, and now I hope to reap a fresh crop of taxes. (1791, Preface to the French Edition of *The Rights of Man*)

9. A New View of Science

Thus, if we are to take this “outside” dissatisfaction with science seriously, we may also need to see if there is any “inside” dissatisfaction. Not that dissatisfaction within science is out of the ordinary, as noted above. With large scale efforts to test scientific hypotheses empirically there are bound to appear unanticipated outcomes. This is what Kuhn would label as anomalies, the accumulation of which would likely lead to a paradigm shift or scientific revolution, as he has described it. These shifts would require time to pass, as many scientists would, at first, object to the change because it threatened their emotional feeling of certainty. This is further complicated by the high degree of specialization that inhibits the ability to see connections among specific branches of science or, perhaps more importantly now, among the discoveries and applications of science and their effects on the individuals and societies that make up today’s world.

Indeed, there are now many examples of dissatisfaction within science itself, a small part of which can be seen in a sample of the bibliography (Talbot, 1991; Harmon and Sahtouris, 1998; McTaggart, 2002; Gutenschwager, 2004; Lanza & Berman, 2009; Edwards, 2010; Lipton & Bhaerman 2011; Sheldrake, 2011 [1988]; Segerstrale, 2013, etc.). One way to investigate this dissatisfaction would be to ask if science might need a “godmother” to complement the “godfather” of science, something which, among other things, would likely move biology and anthropology from a secondary to a more primary status in science.

The authors above claim that what is missing in a physics-and social-Darwinist-inspired science are the ideas of consciousness and intentionality, characteristics which they believe are found throughout nature, as the ancient Mayans also appeared to believe (Jackson, 2019) and, even more obviously, in society, as the phenomenologists, existentialists and other humanists would claim. For them, the elements in nature are seen as consciously involved in creating and changing nature, and this is true from the tiniest prokaryotes to the most complex systems such as the human mind-body. Physics would appear to be indifferent to the possibility that the regularities expressible mathematically may in fact be governed by a nested hierarchy or holarchy of constructed structures or holons, as Ken Wilber (2017), following Arthur Koestler, would label them. This holarchy would start at the microscopic level of nature and end up in society with the human mind-body, the most complex holon working successfully in the living world.

It is important to understand the difference between the word hierarchy and holarchy, in this sense. A hierarchy implies a center of control at the top of the hierarchy, the commands of which are simply carried out by the lower levels. Holarchy implies a system of holistic

structures or holons that are autonomous in themselves, though built up from smaller scale holons, also autonomous in themselves. Thus, it would not necessarily be the unregulated yet somehow mathematically expressible action of individual elements in nature, according to the atomistic viewpoint, but rather the ability of nature to organize itself at different levels in order to maintain its overall holistic structure.

As discussed above, the atomistic view of nature has led the other sciences to a similar approach. In the social world this has encouraged a mythology of individualism, as described above. In a more holistic natural science, it might appear as if social science were “humanizing” nature. This would reverse a long-term trend to mechanize humanity, both with efforts to see everything human as a mechanism, but also by attempting to replace human beings with machines and/or to make them mere extensions of those machines.

Thus, in order to give some apparent meaning to the mechanized human individuals’ activities, economics has had to presuppose certain deterministic characteristics of human behavior. It has assumed that all individuals are completely informed about the larger circumstances of their actions, that they can calculate the relations between their goals and the means that they choose to achieve them. They also assume that their economic goals can be completely expressed in terms of money—the only measure incorporated in the world view of most economists. As a corollary to the exclusive use of money is the presupposition that money is a measure of happiness and that there is a direct correlation between the amount of money one has and his happiness or her happiness, something not supported by most empirical research for money beyond a certain threshold (Kate4Kim, 2018). (The male pronoun is used because most of the presuppositions of economics as with the other sciences, at least until recently, have been products of the male brain.)

10. Biology and Society

In Darwin’s account of evolution there is no role in the alteration of the environment played by the species themselves. Now in the 20th century there appears the argument that the species themselves may play an important role in changing the conditions that would require genetic adaptation. This is the argument given by Levins and Lewontin in their book *The Dialectical Biologist*, and it adds an important dimension to the Social Darwinian argument embodied in the idea of predatory individualism.

Meanwhile, sociobiologists such as E.O. Wilson (1975) believe that human behavior can be reduced to biological terms and thus elaborated in the form of 19th century physics with a Darwinian twist: “Sociobiology is defined as the systematic study of the biological basis of all social behavior” (Appleman, 1979, p.446) and “If the decision is taken to mold cultures to fit the requirements of the ecological steady state. . .” (p.458). There is no reference here as to *who* is going to mold these cultures—could it be scientist-social engineers such as himself? Or, “If the planned society—the creation of which seems inevitable in the coming century...” (p.459). Again, there is no mention of who is to plan this future society, thus possibly betraying an anti-democratic mentality, something against which thousands of protests were launched in the 1960s and continue until today.

Others, such as Herbert Spencer and his Social Darwinist followers, believed that the highly competitive and predatory system that has marked the history of industrial capitalism

was compatible with Darwin's understanding of nature. The wealthy banker or businessman was nature's way of establishing who was the fittest and most justified to survive. This is unlike Mark Twain, who believed that "A banker is a man who loans you an umbrella when the sun is shining and demands it back the moment it looks like rain." Ironically, these are now the very people who, it could be argued, are driving humanity to possible extinction either through the rational exploitation and devastation of nature, or through climate change and/or through the possibility of a catastrophic nuclear war. *Their individual "genetic" survival is threatening the survival of the entire species of Homo sapiens.*

11. A New Biology and a New Science

This in no way contradicts the findings of Darwin but it does suggest that something more than Darwinism in its subsequent sociobiological interpretation is required to understand human behavior and to guide its possible evolution into a viable social form.

At least, this is what is proposed by Willis Harman and Elisabet Sahtouris (1998) in their book, *Biology Revisioned*. They argue that all things in nature have a form of consciousness, and that nature is evolving through the intentional actions of its very parts, ranging from the prokaryotes to cells, tissues, organs and organisms to societies and the earth as a whole (See also Matloff, 2016). The evolution of this hierarchy is seen in the development of structures or holons as Koestler calls them, to suggest that these structures are a product of conscious efforts on the part of those parts to create something new in nature which is not reducible to those parts. This same idea was put forward by Piaget (1970) who suggested that (holistic) structures are a product of assimilation and accommodation, so that for him the important thing to focus on was the process of structuring, in addition to the structures themselves. Thus, rather than claiming that brain structures necessary for language development are simply innate, as Chomsky had suggested, he claimed that they are constructed over time in the evolutionary process whereby *Homo sapiens* itself was constructed.

The appearance of these structures or holons as something more than the sum of their atomistic parts necessarily poses the question of how this process would take place if not as the result of some sort of consciousness and intention. Since these holons are universally present in nature and society, then consciousness and intention must also be present universally. This is the ontological claim of Harman and Sahtouris, and they supply multiple examples by numerous scientists to support their claim. This, of course goes against the prevailing doctrine of a physics-based biological science, and if Kuhn is correct this should lead to a lengthy battle between the two visions of biology.

Meanwhile, 20th century physics has produced a quantum view of physical reality, one which sees all the elements of nature as connected or in communication with each other. This is accompanied by the conviction that the viewing of reality by the scientists, themselves, actually changes that reality. What happens to these connections at a more macroscopic scale and to the claim for an outside "objective" view of nature is currently being struggled with (or put aside) within the science of physics itself. Adam Frank et al (2019) suggest that this has led to a "Blind Spot" in science. Thus, a revisioned view of science would lead to several changes:

In general terms, here's how the scientific method works. First, we set aside aspects of human experience on which we can't always agree, such as how things look or taste or feel. Second, using mathematics and logic, we construct abstract, formal models that we treat as stable objects of public consensus. Third, we intervene in the course of events by isolating and controlling things that we can perceive and manipulate. Fourth, we use these abstract models and concrete interventions to calculate future events. Fifth, we check these predicted events against our perceptions. An essential ingredient of this whole process is technology: machines—our equipment—that standardize these procedures, amplify our powers of perception, and allow us to control phenomena to our own ends.

The Blind Spot arises when we start to believe that this method gives us access to unvarnished reality. But experience is involved at every step. Scientific models must be pulled out from observations, often mediated by our complex scientific equipment. They are idealizations, not actual things in the world... all of these exist in the scientist's mind, not in nature. They are abstract mental representations, not mind independent entities...

So, the belief that scientific models correspond to how things truly are doesn't follow from the scientific method. Instead, it comes from an ancient impulse—one often found in monotheistic religions—to know the world as it is in itself, as God does. The contention that science reveals a perfectly objective 'reality' is more theological than scientific.

Therefore, the claim by a revised biology for consciousness in nature is given support by this new quantum physics. Indeed, there are at least two good reasons, among the many presented in the book by Harman and Sahtouris, to accept the hypothesis that there is consciousness throughout all of nature. One is the question of how there could be quantum connections throughout nature without some sort of consciousness to make these connections possible. Thus, quantum connections at the microscopic level cannot just disappear at the macroscopic level. These connections may well account for the fact that nature is organized, and that organization is somehow beneficial to the elements of nature; it allows nature to function and to give the appearance that it is governed by "natural laws". Sheldrake (2011) claims that these "laws" are a product of habitualized actions accumulating over time, exactly as claimed by phenomenologists for the appearance of order in society (Berger and Luckmann, 1991).

Meanwhile, these insights about wholeness were already apparent in biology in the 19th century. Skillings (2019) refers to Sir Kenelm Digby who

...thought of animals as intricate automata, and like a machine, the behavior of an animal could be caused only by the underlying order and actions of its parts. But what is it that unites the parts of a system into a living individual? . . . there must be something that turns a system into an independent and genuine whole [Holon?], rather than just a set of parts 'artificially tied together'. Digby's answer was to say that the wholeness comes from the system being functionally interdependent and integrated (author's emphasis). That is, the activities in one part of the system are

brought about by a cause external to the part where it occurs (interdependence); and the mutual workings of the parts account for the behavior of the system as a whole, making this activity internal to the entire system (integration).

And,

Evolution teaches us that no organism was ever cut from whole cloth or brought into being out of nowhere. At some point in history, independent cells must have changed so as to stick together and then evolve as a collective... This is what [Julian] Huxley called... the transformation of individuals into a higher-level individual [Holon?].

“We as human individuals must transform into a higher order “individual”, a new structure or holon, based on “interdependence and integration”, while preserving our ethnic, cultural and/or religious individualities.”

But there is no explanation by either of these 19th century philosophers nor by Skillings, himself, about how and why these transformations take place. Harman and Sahtouris (1998) are suggesting that these transformations are a product of consciousness and intention. Yet, even today, according to Frank, et al (2019):

“...physical science—including biology and computational neuroscience—doesn’t include an account of consciousness... On the other hand, if ‘physical reality’ means reality according to some future and complete physics, then the claim that there is nothing else but physical reality is empty, because we have no idea what such a future physics will look like, especially in relation to consciousness”.

Thus, the claim that consciousness and intention are part and parcel of the entire universe is not unfounded. This must, in any case, be true for society and its human elements, something which is more or less ignored by an adherence to the model of 19th century physics in a good deal of social science, especially economics.

The question then arises as to whether a revisioned biological science might have important implications for the social world, a world that is troubled by so many apparently irresolvable problems, which range from the currently unworkable casino-like economic system to a highly alienated population trying to find the meaning of life while residing in that system. Indeed, a universe governed by consciousness would provide a model, a much-needed *vision* for helping us transcend our current social, economic and, indeed, philosophical impasse. It is in this sense that all human behavior is “voluntarist”, since it is always intended and prompted by a conscious belief that what it intends will come true, with no margin for misunderstanding and the possibility of unintended consequences. We as human individuals must transform into a higher order “individual”, a new structure or holon, based on “interdependence and integration”, while preserving our ethnic, cultural and/or religious individualities, just as the parts of the human mind-body, do within its holistic totality. We

must transcend our (Darwinian) competitive stage and evolve into a new cooperative form. This is not fantasy. Indeed, we must move beyond the *Turning Point* (Capra 1982), using a *Biology Revisioned* (Harmon & Sahtouris 1998) and *Spontaneous Evolution* (Lipton & Bhaerman 2011), as well as the *Moral Molecule* (Zak 2012) and *Our Moral Minds* (Hauser 2006) to become *Super Cooperators* (Nowak 2011) and enter a holistic or even *Holographic Universe* (Talbot 1991).

Or we can just sit around and wait until we can no longer breathe, or until some emotionally unstable fanatic pushes the button and turns us all into radioactive dust, while cleaning out the stables until some new, more intelligent species replaces us in a future world yet to come.

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