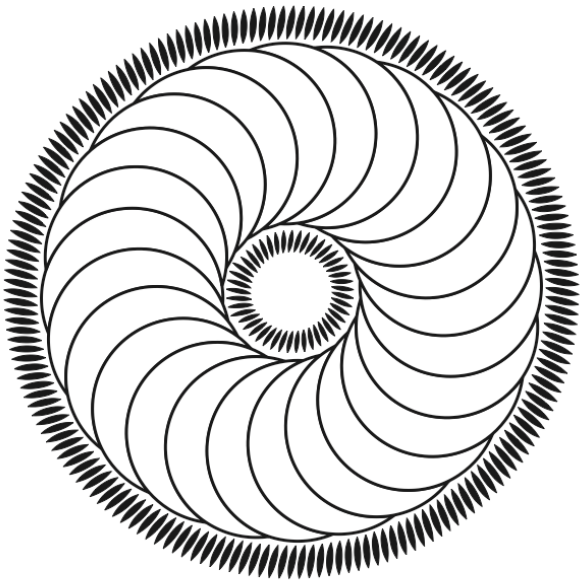

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Sommaire — Contents

Ethics, Economics and Civilization: Why a New Metaphysics and a New Socio-Economic Order are Required to Rescue Ethics?

Arran Gare [1]

The disquieting suggestion made by Alasdair MacIntyre in the introduction to *After Virtue* was that:

> in the actual world which we inhabit the language of morality is in [...] grave disorder [...]. What we possess [...] are the fragments of a conceptual scheme, parts which now lack those contexts from which their significance derived. We possess indeed simulacra of morality, we continue to use many of the key expressions. But we have—very largely, if not entirely—lost our comprehension, both theoretical and practical, of morality. [2]

MacIntyre suggested that this situation was the result of a cultural catastrophe, a catastrophe we are blind to because academic history, being only two centuries old, arose after it had occurred.

To justify this claim, MacIntyre showed how English ethical philosophy had culminated in emotivism, the view that moral utterances are just expressions of emotion designed to align the attitudes, feelings, preferences and choices of another with one's own. He pointed out that if this is true, moral conflicts are nothing but conflicts of will, and he showed how prevailing ethical doctrines, rights theory and utilitarianism, are in fact nothing but rhetorical exercises which provide no means to arrive at a consensus. Furthermore he argued that emotivism amounts to nothing more than the recognition by academics of what Kierkegaard and Nietzsche had recognised earlier, that the enlightenment project to provide an ethics to replace medieval ethics formulated on the assumption of a teleologically ordered cosmos in which humans had a potential to realize, had failed. With the seventeenth century revolution in science establishing a mechanical view of the world and excluding the notion of potentiality from rational knowledge, reason could no longer provide a guide to action. MacIntyre's proposed solution is to return to the earlier forms of ethical thinking deriving from Aristotle that had been elaborated in medieval society, to an ethics centred on virtues, in accordance with the original meaning of morality and ethics, as pertaining to character.

MacIntyre's critique of the present state of moral discourse is entirely justified as far as philosophy is concerned, and there is much to commend his call for a revival of a doctrine of virtues. However, the problematic status of ethics is more deeply rooted than MacIntyre appears willing to acknowledge, and a more radical solution is required to overcome the crisis of ethics.

MacIntyre was looking in the wrong place for ethical discourse in society, perhaps partly because the effective ethical discourse implies that egoism and

using others as mere instruments, are now considered virtues. In our society it is not the philosophers who provide the ideas which define right and wrong action or ways of living, but the economists and their offsiders, the psychologists. Economics, purporting to be a positive science, is nothing of the kind. Rather economists, along with mainstream psychologists, are the people who work out what the prevailing cosmology implies about how people should behave and live and what virtues they should cultivate. And in so doing, they, unlike ethical philosophers, are enormously influential. Virtually every sphere of public and private life is constrained to accord with the ideas of the economists and psychologists. To deal with questions of ethics in the modern world it is necessary to become an economist or a psychologist, or at least take the work of economists and psychologists as one's point of departure. If there is a moral crisis in the modern world, it is in relation to these disciplines that it must be found and resolved. When these 'ethical theorists' are properly understood, their way of thinking appears to have much in common with medieval thought on ethics which MacIntyre is concerned to revive. Modern thinking in this regard is a structural transformation of medieval Neoplatonism, and continues the tradition of defining the good as what is, as 'being', as opposed to what is 'becoming'. Both medieval ethics and modern economics and psychology appear to have a common source in ways of thinking which have been extraordinarily oppressive. If this is the case, then an entirely new form of ethical thinking is required.

The evaluative nature of economic thought is immediately evident on the slightest reflection. Not only are the concepts 'economic progress', 'GNP per head of population', 'economic' and 'uneconomic', 'profitable' and 'unprofitable' and 'economically efficient' among the most important concepts of evaluation in modern society; how people should live is represented in the image of 'economic man', the most important index for judging society as a whole is its economic growth rate, and all life-forms are judged according to their contribution to this. Even when economic concepts are not evaluative their use immediately relates things and people to an evaluative context. For instance to see anything as a resource is to see it as something economically useful which should be exploited as efficiently as possible. In this ethical role economics is followed by psychology with its notions of 'abnormal', 'subnormal', 'neurotic', 'deviant', 'inadequate personality' etc. defining negatively the positive ideal of the 'psychologically healthy' person: the normal, contented, efficiently functioning cog within the economic system. If it is impossible to justify an action or any form of life in terms of these concepts, whether this be a broad based education in the humanities, wilderness areas, unique eco-systems and species, or peasants in the Third World occupying land which could be used for cash crops, then their chances of survival in the face of economic progress, in the face of the necessity to use resources efficiently to increase GNP per head, is very limited. Biologists provide the broader framework for these concepts in Neo-

Darwinian evolutionary theory, with the notions—'fitness for survival' and 'survival value' of organisms being the ultimate concepts of evaluation. Finally, this conception of life is justified by the mechanical view of the world promulgated by the mainstream of physical science.

However, the significance and standing of these economic concepts cannot be properly understood on their own. To make sense of the way things are evaluated in modern societies, why these evaluations have the power to bind people, it is necessary to understand their roots in the cultural revolution which gave rise to philosophy, particularly the philosophy of Plato, in Ancient Greece. It is necessary to see how Platonism was reformulated in its association with Christianity and through its role in the cultural struggles of the Middle Ages, how Christian Neoplatonism was transformed into the mechanistic world-view, and then how economic thought was developed in accordance with this world-view. [3]

Greek philosophy was the product of a cultural crisis, and can only be fully understood as an answer to it. [4] Prior to the development of philosophy, the universe was seen by the Greeks as a structural analogue of monarchical order with a hierarchy of powers reflecting differences in function, value and rank. In this scheme of things order did not emerge from the play of elements but was established through the dramatic efforts of an agent, in the case of Greek mythology, Zeus, who then maintained this order through his exceptional powers. This was associated with a dual notion of becoming. The early Greeks had no sense of time independent of occurrences; time was the occurrences themselves. But there were two types of occurrences: the sacred and the profane. Sacred occurrences, the time of the gods, was seen to fold back on itself to be relived as the eternal present, as eternal recurrence. Profane occurrences on the other hand were the time in which nothing recurs and everything passes away. But sacred time was constantly woven into profane time, not only through festivals, but through the constant intervention of the gods in people's lives. Emotions, sudden changes in fortune, spurts of energy and so on were generally attributed to the intervention of the immortal gods, and this raised them to a different plane of significance as sacred events beyond profane occurrences.

The first ethico-political conflict was associated with the increasing importance of hoplite soldiers in warfare relative to the aristocratic charioteers, and correspondingly, with the rise in power of the lower classes. The associated ideological conflict was initially expressed in mythopoeic form through the retelling or rewriting of myths. However as society had been transformed from a monarchical order into a more democratic form, this realm of mythical thought ceased to convey social realities or correspond to ritual practices, giving the Greeks a critical detachment from such thought and the values expressed by it. In the ensuing ideological battle, a number of Greek thinkers: Hekataios, Pherekydes, Hellanikos, Xenophanes and Ephoros among others effectively destroyed sacred time by translating Greek myths into profane time, transforming mythical figures by presenting them in

genealogies and then developing a system of dating the different mythical events. This virtually reduced the mythical realm to fairytales, and destroyed the force of the ethical imperatives it embodied. The polis itself became the sole locus of the sacred. Distinguished from the realm of economic necessity and the household, it became the realm in which people strove to achieve eternal glory through their words and deeds. [5]

The ideas advanced by the first philosophers can be understood as the development of a new orientation to the world by using the new democratic social relations as an analogy for interpreting the world as a whole, thereby legitimating these relations. As Jean-Pierre Vernant argued:

> In constructing their cosmologies, they made use of ideas elaborated by moral and political thought, projecting onto the world of nature that conception of order and law whose success in the city had made the world a cosmos. [6]

This is most clearly evident with Anaximander. Anaximander rejected the idea that the order in the world was imposed and maintained by an agent and argued that the principles which govern the cosmos are immanent in the world, corresponding to the self-ordering of the polis. Similarly he argued that the earth could stay at rest without external support or roots because it is equidistant from all points on the celestial circumference and so has no more reason to sink than to rise, or to move to one side rather than another. No longer was any portion of the world to be privileged at the expense of the rest, or a physical power to be in a dominant position. An equilibrium is maintained through a regular cycle in which each force alternately prevailing and then falling back in accordance with justice, linking together expansion and contraction, strength and weakness, birth and death. It was this equality and symmetry of powers that made up the cosmos that characterized the new conception of natural order, and supremacy belonged exclusively to the law of equilibrium and continuous reciprocity. As Vernant put it: '*Monarchia* was replaced, in nature as in the city, by the rule of *isonomia*.' [7] Heraclitus can be seen as defending and continuing this tradition of thought. [8]

The triumph of democracy produced a conservative reaction, generating a struggle by philosophers to resacralize life and to find an immutable foundation to orient themselves and to establish their ideals about how life should be lived in a realm transcending the polis. The ensuing intellectual effort was largely directed to producing a new notion of knowledge which would simultaneously provide access to the sacred, and provide an orientation for action. The paradigmatic form of knowledge for the Greeks was that which was actually being perceived. To reorient themselves the Greeks searched for something omni-temporal or eternal, outside the flux of becoming, which being knowable always, could enable them to get their bearings. [9] Pythagoras offered a solution to this problem by proposing numbers as the real and investing them with a sacred significance. Following Pythagoras, Plato argued for the existence of forms as an eternal order of

being, knowable omni-temporally, although only to an elite, which could provide a guide to action and be seen as the source of the significance of the world. Plato saw people as having two types of knowledge: one of how to do something without having any intellectual apprehension of what is to be achieved, as with the poets, and a higher form typified by artisans who have an image of what they are trying to make, that is, an intellectual apprehension of the form to be achieved. [10] He presupposed a world in which things are in the process of becoming and he believed that to have attained such an intellectual apprehension of a form is to have begun the process of actualizing or participating in this form. Therefore the most important task confronting the philosopher is to find the true definitions of the forms, particularly the form of humanity. Plato assumed that all forms, as with mathematical concepts, can be defined unambiguously. The true forms can be discovered by a process of analysis and synthesis, and like the axioms of mathematics, the ultimate form, the Good, contains all the other forms implicitly. The forms are in hierarchical order extending from the highest form, the Good, downwards.

Plato argued that justice can be defined as the appropriate ordering of relationships between parts. He argued that the human Soul must consist of three parts: reason, spirit and appetite, since only if this were the case could the conflicts within oneself be explained. [11] Justice in the individual is achieved when the higher rules the lower, where reason, the immortal part of the Soul through which the eternal forms are apprehended, rules the spirit and spirit rules the appetites. The apprehension by the individual of the true definition of justice was seen to motivate the individual to participate in this form. At the same time Plato constructed his idea of the just society, the *Republic*, that is, the form which he believed all societies should be striving to participate in, in accordance with this idea of justice. Society was seen as divided between those people whose reason is dominant, those people whose spirit is dominant and those people whose appetites are dominant. A just society was held to be one based on the principle 'that everyone ought to perform the one function in the community for which his nature best suited him',[12] one in which the wise rule and those dominated by their appetites are subordinated.

By seeing the world dualistically in terms of being and becoming, and seeing being interwoven in the world of becoming through the participation of the sensible world, and particularly of intelligent beings, in the forms, Plato was able to replicate the dualism of early Greek thought between the realm of the sacred and the realm of the profane, and to see participation in eternal forms as equivalent in significance to the sacralization of profane life.

While people have changed their ideas about what the real forms are, despite challenges, the basic Platonism of Western culture has remained virtually unchanged up to the present, except that Neoplatonists accentuated the transcendental status of the forms and their value, thereby devaluing the changing, sensible world, while an historical dimension was added by

Christianity. The synthesis of Greek and Hebraic thought involved the identification of the ultimate form, the Good and the Parmenidean One of Greek philosophy with the Deity of Hebraic thought, the sensible world of becoming with the fallen world and the realm of forms with the restored world. According to St Augustine's doctrine, the division within humans between the corporeal and the spiritual natures was interpreted as a division between the bestial and the rational, between evil and good. The sensible world was to be contemned and treated purely as a means to gain salvation. As Augustine put it:

> among all these things only those are to be enjoyed which we have described as being eternal and immutable; others are to be used so that we may be able to enjoy these. [13]

Augustine then interpreted the struggle between the corporeal and the spiritual, between the temporal and the eternal, in historical terms in accordance with the Hebraic element of Christianity. He saw the whole of humanity advancing in a linear progression from the corporeal to the spiritual. This advance was seen as being due to the creativity of humanity, but its end was seen to be away from the changing sensible world. As he wrote in *The City of God*:

> The education of the human race, represented by the people of God, has advanced, like that of an individual, through certain epochs, or, as it were, ages, so that it might gradually rise from earthly to heavenly things, and from the visible to the invisible. [14]

St Augustine more than anyone else provided the philosophical foundations on which early medieval thought and medieval society were erected, and through St Augustine, the Platonist conception of action became all pervasive. From the beginning of the Middle Ages people conceived themselves as involved in a struggle to establish the presence of the eternal world within the world of change. This way of thinking was evident in the development of political philosophy, in the development of law, [15] in development of casuistry, and in the development technology.

To begin with, a hierarchical conception of the cosmos was used to legitimate a hierachical social order. Initially the emperors promoted the church to legitimate their own power, but the church, once it was firmly established, used its symbolic power to subordinate temporal rulers to the church. Power was represented as flowing downwards through the pope, the kings and lords to the lower orders. But to orient people for action, an ideal form of society which people could strive to participate in was postulated. The body, conceived in accordance with the structure of the cosmos itself, provided such a form. A typical characterization of this was given in the twelfth century by John of Salisbury:

> The place of the head in the body of the commonwealth is filled by the prince, who is subject only to God and to those who

> exercise His office and represent Him on earth, even as in the human body the head is quickened and governed by the soul. The place of the heart is filled by the senate, from which proceeds the initiation of good works and ill. The duties of the eyes, ears, and tongue are claimed by the judges and governors of provinces. Officials and soldiers correspond to the hands. Those who always attend upon princes are likened to the sides. Financial officers and keepers…may be compared to the stomach and intestines…The husbandmen correspond to the feet…[16]

The hierarchically ordered body thus functioned as the form to which society should be made to conform, and everyone was called upon to act according to their place in this political order.

The Platonist conception of action was further elaborated in casuistry, the systematic effort to work out how people should act and live which emerged with the development of the confession. Benjamin Nelson wrote of the casuists:

> Solutions for the conduct and regulation of man's life and all his relations in the market place, in the battlefield, the court, the home and elsewhere, were… developed in innumerable treatises on the cases of conscience. All the urgencies of life and the aims of men as they moved about in the daily lives were indeed grist for the mills of the casuists. [17]

These solutions were not arrived at by applying general principles, but by referring back to the nature of the cosmos and the place of humans within it, and in this way, the medieval world-view was articulated into daily life.

The Platonism of the casuists was exemplified in the code of conduct developed for the aristocracy. [18] The aristocracy was the warrior caste called upon to undertake the defence of Christianity, to wash their sinful hands in the blood of infidels, and a code of conduct had to be developed for their role in society. The code of chivalry was the outcome of this Christianization of military behaviour. In accordance with Neoplatonist philosophy, right and wrong conduct were understood in terms of participation in forms, and individuals were only seen to be significant in so far as they transcended their bestial nature by participating in the forms of virtue affirmed by chivalry. People were always defined in the aristocratic chronicles in six or eight adjectives and their contraries, and no other possibilities were allowed for. Men were valiant, courteous, prudent, and so on, or they were cowardly, discourteous and reckless. Women were beautiful, charming and discreet, or their opposites. The feudal code was directed towards fostering the achievement of honour which, in the case of males, was to be pursued positively and aggressively through military action performed in the prescribed manner. In fact it was only in so far as people participated in the ideal forms defining aristocratic honour that they could be considered to be

fully 'real'. People who stood outside the circle of values defining human significance had only a shadowy existence in the eyes of the aristocracy, and they were treated accordingly. This was illustrated by the way non-combatants in battles were generally slaughtered, not out of any real malice, but because they were considered so insignificant. Thus at the famous battle of Limoges, three French knights who had especially distinguished themselves in individual action were seen by the Black Prince who 'looked on them with pleasure, and he repressed and softened his ill-will.' [19] These knights were allowed to surrender and were presumably spared, while 3,000 men, women and children were slaughtered. As William Brandt wrote of this incident: 'In the midst of incredible carnage to which the Black Prince was apparently totally indifferent, three knights by their honourable stance touched the Prince where mere suffering never could.' [20] Such behaviour on the part of aristocrats was normal.

The historical dimension of medieval Christianity was given different interpretations by different people. On the one hand, and consistent with St Augustine's philosophy, it was seen as the progressive rejection of the corrupt world. But an alternative formulation of this led to the view of history as leading to the transformation of the world to accord with the ideal forms of how things should be. This alternative had both its moderate and radical exponents, the radicals seeing the final stage of history as the creation of heaven on earth. [21] The moderates who had the most influence, first in the monasteries, then later in secular life, saw transforming nature as participating in God's creation by reforming it to make it closer to what it had been before the fall. [22] It was this which led to the celebration of work and technology, and the elevation of the virtue of temperance from the least to the most respected of the seven virtues. [23]

With the revolution in thought which began during the later Middle Ages with the development of this more radical form of Platonism and the revival of Aristotelian thought, further advanced in the Renaissance with the development of Civic Humanism and Nature Enthusiasm associated with the revival and defence of republicanism and democracy, and consolidated with the Reformation associated with the struggle by territorial kingdoms to break away from the control of the church and of townspeople and peasants to gain power at the expense of the feudal nobility, it might appear that the original Christian Neoplatonism and its associated Platonist conception of action had been abandoned. With the development of nominalism and the denial of reality to universals, the ideal forms which had defined human significance for the aristocrats, were treated as immanent rather than transcendent or lost their ontological status altogether. As Shakespeare has Falstaff say in King Henry IV:

> Honour pricks me on. Yea, but how if honour prick me off when I come on? how then? Can honour set-to a leg? No. Or an arm? No. Or take away the grief of a wound? No. Honour has no skill in surgery, then? No. What is honour? A word. What is that

word, honour? Air. [24]

During this period there was a real challenge to what Whitehead later characterized as the 'fallacy of misplaced concreteness', the reification of abstractions and the concomitant devaluation of sensory experience of nature and of people's lives. Allied with the quest for liberty, this established an enduring tradition of thought, the 'Radical Enlightenment', that has been a major influence on all aspects of modernity. [25] Associated with the liberal arts and humanities in education and non-reductionist developments in science, it has been the source of the drive for democracy, justice and freedom from servitude, oppression and exploitation that were successfully advanced up until the third quarter of the twentieth century. It was really the source of the virtues the decay of which MacIntyre was lamenting.

However the dualism between forms and the sensible world which had been argued for by Plato and accentuated by the Neoplatonists, serving to legitimate the domination of society by ruling classes, had come to structure the whole culture of Western civilization. There was a reaction against the radical Neoplatonism, Aristotelianism, Civic Humanism and Nature Enthusiasm that had brought this dualism into question. All that really occurred was that the forms defining human significance were changed. The medieval forms of virtue such as valour, courtesy, prudence and honour lost their status, but were replaced by the purely numerical form of money. Only that which could be valued in terms of money was thenceforth seen to be significant. The most highly valued things came to be those which maintained their value, and these became the goal of economic activity. As the seventeenth century economist William Petty wrote: 'The great and ultimate effect of trade is not wealth as such, but preferably an overabundance of silver, gold and jewels, which are not *perishable*, not as *fickle* as other commodities, but are wealth in all times and all places.' [26] The continued connection between this concern for immutable forms of wealth and orthodox Neoplatonic Christianity is most clearly evident in Protestantism. Luther generalized the notion of vocation to secular life, and Calvin regarded the notion of vocation as applicable to business. But the notion of a vocation did not lose its religious roots. As Marx wrote: 'The cult of money has its asceticism, its self-denial, its self-sacrifice—economy and frugality, contempt for mundane, temporal and fleeting pleasures; the chase after the *eternal* treasure. Hence the connection between English Puritanism, or also Dutch Protestantism, and money making.' [27]

With this development nature came to be regarded as significant only insofar as it could enter the realm of monetary relations as a resource. Relationships between people came to be seen as significant insofar as they were monetary relationships, and people came to be defined in terms of their money. As Marx pointed out:

> That which exists for me through the medium of money, that which I can pay for…that am I, the possessor of the money. The

> stronger the power of my money, the stronger am I. The properties of money are my, the possessor's, properties and essential powers. Therefore what I am and what I can do is by no means determined by my individuality. I am ugly, but I can buy the most beautiful woman. Which means to say that I am not ugly, for the effect of ugliness, its repelling power, is destroyed by money… I am a wicked, dishonest, unscrupulous and stupid individual, but money is respected, and so also is its owner. Money is the highest good, and consequently its owner is also good. [28]

Anything outside the realm of money has come to be denied full reality and significance, just as in the Middle Ages, anything outside the realm of the forms of the aristocratic virtues was not considered to be fully real by its ruling class.

Money has not stood alone in this regard, however. It is complemented by the ideal of the machine. The analogy of the machine has always been more than just a means to comprehend the physical world. The machine represents the means for achieving the subordination of nature, while at the same time the already existing total subordination of nature. The mechanistic analogy reveals those aspects of the world which are relevant to its subjugation, but at the same time implies a deterministic world without potentialities which could be actualized. It oscillates between representing human consciousness as separate from the mechanical order of things and therefore totally free to act at will to transform the world, and as machines totally determined by the laws of nature. The machine symbolizes power over the world and corresponds to Plato's form of the Good as the ultimate end of action. This mechanical order as an ideal to be attained is a persistent feature of modern European thought, from the representation of the virtue of temperance with a clock in the fifteenth century to the modern ideal of the corporate State regulated through the efficient processing of information to ensure the total subordination of all functions to instruments of the economy, the process by which external nature is brought under control. In short, the machine represents total power as the ultimate end while denying both intelligibility and meaning to this end. But this ambiguity is simply the result of taking the Platonic rejection of becoming in favour of being to its conclusion. The effective ethics continues to be understood as the struggle to make being, transparent to the intellect, prevail over becoming.

This is illustrated in the philosophy of Hobbes. The elaboration of the mechanical model of humans and of society to accord with the mechanical view of the world was begun by Hobbes, who used first the analogy of a watch to conceive the body and the analogy of a mechanical body to represent society and its members. Since according to the analogy of a machine the driving principles of the constituents of society have to be understood independently of society in order to explain it, individuals have to be seen as moved entirely by self-interest. The conception of individuals as

self-interested was justified by seeing them as mechanisms, since as such, by the very fact of their existence they must be seen as arrangements of matter organized to maintain themselves. Thus Hobbes inverted Plato's scheme in which the appetites are properly subordinated to spirit and spirit is properly subordinated to intellect. For Hobbes, appetites and aversions define the ultimate end. Striving for status and social position is only a means to satisfy appetites, and reason is simply a calculating instrument in the struggle for such means. Hobbes is deceptive, however. The account of humans as machines is presented as an explanation of society; but it clearly functions as the ideal omni-temporal form which people and society should be striving to participate in, revising the medieval notion of society. It is when people conform to the ideal form of the rational, self-interested machine that religious and political strife will end and the body politic will function peacefully and efficiently as a good machine should.

While the most influential political doctrines since the seventeenth century: social contract theory, utilitarianism and Social Darwinism all have their origins in Hobbes, it has been the economists inspired by Hobbes who have been by far the most influential thinkers. All modern economics derives from Chapter 24 of the *Leviathan* in which, following Harvey's theory of the circulating blood, money was represented on the analogy of blood distributing nutrients through the body of society. This created the economy as both a theoretical object to be studied, and as an ideal form to conform to. As such, the economy is a mechanical body controlling nature, distributing the products of industry, and thereby reproducing itself, and what is good is what serves the functioning of this machine.

The first economist to be influenced by Hobbes was Petty who in turn influenced Cantillon, the Physiocrats and Quesnay. However it was Smith in his *Wealth of Nations* who developed the notion of the economy as an object of investigation in its own right to such a stage that it could become the primary means of representing society to its members. Smith took scientific theories to be means of organizing sense impressions. In his study of the development of astronomy he compared such theories to imaginary machines which are 'invented to connect together in the fancy those different movements and effects which are already in reality performed.' [29] Descartes and Newton were held to have discovered this new method of explaining nature, and Smith attempted to model his study of the economy on the new mechanistic form of astronomy, as a disinterested search for the simplest imaginary machine to account for the phenomena. He thus further elaborated on the ideas of society as a machine, and presented the image of 'economic man' as a sober egoist.

This image of the economy was presented as a model of reality and that of humans as a universal characterisation of human nature; but surreptitiously both these images function in his system as Platonic forms of how society should be and how individuals should act to realize the ideal form of

society. [30] This is no accident; it was clearly recognized as such by Smith who, strongly influenced by Plato, had argued in *The Theory of Moral Sentiments*:

> if you would implant public virtue in the breast of him who seems heedless of the interest of his country, it will often be to no purpose to tell him, what superior advantages the subjects of a well-governed state will enjoy… You will be more likely to persuade, if you describe the great system of public police which procures these advantages, if you explain the connexions and dependencies of its several parts, their mutual subordination to one another […] if you show how […] all the several wheels of the machine of government be made to move with more harmony and smoothness, without grating upon one another, or mutually retarding one another's motions. [31]

A good machine is one which functions efficiently, and for the economic machine to function efficiently individuals must accord with the image of humans presented by Smith. Thus idleness, profligacy and unproductive spending were seen as vices and attributed to the royal courts and their aristocratic retinues while industry and thrift were continually praised.

Smith gave rise to the classical tradition in economics which reached its high point in Ricardo. Conforming to Cartesian physics, classical economics was based on the identification of an unchanging substance, value—defined by labour time, which undergoes various transformations as it moves through the economic machine. This enabled economics to affirm the notion of rights based on social contract theory—people have a right to the products of their labour. However with further advances in physics, economic theory was reformulated. In 1871 classical economics was challenged by the neo-classical marginalist school which defined value entirely in terms of the subjective decisions or preferences of individuals. Neo-classical economists were committed to utilitarianism and to developing economics as 'the mechanism of utility and self-interest', as Stanley Jevons put it. [32] This facilitated the further elaboration of the conception of society as a mechanism. As Jevons noted:

> The Theory of Economy thus treated presents a close analogy to the science of Statical Mechanics, and the Laws of Exchange are found to resemble the Laws of Equilibrium of a lever as determined by the principle of virtual velocities. The nature of Wealth and Value is explained by the consideration of indefinitely small amounts of pleasure and pain, just as the Theory of Statics is made to rest upon the equality of indefinitely small amounts of energy. [33]

In this scheme, agents were classified as consumers or producers and assumed to have 'tastes' or 'goals' which, subject to certain constraints, they would seek to satisfy to the maximum. These ideas were elaborated in terms

of the ideas of the new physics of Lagrange and Hamilton. In Hamilton's physics the total energy of a system was represented as dependent in a critical way upon the position of the mass-point. [34] Position was defined in terms of a gravitational field, later identified as potential energy, which was described by partial differential equations with the sum of potential and kinetic energy taken to be conserved within a closed system. This conservation law then served as the foundation for constrained maximization techniques to calculate the paths of mass-points under the influence of impressed forces. Adapting this scheme to economics, forces were redefined as prices, displacements as infinitesimal changes in the quantities of individual goods, gravitational potential energy as utility, and kinetic energy as expenditure. Constrained maximization or minimization of an imponderable quantity, 'utility', led directly to a conservative field, which in turn was seen to fix the permissible configurations of prices.

It may be thought then that the new notion of economic man of neo-classical economics no longer prescribed the form individuals should conform to. There was no attempt to analyse the content of tastes, goals or constraints. Positive economics appeared to have become a genuinely mathematical science without any hidden evaluation. But the whole idea of an individual calculating how to maximise his or her subjective pleasures in accordance with the model of the neo-classical 'economic man' is an evaluative form, and it was treated as such by Alfred Marshall in his *Principles of Economics*. Again it is how individuals should behave in order for the economic machine to work most efficiently. Economic rationality as portrayed by economists is held up as the ideal of rationality, and anyone who does not act on this basis is irrational, is less then fully human. Or at least is deficient in what is the most important defining feature of humanity. In other words, in terms of economics people are in some sense defective if they do not use everything and everyone as instruments for their own satisfaction.

The significance of 'economic man' was not just its being the form required for the best functioning of the economic machine. The economic machine was seen to be bringing the world under control, making it more predictable and productive, and participating in this form was at the same time seen as contributing to economic progress. Complementing the development of economic progress, Herbert Spencer and his followers were simultaneously elaborating the notion of evolutionary progress as a process of differentiation and reintegration at ever higher levels to culminate the perfectly integrated order of advanced industrial society where people will have evolved to feel happy performing their appropriate functions. [35] Economic progress, developing through the struggle for survival could then be seen as part of evolutionary progress destined to culminate in the creation of society as the perfect machine. And as the evolutionary notion of progress provided the secular equivalent of the Christian notion of historical progress, being wealthy became the equivalent of being one of the elect, with participation in the form

of money replacing participation in the form of Christian virtues as the defining criterion of election.

This general framework was developed and elaborated by reformulating all social life to accord with the image of the machine.[36] The scientific management of Taylor involved reducing labourers to cogs whose efficiency could be measured by time and motion studies. But perhaps more significantly, education was conceived of as a mechanical process designed to serve the economic machine. The influential American educator Ellwood P. Cubberley wrote:

> Our schools are, in a sense, factories in which the raw products (children) are to be shaped and fashioned into products to meet the various demands of life. The specifications for manufacturing come from the demands of twentieth-century civilization, and it is the business of the school to build its pupils according to the specifications laid down. This demands good tools, specialized machinery, continuous measurement of production to see it is according to specifications, the elimination of waste manufacture, and a large variety in the outputs.[37]

While originally evolutionary progress was thought of in terms of struggles between individuals and economic enterprises, it soon came to be thought of in terms of the struggle between nations. The struggle between Germany and the United States to take the place of Britain as the dominant world power was the struggle between two nations, both of which saw the world in Social Darwinian terms, with progress understood as the total subjugation of life by mechanical principles. The Thousand Year Reich was aborted, and the United States set about extending its technical control over the world. As Robert Jungk wrote of their project:

> America is striving to win power over the sum total of things, complete and absolute mastery of nature in all its aspects… To occupy God's place, to repeat his deeds, to recreate and organize a man-made cosmos according to man-made laws of reason, foresight and efficiency: that is America's ultimate objective… It destroys whatever is primitive, whatever grows in disordered profusion or evolves through patient mutation.[38]

Since the end of the Second World War the whole programme of understanding the world mechanistically and making the world conform to mechanical principles has taken a quantum leap with the development of information theory and technology. Based on the equation of information with negative entropy as represented by Boltzmann, information theory has been developed as a means to understand life, society and mind, and information technology is being developed at a prodigious pace to control nature, society and individuals. Humans and their organizations are both explained as information processing mechanisms, with information

processing mechanisms held up to them as the highest form of being. Some are anticipating that even the most efficient human processor of information will be found wanting. Marvin Minsky believes that it will be the advance of computers which will be the next stage of evolution.

But here we seem to have a problem, and this is the real moral crisis of Western civilization. Environmental problems have forced at least some people to face up to the fact that the world is not a mechanical order, and trying to force it into a mechanical mould is destroying life. Projecting environmental problems a century into the future suggests that humans are likely to go the way of a great many other species which destroyed the environmental conditions of their existence. What does this mean? Nietzsche, who was strongly influenced by the writings of Boltzmann, recognized the predicament of Western civilization:

> From time immemorial we have ascribed the value of an action, a character, an existence, to the *intention*, the *purpose* for the sake of which one has acted or lived: this age-old idiosyncrasy finally takes a dangerous turn [...]. In accordance with this valuation, one was constrained to transfer the value of life to a 'life after death,' or to the progressive development of ideas or of mankind or of the people or beyond mankind; but with that one has arrived at a *progressus in infinitum* of purposes: one was at last constrained to make a place for oneself in the 'world process' (perhaps with the dysdaemonistic perspective that it was a process into nothingness). [39]

What do our economists have to say about this? A distinguished Professor of Political Economy at the University of London wrote in *Business and Society Review:* 'Suppose that, as a result of using up all the world's resources, human life did come to an end. So what?' [40] This is not an isolated case, and as Robert Heilbroner pointed out, such economists are drawing the rational conclusion from their assumptions.

So where do we go from here? Do we fully embrace nihilism and reconcile ourselves to a social order that will soon destroy the conditions of humanity's existence, perhaps regarding this as creative destruction essential to evolution, possibly with artificial forms of intelligence surviving and developing after the demise of humanity? Or should we look for alternatives? It should be clear by now that the dominant ways of thinking are not just a set of ideas but are embodied in and reproduced by our most powerful institutions and the practices that sustain them. A viable alternative must involve simultaneously cultivating different virtues and transforming the existing socio-economic system. The work of Antonio Gramsci provides some idea of what is required. Reflecting with growing unease on the trajectory of the Soviet Union, Gramsci came to the conclusion that it is only by providing moral leadership that a movement opposing the existing order could bring about such a transformation. To do this while avoiding becoming a mirror

image of what it is opposing, this moral leadership must be based on a different conception of the world. [41] We cannot simply revive an ethics of virtues without justifying an alternative conception of the world and our place within it that can provide the foundation for a social movement able to transform the socio-economic system. Gramsci believed that Marx had provided such an alternative conception of the world, but it is clear that Marx can be interpreted in different ways, and orthodox Marxists assimilated Marx to mainstream scientific materialism. Much more is required. While it is impossible to simply resurrect the Aristotelian cosmology after the triumphs of scientific materialism, developments in philosophy and science advancing the tradition of the Radical Enlightenment do provide this alternative conception of the world. This is the tradition of process philosophy. Developed by Giordano Bruno, F. W. J. Schelling, Henri Bergson, C. S. Peirce and A. N. Whitehead and echoing the ideas of Anaximander and Heraclitus, it provides a new foundation for the natural sciences and economics, and for political philosophy and an ethics of virtues. [42] As the 1977 Nobel Laureate Ilya Prigogine argued in the introduction to his book *From Being to Becoming*, 'we are in a period of scientific revolution—one in which the very position and meaning of the scientific approach are undergoing reappraisal—a period not unlike the birth of the scientific approach in ancient Greece or of its renaissance in the time of Galileo.' [43] This scientific revolution involves recognizing the irreducible reality of becoming, the irreducibility of complexity, and that we as conscious beings are part of the world. The world must be conceived of as a process of creative becoming from which humans, as conscious, reflective agents, have emerged with the capacity to participate in this creation through their activities, their organizations and through the development of their understanding of the world. As Jose Ortega Y Gassett argued, 'The time has come for the seed sown by Heraclitus to bring forth its mighty harvest.' [44]

From the perspective of this conception of the world humanity is not the end point of evolution, but a creative or destructive participant in the becoming of nature. Humans to some extent create or destroy themselves by the theories they hold about themselves and their place in the world and the virtues they cultivate. While this reveals the inadequacy of any correspondence theory of truth, at least so far as social reality is concerned, there are constraints determining which theories can be justified. To begin with, as Bergson argued, creation must be seen as durational. People are melodies singing themselves within a symphony, or stories within larger stories. The ascription of anything's value solely to an end to be realized in the future must then be rejected in favour of a way of thinking in which the value of an action, a life or a society are seen to pertain to different durations, with processes of shorter durations having a significance both in themselves and as part of and affecting the potential of processes of longer durations, and processes of longer durations having a significance both in themselves and as the context which partially defines the meaning and potentialities of

processes of shorter duration. [45] So while wholes have intrinsic value, this is partly by virtue of the intrinsic value of their parts which cannot be regarded as mere instruments serving wholes any more than wholes can be regarded as nothing but instruments serving the parts. Geography, economics, sociology, politics and psychology must all be reformulated in accordance with this way of thinking, as sciences revealing, and partially creating the nature, significance and potentialities of processes of becoming by creating concepts which can mediate in new ways people's relationships to the rest of nature, to their communities, institutions and organizations, to their socially produced environments, and to each other, and define their goals accordingly. [46] This can be achieved by reformulating them as sub-disciplines of human ecology thereby bringing into focus the environmental conditions required for people to realize their full potential and how these conditions can be achieved, sustained, developed or undermined. From this perspective, people should be provided with the concepts to reconceive their lives as the quest to make the best possible contribution in the duration of their lives to the life, and the conditions for life, of their ecosystems, including their human communities, and cultivate the virtues appropriate to this quest.

A society dominated by financial institutions and transnational corporations committed to maximizing their power and profits and an unconstrained global market is a hostile environment for people conceiving the world and their lives in this way and striving to augment rather than undermine the life of their natural and social communities. The social and technological order generated by prevailing assumptions deprives increasing numbers of people of the economic security and autonomy required to function as citizens, effectively reducing them to 'wage-slaves' constantly subject to harm by others on whom they are dependent [47] with only survival and the pleasures of consumption of commodities ascribed any positive value. This is evident in the transformation of universities and other public institutions into business corporations oriented to maximizing profits, transforming students into customers, education into job training and science into nothing but a means to develop technology, while depriving academics, scientists and civil servants of security of employment and of the right to assert themselves and proclaim what they believe is the truth or defend what they take to be just without fear of retribution. This social environment is inimical to people leading virtuous lives except in the sense defined by economists and mainstream psychologists—as efficient rational egoists or sociopaths and thereby as a threat to life. There is very little place for people reflecting on the adequacy of received institutions and beliefs or researching or elaborating ideas not oriented to revealing either how nature and people can be controlled or how the existing social order can be legitimated. As the mechanistic cosmology justifying the domination of nature and people could only emerge and be fully developed in the struggle for liberty against feudalism creating the new socio-economic order of capitalism with its particular organizational forms, technology and architecture, the new ethics and the cosmology justifying it

will only be able to be developed in the struggle for liberty against enslavement to the global corporatocracy as a process of creating a new socio-economic order. The elaboration of the new conception of the world should be developed as part of the process of creating a genuinely democratic social order providing the natural, social and built-up environments in which people will be free to live virtuously according to these higher ends. Rescuing ethics, bringing forth of the mighty harvest sown by Heraclitus, will involve creating a new socio-economic order based on and inspired and articulated by this different conception of the world. [48]

Developing a socio-economic order articulated by a radically different conception of the world will be more than simply a transformation of a particular society, however. Corporatized capitalism is now a global system of domination and exploitation. It is a global civilization, or rather, a global anti-civilization, since by providing a paradise for efficient sociopaths it is eliminating any goals other than satisfying greed and instrumental efficiency, and consequently is undermining rather than augmenting people's humanity. Transforming this social order, overcoming this anti-civilization, will effectively involve the creation of a new, global civilization. What is required is a civilization committed to augmenting the life of the ecosystems of which humans are part, a civilization in which people are appreciative of the diversity of life and the diverse ways of living required to maintain this diversity, a civilization committed to providing people and communities, ranging from local to transnational communities, with the liberty to realize their highest potentials to appreciate and augment life. It will then be possible and necessary to reformulate and develop a doctrine of virtues as the characteristics to be recognized and aspired to and cultivated by individuals in their self-creation in making the best possible contribution in their own lives to the life and conditions for life of their social and ecological communities. This must including habituated commitments to truth, comprehensive understanding and justice along with the courage to defend the liberty required for upholding these virtues and the conditions for exercising them, although how wisdom, justice and courage are understood and developed will vary according to people's cultural history, the social formations of which they are part and their particular situations. The best way to work towards such a civilization, simultaneously upholding this general conception of virtues while valuing diversity of societies and individuals, is to first uphold the quest for truth and the virtue of wisdom, developing philosophy as the love of wisdom and of life, and then in the name of the quest for truth as a comprehensive understanding of the cosmos and ourselves, to privilege ecology based on process metaphysics as the reference point for defining science. Ecology should not only define the place of humanity within nature, the relation of individuals to each other, to institutions and communities; it should replace physics as the pre-eminent science for defining the nature of the world.

There are sound reasons for claiming this. As Robert Ulanowicz, one of the world's leading theoretical ecologists pointed out, ecology more effectively

than any other science highlights the deficiencies of the dominant reductionist materialism. It brings into focus what are now coming to be seen as the core problems that have to be addressed to advance science in all fields. As he put it in his book *Ecology, The Ascendent Perspective*:

> Ecology occupies the propitious middle ground. [...] Indeed ecology may well provide a *preferred* theatre in which to search for principles that might offer very broad implications for science in general. If we loosen the grip of our prejudice in favour of mechanism as the general principle, we see in this thought the first inkling that ecology, the sick discipline, could in fact become the key to a radical leap in scientific thought. A new perspective on how things happen in the ecological world might conceivably break the conceptual logjams that currently hinder progress in understanding evolutionary phenomena, development biology, the rest of the life sciences, and, conceivably, even physics. [49]

It is in ecology that the problems of dealing with complexity, emergence, hierarchical ordering and causation involving interaction between multiple levels of organization are likely to be most tractable. At the same time, ecology, bringing into focus the system of homes and the synergies that have been created by and are essential to life, and reintroduces into science final causes and the evaluative concepts of resilience, integrity and health, applicable to all scales up to the global ecosystem. It can situate humanity in all its diversity and individuality as participants in the becoming of life. This should lead to an appreciation of diversity as essential to life. And as Ulanowicz argued, ecology is the science that requires and supports the development process metaphysics. [50]

From this perspective, the globalized market dominated by transnational corporations is a disease. As Mae-Wan Ho and Robert Ulanowicz put it:

> The economic globalization promoted by rich countries in the World Trade Organization is aimed at removing all barriers to trade, finance and procurement, which is tantamount to destroying the system's intricate space-time structure. [...] As the global economic system is embedded in the global ecosystem, over-exploitation of the global economy will drive people to use natural resources at unsustainable rates, so that the global ecosystem increasingly fails to renew itself. [51]

This dissolution of human diversity into the global market has to be opposed, with those forms of life that have co-evolved with other species within ecosystems and are conducive to the flourishing of ecosystems, and the environmental conditions of such forms, defended. As Richard Norgaard, an ecological economist also aligned with process philosophy, argued:

> The modern story fosters global homogenization, centralization, and a hierarchy of experts. The coevolutionary

> explanation of process, on the other hand, admits, helps us see, lends legitimacy to, and identifies the advantages of a diversity of ways of knowing, valuing, organization, and doing things. [52]

The quest to create a new civilization can be defended as a story of overcoming a disease to revive civilization as the condition for restoring our liberty and the health of the global ecosystem.

Reconceptualizing humanity's relationship to nature and the new story associated with it requires that this be conceived as the quest to create an *ecological* civilization, a civilization in which 'ecosystems', understood as 'systems of homes' and as 'communities of communities', replaces 'machines' as the dominant metaphor and provides the concepts for people to define their humanity and their place in the cosmos, their ultimate values and their ethics. Ecology should not be understood as only a means to understand the world by detached observers. Ecology encompasses observers and their theories, and this has radical implications. As Roy Rappaport observed:

> In a world in which the lawful and the meaningful, the discovered and the constructed, are inseparable the concept of ecosystem *is not simply a theoretical framework* within which the world can be analyzed. It is itself an element of the world, one that is crucial in maintaining that world's integrity in the face of mounting insults to it. To put this a little differently, the concept of the ecosystem is not simply descriptive [...]. It is also "performative"; the ecosystem concept and actions informed by it are *part of the world's means for maintaining, if not indeed constructing, ecosystems.* [53]

As noted, deploying the concept of ecosystem will involve developing ecology and other natural sciences along with human ecology, ecological economics and eco-politics, to replace reductionist biology, sociology, neo-classical economics and other social sciences, while reviving and giving new direction to the humanities and the arts. [54] An ecological civilization based on these developments would value diversity both within nature and within culture and society.

Valuing diversity while upholding the commitment to truth can be consolidated by upholding 'dialogism', 'culturology' and 'transculturalism'. Support for these is implied by Norgaard's vision of a world-order consisting of a 'coevolving patchwork quilt of discursive communities.' [55] Such communities should have the courage to be open to each other while recognizing the uniqueness and value of their own culture, respecting and striving to understand and learn from each other, thereby freeing themselves from sterile parochialism. At the same time they should expect reciprocal recognition and be prepared to criticize what they find defective in other cultures, and to demand of people of other cultures that they also take into account their own insufficiency. As Mikhail Epstein argued, 'the fundamental

principle of transcultural thinking and existence' is the '[l]iberation from culture through culture itself', generating a 'transcultural world which lies not apart from, but within all existing cultures.' [56] This is the condition for creativity in the quest for truth, justice and liberty, for as the Russian philosopher Vladimir Bibler observed, 'Culture can live and develop, as culture, only on the borders of cultures.' [57]

The capacity for dialogue, embracing this imaginative openness to the experience of others, reflexivity while remaining committed and actively engaged in creating the future, is a fundamental virtue required for an ecological civilization. It is the virtue that should lead from appreciation and respect for other people and other cultures to appreciation of and respect for all life and thereby to the development of all the other virtues necessary to create and sustain such a civilization. It is in this quest to create an ecological civilization, associated with the struggle to change both in theory and practice how people conceive and organize themselves and their relationships to nature, to other people and to their communities, that an ethics of virtues should and could be revived.

Notes

[1] Philosophy and Cultural Inquiry, Swinburne University.

[2] Alasdair MacIntyre, *After Virtue*, 3rd ed., Notre Dame: University of Notre Dame, 2007, p.2.

[3] The history of this is provided in more detail in Arran Gare, *Nihilism Incorporated: European Civilization and Environmental Destruction,* Bungendore: Eco-Logical Press, 1993.

[4] This development has been brilliantly analysed by Jean-Pierre Vernant, *The Origins of Greek Thought* [1962], Ithaca: Cornell, 1982.

[5] This is described by Hannah Arendt in *The Human Condition*, Chicago: University of Chicago Press, 1958, p. 28 ff.

[6] Vernant, *The Origins of Greek Thought*, p. 108.

[7] Vernant, *The Origins of Greek Thought*, p. 122.

[8] This is evident from Charles H. Kahn's study of Heraclitus in *The Art and Thought of Heraclitus*, Cambridge, C.U.P., 1981, pp. 9-23.

[9] The relationship between temporality and knowledge in Plato has been revealed by Jaako Hintikka in 'Knowledge and its Object in Plato', *Knowledge and the Known: Historical Perspectives in Epistemology*, Dordrecht: Reidel, ch. 1.

[10] See Plato, *Apologia*, 22c and *Geogias*, 503d-e.

[11] Plato, *Republic*, Bk VI, 439b.

[12] Plato, *Republic*, Bk IV, 433a.

[13] Saint Augustine, *On Christian Doctrine*, Bk I, XXII, 20; trans. D.W. Robertson, Indianapolis: Bobbs-Merrill, 1958, p. 18.

[14] Saint Augustine *The City of God*, trans. Marcus Dodds, New York: Random House: 1950, Bk 10, ch. 14.

[15] On the Platonism of medieval political and legal thought see Harold J. Berman, *Law and Revolution: The Formation of the Western Legal Tradition*, Cambridge: Harvard University Press, 1983.

[16] John of Salisbury, 'Policraticus' in *The Portable Medieval Reader*, Harmondsworth: Penguin, 1977, p. 47.

[17] Benjamin Nelson 'Conscience and the Making of Early Modern Cultures' in *Social Research* 36, 1969: 13.

[18] This has been analysed by William Brandt, *The Shape of Medieval History: Studies in Modes of Perception*, New Haven: Yale University Press, 1966.

[19] Froissart's *Life of the Black Prince* cited William Brandt, *The Shape of Medieval History*, p.137.

[20] Brandt, *The Shape of Medieval History*, p.137.

[21] On these radicals see Frances A. Yates, *Giordano Bruno and the Hermetic Tradition*, London: Routledge & Kegan Paul, 1964.

[22] The development of this way of thinking has been described by Clarence Glacken, *Traces on the Rhodian Shore*, Berkeley: University of California Press, 1967, p.349.

[23] On the influence of Platonism on the development of technology in the Middle Ages, see Lynn White Jr. *Medieval Religion and Technology*, Berkeley: University of California Press, 1978. White's work provides empirical support for the acute insights of Heidegger on how Western metaphysics (that is, Platonism) led to the world being conceived of as a 'standing reserve' to be exploited. See Martin Heidegger, 'The Question Concerning Technology', *The Question Concerning Technology and Other Essays*, trans. William Lovitt, N.Y.: Harper & Row, 1977.

[24] William Shakespeare, *King Henry IV, Part I*, Oxford Standard Authors, V.i. p. 131.

[25] On this, see Jonathan Israel, *A Revolution of the Mind: Radical Enlightenment and the Intellectual Origins of Modern Democracy*, Princeton: Princeton University Press, 2010 and Arran Gare, 'Reviving the Radical Enlightenment: Process Philosophy and the Struggle for Democracy', *Researching with Whitehead: System and Adventure*, München: Karl Albert Freiburg, 2008, pp. 9-24.

[26] William Petty, *Political Arithmetick*, p. 178; cited by Karl Marx, *Grundrisse: Foundations of the Critique of Political Economy (Rough Draft)*, trans. Martin Nicolaus, Harmondsworth: Penguin, 1973, p. 231.

[27] Marx, *Grundrisse*, p. 232.

[28] Karl Marx, *The Economic and Philosophic Manuscripts of 1844*, trans. Martin Milligan, New York: International Publishers, 1964, p. 167.

[29] Adam Smith, 'The History of Philosophy' in *Essays on Philosophical Subjects* ed. W.P.D. Wightman and J.C. Bryce, Oxford: Clarendon Press, 1980, IV.19, p. 66.

[30] The strong influence of Plato on Smith has been noted by Andrew Skinner. See Andrew S. Skinner, *A System of Social Science: Papers Relating to Adam Smith*, Oxford: Clarendon Press, 1979. A detailed study of the way in which conceptions of humans assumed in economic theory function as the basis for evaluations has been made by Walter A. Weisskopf in *The Psychology of Economics*, Chicago: Chicago University Press, 1955.

[31] Adam Smith, *The Theory of Moral Sentiments*, Part IV, Section 1, Ch. II.

[32] W. Stanley Jevons, *The Theory of Political Economy*, 4th ed. London, Macmillan, 1911, p. 21.

[33] Jevons, *The Theory of Political Economy*, p. viii.

[34] The nature of this development has been analysed by Philip Mirowski in 'Physics and the Marginalist Revolution', *Cambridge Journal of Economics,* 8, 1984: 361-379.

[35] This state is described by Spencer in 'Retrospect and Prospect', *On Social Evolution*, ed. J.D. Peel, Chicago: Chicago Press, 1972, p. 262.

[36] The permeation of society by Social Darwinism has been well described by Hamilton Cravens, *The Triumph of Evolution*, University of Pennsylvania Press, 1978.

[37] From *Public School Administration*, Boston: Houghton Mifflin Co. 1916, p. 338.

[38] Robert Jungk, *Tomorrow is Already Here*, trans. M. Waldman, London, 1954, p. 17.

[39] Friedrich Nietzsche, *The Will to Power*, trans. Walter Kaufman, § 666.

[40] Cited by Robert L. Heilbroner, *An Inquiry into The Human Prospect*, N.Y.: W.W. Norton, 1975, p. 170.

[41] On this, see Gerard Ahearne, 'Towards an Ecological Civilization: A Gramscian Strategy for a New Political Subject', *Cosmos & History: The Journal of Natural and Social Philosophy,* 9(1), 2013: 317-326.

[42] On the role of Schelling and the coherence of this tradition, which is really the tradition of the 'Radical Enlightenment', see Arran Gare, 'Overcoming the Newtonian paradigm: The unfinished project of theoretical biology from a Schellingian perspective', *Progress in Biophysics and Molecular Biology* 113, 2013: 5-24. For an ethics of virtues based on process metaphysics, see Arran Gare, *Nihilism Inc.: Environmental Destruction and the Metaphysics of Sustainability,* Sydney: Eco-Logical Press, 1996, ch. 16.

[43] Ilya Prigogine, *From Being to Becoming: Time and Complexity in the Physical Sciences*, San Francisco: Freeman, 1980, p. xiif.

[44] Jose Ortega Y Gasset, *History as a System*, trans. Helene Weyl, [1941] N.Y.: Norton, 1962, p. 203.

[45] The conception of reality as consisting of processes of different durations has been developed by a number of process philosophers, notably Nathanial Lawrence, Milic Capek and Ivor Leclerc. Unfortunately the ethical implications of this have not been fully spelt out.

[46] Herman E. Daly and John B. Cobb, Jr., *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future*, 2nd ed. Boston: Beacon Press, 1994 and Arild Vatn, *Institutions and the Environment*, Cheltenham: Edward Elgar, 2005, go some way towards achieving this.

[47] This is how the Romans understood slavery. See Quentin Skinner, *Visions of Politics,* Volume II, Cambridge: Cambridge University Press, 2002, p. 289. Slavery was defined as the negations of liberty, the condition were people are able to act in their own right.

[48] Such a transformation was begun in the Soviet Union in the 1920's inspired by the 'process philosophy' of, and partly led by, Aleksandr Bogdanov, but was crushed by Lenin. On Bogdanov's philosophy see K. M. Jensen, *Beyond Marx and Mach: Aleksandr Bogdanov's Philosophy of Living Experience*, Dordrecht: Reidel, 1978. On the *Proletk'ult* movement he began after the revolution see Zenovia A. Sochor, *Revolution and Culture: The Bogdanov-Lenin Controversy*, Ithaca: Cornell University Press, 1988. On the ethical thought of Bogdanov and his colleagues, see Robert C. Williams, 'Collective Immortality: The Syndicalist Origins of Proletarian Culture, 1905-1910', *Slavic Review*, 39, Sept. 1980: 389-402. See also Arran Gare, 'Aleksandr Bogdanov's History, Sociology and Philosophy of Science', *Studies in the History and Philosophy of Science*, 31(2), 2000: 231-248.

[49] Robert E. Ulanowicz, *Ecology: The Ascendent Perspective*, New York: Columbia University Press, 1997, p.6.

[50] Robert E. Ulanowicz, 'An Ecological Metaphysic', *A Third Window: Natural Life beyond Newton and Darwin,* West Conshohocken: Temple Foundation Press, ch. 6.

[51] Mae-Wan Ho and Robert Ulanowicz, 'Sustainable Systems as Organisms?', *Biosystems,* 82, 2005:39-51, p. 47.

[52] Norgaard, *Development Betrayed*, p. 187.

[53] R. A. Rappaport, 'Ecosystems, Populations and People' in E.F. Moran, ed., *The Ecosystem Approach in Anthropology: From Concept to Practice,* Ann Arbor: University of Michigan Press, 1990, pp.41-72, p. 68 f.

[54] See Arran Gare, 'Towards and Ecological Civilization: The Science, Ethics and Politics of Eco-Poiesis', *Process Studies,* 39(1): 5-38.

[55] Norgaard, *Development Betrayed*, p. 165.

[56] Mikhail N. Epstein, *After the Future,* trans. Anesa Miller-Pogacar, Amherst: The University of Massachusetts Press, 1995, p. 298 f.

[57] Quoted by Epstein, *After the Future,* p. 291.