

ISLAM, ECOLOGY AND MODERNITY

AN ISLAMIC CRITIQUE OF THE ROOT CAUSES OF ENVIRONMENTAL DEGRADATION

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I INTRODUCTION

There are two things that can be said about the environmental crisis with some degree of certainty, which is without historical precedent. The first is that the entire human community is affected by it and secondly, every single human being can play his or her part in working within their own capacities and traditions to do something to ameliorate the problem. But, our species seem to be pulling in the opposite direction. The idea of a global village with all the finiteness that it implies is now common currency on the one hand when on the other, humankind continues to believe in its infinite capacity to provide for its continuously increasing desires. As Seyyed Hossein Nasr observes, “There is near total disequilibrium between modern man and nature as attested by nearly every expression of modern civilisation which seeks to offer a challenge to nature rather than to co-operate with it”.¹

We are sufficiently distant from the genesis of this particular phase of human history to be able to discern people, ideas and events that have brought us to this point. The drive for the great events of the past five hundred or so years has come mainly from the bosom of Europe. This has been a period of intellectual brilliance and unsurpassed technological innovation and the political dominance Europe has exercised over the rest of the people on this planet is unprecedented. What began in the period as Christian Europe, or to loosely use the term Christendom, has transformed itself into a group of secular nation states and has also succeeded in persuading and or coercing the rest of the human community to organize their lives in a like manner. Along with this, importantly, came schools and universities based on the European model run by Christian missionaries or local educationists who were impressed by this model. These institutions replaced, now it would seem to everybody’s detriment, tried and tested traditional systems of knowledge.

At the same time this “modernising” movement succeeded in producing an elite, including a Muslim elite, that wanted for themselves what the West wanted. In an aptly named book “Mono Cultures of the Mind” Vandana Shiva says, “Emerging from a dominating and colonising culture, modern knowledge systems are themselves colonising”². Thus colonial education, which eventually became universal education, is seen now to be the fount of modernity. It played a major role in helping to lay the foundations for the establishment of a global system of nation states. This system was based on an institutional model run according to secular principles subscribing to a philosophy of endless economic growth. It now functions within a political system that relies heavily on consumerism to hold it together. This is at the root of today’s environmental crisis.

Colonialism was replaced by modernity as the force that underpinned the economic dominance of the West over the rest of the world. China may not have been politically colonised but it expresses itself as an evolving synthesis of a Marxist capitalist model in search of industrial expansion and consumerism. It desires to replicate the modern Western experience within the framework of secular scientism and consumer communism. The rejection of the Confucian/Taoist paradigm by the Chinese has been a loss not just to China but to the rest of the world. Similarly when the Ottoman Khalifate was weakened by the West it signalled the end of a milieu where another world view prevailed. Samuel Huntingdon says, "The rise of the West undermined both the Ottoman and Mogul empires, and the end of the Ottoman Empire left Islam without a core state. Its territories were in considerable measure divided among Western powers which when they retreated left behind fragile nations formed on a Western model alien to the traditions of Islam".³ Huntingdon also points out that Kemalist Turkey set out deliberately to both Westernise and modernise.⁴ Modernity manifests itself in different forms as we can see in the cases of China and Turkey, but this does not detract from its homogenising qualities as this essay seeks to show. The West changed - modernised - rapidly and as it changed, it changed the rest of the world with it.

What emerged in Europe that was radically different was a scientific worldview, which is seen as having provided a new impetus to history. Huntingdon claims that what Europe went through was "a revolutionary process comparable only to the shift from primitive to civilised societies ... which began ... about 5000 BC". These events took place when European states were conjunctively and collectively a power in the world. Modernity evolved as they attempted to consolidate themselves into new style nation states, through the period now known to us as the Enlightenment and the traumas of the industrial revolution. The Americas not far behind, participated in this process once their own colonial wars were settled. The agricultural revolution that transformed human society nearly 7000 years ago went through a slow and diffused process. By contrast the changes that have taken place in the past four to five hundred years have been rapid, violent and devastating in their impact upon nature.

The hypothesis presented in this essay is that prior to the advent of modernity, the natural order functioned within its own limits and that the seeds of the ecological crisis that breached these limits were sown during the period that followed the Renaissance. This was from the sixteenth century onwards, when what we now know as Modernity began to evolve.

Two fundamental causes altered the course of civilisation that has now brought us to this point. The first of these is the shift in humankind's perception of itself in relation to the natural order. This is encoded in what has now come to be known as the secular scientific worldview, which emerged in this period. Having resided in nature's bosom for aeons humans suddenly became its predator. The second cause has to do with wealth - more precisely money and how we now create it with gay abandon. John Kenneth Galbraith said of this, "The process by which we create money is so simple that the mind is repelled".⁵ Fredric Benham a writer of standard economic textbooks observed, "it seems like a gigantic confidence trick".⁶

Conveniently the predator has now discovered a magical way of creating endless credit with which to devastate the earth. This makes much of our progress illusory and the basis of modernity highly questionable.

This essay is an attempt to identify and focus on these two causes that are seen to be at the root of the environmental crisis and which are an anathema to Islam. After this introduction, the second part examines how the secular scientific ethic came to be pre-eminent in Europe at the expense of traditional world views. The third part explores modernity in this light and its evolution up to the present time in relation to the ecological crisis. The fourth part discusses how the ethic of human dominance crystallised alongside a new form of financial intermediation and how they both go against the Islamic norm. I attempt to demonstrate how they have jointly contributed to the present crisis. The fifth and final part identifies the principles which may form the foundation of an Islamic model for a sustainable life style based on a system of Islamic law (*shariah*) and governance.

II THE ASCENDENCY OF SCIENCE

The Qur'an, in one of its commentaries on existence asserts that "We have not created the heavens and the earth, and what is between them, save with the truth and a stated term"⁷. Every species including the human has a limited time on this planet, and planet Earth itself will one day be turned to cinder by an expanding Sun. The knowledge of our own extinction, however distant it may seem to be has yet to enter our consciousness. The last day expressed in the Qur'an as "*al Yawm al Akhir*"⁸ is an article of faith in Islam. But, there is the distinct possibility that we could be shortening the time that has been allocated to our species by a very large margin in the way we have been conducting our affairs. Richard Leakey says in his *The Sixth Extinction* that our "reason and insight have not prevented us from collectively exploiting Earth's resources – biologically and physically – in unprecedented ways"⁹.

Leakey to further his point, quotes Edward Wilson who in addition to saying the human species is an environmental abnormality suggests that intelligence has a tendency to extinguish itself.¹⁰ What other species would consciously destroy its habitat deliberately within a *rational framework* (italics supplied) that justifies such actions? There now appears to be agreement that "biological diversity is in the midst of its sixth great crisis (the previous five having occurred naturally in the pre-human history of the Earth) this time precipitated entirely by man"¹¹. Leakey concludes "we homo sapiens may also be among the living dead"¹².

The human species having broken loose from the imperatives that confined it to the natural order now seeks to dominate it much to the detriment both to itself and the biosphere. Many see science as being culpable in this respect. Thomas Berry explains that Francis Bacon (1561-1626) introduced a new historical vision of a better order in earthly affairs through "scientific control" over the functioning of the natural world, with its fulfillment in the industrial age of the nineteenth and twentieth centuries. Berry further asserts that both liberal capitalism and Marxist socialism committed themselves totally to this vision of industrial progress which more than any other single cause has brought about the disintegration that is taking place throughout the entire planet.

By a supreme irony this closing down of the basic life systems of the earth has resulted from a commitment to the betterment of the human condition, to “progress”.¹³ Seyyed Hossein Nasr writing in 1968 suggests that Bacon was part of a wider process which was “the gradual de-sacralization of the cosmos which took place in the West and especially the rationalism and humanism of the Renaissance which made possible the scientific revolution”¹⁴.

Bacon advocated a new method of looking at natural phenomena and developed the inductive method of enquiry to reduce uncertainty in scientific experimentation. Bacon was not a scientist and in the view of Brian L. Silver “he left a legacy of belief in the evidence of the senses and in experimentation, and a vision of the role of science as the means of improving the material condition of man”.¹⁵ As Nasr points out Francis Bacon was part of a process which was exclusively that of the West which led in the seventeenth and eighteenth centuries to the period now known to us as the Enlightenment.

The rationalist movement which gained ascendancy in this period was ostensibly given impetus to by Descartes (1596-1650) and further epitomized by thinkers such as Locke (1632-1704), Voltaire (1694-1778) and Kant (1724-1804); Bentham (1748-1832) and Mill (1806-1832) advocated a form of hedonism in what is now known to us as utilitarianism; Smith (1723-1790) and Ricardo (1772-1823) gave us new insights into the taming of market forces by inaugurating the ‘science’ of economics; Newton (1642-1727) is reputed to have reduced the universe to a “clockwork machine”. Adventurers and politicians, bankers and capitalists, entrepreneurs and inventors, centres of learning and scientists found ample encouragement and justification to inaugurate the industrial revolution, establish the nation state and devise a political model that now panders to human hedonistic tendencies. This has brought us to the point where the human species has taken control of the biosphere in no uncertain terms. Seeing this as a linear movement which originated in the Renaissance, Nasr observes that “the absolutization of the human state is a heritage of the European Renaissance whose deadly consequences are being manifested only today...”¹⁶

Science is now associated with technology and the industrial revolution and Silver asserts in its defense that science is not synonymous with technology, that the stereotypical scientist is interested in how nature works and that the stereotypical technologist is interested in making more profitable soap powders”.¹⁷ But, Silver does not distinguish between pure and applied science and between science and scientists who may also be technologists, whose very work and survival would be at risk if their research was not financed by commerce and industry whose profits derive from making and selling profitable soap powders.

Pure science tends to explore phenomena in minutia, which has caused it to be labelled reductionist, but there is nothing wrong with this. However, it has led the way to reductionist applications which ignore the wider ecological imperatives. The geneticist Mae-Wan Ho argues that reductionist science has been shown not to work in many cases like the green revolution, eugenics and nuclear energy.¹⁸ Pure research has contributed much to our understanding of how the physical world and the life forms it contains work. But this information can be misused for power or profit.

DNA was discovered in 1869. Modern molecular biology was initiated with the discovery of the double helix in 1953 by Crick and Watson and Dolly the sheep was cloned using the techniques of DNA manipulation, now conveniently known as genetic engineering, in 1997. Scientists have now become engineers and Ian Wilmut the scientist who successfully cloned Dolly is an embryologist.¹⁹ Ho observes that “what makes Genetic Engineering Biotechnology (the full name given to this specialism) dangerous, in the first instance, is that it is an unprecedented close alliance between two great powers that can make or break the world: science and commerce”.²⁰ These may be manifestations of the dark sides of scientists and business people who like the rest of us are susceptible to the dark side of our natures that hangs like a shadow over the whole of our species.

What religion and science have in common is that they both in their own ways attempt to describe the natural world. The former does so with broad strokes of the brush that fill the canvas, while the latter attempting to fill in the colors, which, in spite of centuries of enquiry and research still only occupy minute parts of the picture.

What similarities there are end there. Religion moves on to show us how to live within the fold of nature and harmonize our lives with the forces that hold it together. It teaches us to take from it what we need and give back to it by respecting it so that it will give us more. Science has no pretensions in this direction and it is therefore amoral. The religion/science dichotomy is a false one which leads us to a false dialectic. Is there a dichotomy between a chicken and a bicycle? Science is a tool, a method, which helps us unlock the secrets of creation.

Scientists have now passed the frontiers of the gene and the galaxies in their understanding of them and quantum physics has opened us to the mysteries of creation in ways that are both sudden and profound. As Thomas Berry puts it there has been a shift in the “mode of consciousness” as scientists became aware that matter was not what it was thought to be; “Science was ultimately not the objective grasping of some reality extrinsic to ourselves. It was rather a moment of subjective communion in which the human was seen as the being in whom the universe in its evolutionary dimension became conscious of itself.”²¹

The knowledge derived from scientific enquiry however is neutral. It tells us how things are and whether we are moved by it or not is another matter. If science is amoral does that allow scientists to be so too? Do they make decisions about the ultimate use of their discoveries? Or does the research foundation, the university or the large corporation they work for? Scientists are small cogs in the engine of modernity like the engineer who designs the technology, the factory worker who makes the end product and the book keeper who produces the balance sheet.

The investigation of natural phenomena is an ancient occupation. Euclid studied the elements in 300 BC, Archimedes studied the functions of levers in 250 BC, Copernicus discovered that the Earth moved around the sun and not vice versa in 1543 and there was Galileo in Bacon’s own life time making telescopes²² and seeing things he was supposed not to.

Muslims too had their scientists and methods as indeed did the Chinese, the Indians, the Mayans and the Egyptians. The terminology used by Muslim scientists is interesting. *Istidlal* implied experimentation, measurement and observation; *istiqlal* is identical to the empirical, inductive method which was used five hundred years before Bacon; *istinbal* could be described as the analytical method.²³ Muslim scientists contributed much to the advancement of the sciences which was then absorbed into the European tradition. Ibn Sina's (d. 1037) text book on medicine was a standard work in Europe until the nineteenth century; Al Haytham (d.1039) founded the science of optics; in the twelfth century Al Khazini recorded the specific gravity of fifty substances which compares remarkably well with today's results.²⁴ There was no interest in this subject in Europe until Robert Boyle conducted his experiments five hundred years later.

Science, although not known as such and described in many other ways, developed as a system of knowledge since antiquity to help human beings know and understand the natural world. Astronomy may have started as an exercise in curiosity but travelers have known how to set a course by the stars for millennia. Similarly medicine evolved from simple folk cures to become a major scientific pharmaceutical endeavor and hydrology from the need to understand simple irrigation systems by the ancient agriculturists to the complex scientific specialism it is today.

Many other specialisms emerged as civilizations evolved and the forces that drove them had nothing to do with economic or industrial progress. The great Muslim advances in astronomy had much to do with discovering the times and directions of prayer. It was not until the seventeenth century when attitudes changed sharply and seminal changes began to take place in post Renaissance Europe that science emerged with a new status for itself. It was one of the major elements in a confluence of a roaring torrent of ideas. If not for the rest of the intellectual movement science could still be wending its staid way through history

III AN EXPLORATION OF MODERNITY

It is posited that modernity grew out of the predatory tendencies of the human species, which now had the means of unlocking the secrets of nature and sophisticated tools for extracting its wealth. The word 'modern', according to Zygmunt Bauman began to adopt a new meaning in the seventeenth century. It meant amongst other things an irreverence towards tradition, a readiness to innovate and a recasting of the old as antiquated, obsolete and something that needed to be replaced. 'Modernity' is best described, says Bauman, as an age essentially of human accomplishment marked by constant change and progress. It has been a period where reason has been deployed to the task of making the world a better place to serve human need, where nature has been deemed meaningless, except in the sense that it can give meaning to the uses humans put it, and where the creation of an artificial, rational order of human existence was not just an arbitrary choice but a necessity.

The satisfaction of human need comes through resorting to science and technology, both the expression and vehicle of human ascendancy of nature, as the principal sources and instruments of political, cultural and moral progress. Thus having identified the ideological foundation of modernity Bauman then describes how modern Europe

regarded itself as superior and the rest of the world as in a state of arrested development. It considered itself the carrier of a historical destiny, having a duty to spread the gospel of scientific rationality and to convert the world to its own orthodoxy and lifestyle. Thus the period of modern European history became an age of proselytism, colonisation of the non-European world and repeated cultural crusades within its own boundaries.

This movement also ushered in the age of the nation states, deployed nationalism in the service of state authority and promoted national interests as the criteria of state policy. The stage was thus set for it to become the first global civilization in history, described as the ultimate form of human development capable of continuous creativity.²⁵ Eisenstadt writing about modernization says that this was a term that was frequently used after the Second World War, which described a movement orientated towards modernity, which applied to underdeveloped countries of the third world.

Modernisation in its first institutional and cultural aspects developed in Western Europe and the Americas. They crystallized in the sixteenth Century in the form of a capitalist economy and a civilization characterized by the bureaucratization of social life and a secular worldview orientated towards modernity. The achievement of modernity was measured in terms of industrialization, urbanization, literacy and education as well as openness to modern modes of communication. Modernization expanded by economic, military, political and ideological means throughout the world creating a series of continually changing world systems.²⁶

One of the greatest successes of the Trojan Horse of modernity was to produce a mercatorized map of the world with lines on it that had never existed in previous history, in less than two hundred years. The nation state has replaced all other forms of managing human affairs. It has been recognized that the institution of the state became necessary as the human community settled into agricultural pursuits which required irrigation and also that some of the earliest states were established in temples. Due to the seminal changes that took place in post Renaissance Europe, seen as being equal in import to those changes that took place during the agricultural revolution seven thousand years ago, a new model of governance evolved. The idea of the nation state took hold in Europe to deal with the complexities of the new order. Additionally, its “rise to world hegemony was due to a dynamic which was broadly capitalist in spirit.”²⁷

In 1920 the League of Nations resolved that the only internationally legitimate form of governance was the nation state. This resulted in the overthrow of two long standing axioms of human history the first of which was that all societies were ordered as hierarchies and the second that human beings were vast religious collectives whose ultimate mission was to encompass the entire planet.²⁸

The effect of this modern form of statism for which much of the world was not ready was profound, far reaching and rapid. Some of these are enumerated as cultural and ideological homogenization; the role of the state was centralized; the state also became the secular arbiter and repository of cultural values; other notions of state were disparaged and displaced; it succumbed to the reductionist political sociology of Max Weber.²⁹

There were further complications. A particular method of governance, which had evolved alongside a flowering intellectual tradition and aggressive industrialization in Europe, was forced onto the rest of the world, which was far from ready for this. Decolonization in the aftermath of the Second World War saw the accelerated growth of the United Nations with increasing numbers of fledgling states taking their places in the Assembly. What they were measured by was a complex set of features which many of them had difficulty in coming to terms with. These features were industrial capitalism geared to a post war development model; a society driven by science and technology; economic growth, mass markets and demand management as a means of creating a consumer society; standardized and centralized institutions like the police, conscription; education and central banks; bureaucratization of the administrative processes; expansion of literacy accompanied by the homogenization of the printed language.³⁰

Ernst Gellner observes that education in modern society is standardized and minutely stratified. Unlike classical education it is functionally geared to economic work force needs.³¹ Serge Latouche observes that the driving force of modernity is its obsession with success; its aspiration to create a grand society is illusory and is totalitarian in outlook in that it sees all other societies as irrational. He describes modernity as the rape of traditional ancestral values and sees a titanic struggle between it and tradition. The technological society it espouses has dehumanizing tendencies.³²

An institution which is now integral to and seen as being essential to the stability of the nation state was the central bank, the prototype of which was the Bank of England created in 1694. It was set up to raise a 'perpetual loan' on behalf of the state, the interest for which would be met by taxing the people.³³ Central banks are now an essential feature of the nation state and when new nations were created in the aftermath of the Second World War decolonization process with central banks of their own, they were essentially born into a debt that had to be continually serviced by taxation and now it would seem the IMF.

Modernity with its indissoluble link to the state and the market leaves no individual free from the influence of the market.³⁴ The market today is not of the local community any longer where participants have a commonality of purpose and interests. The modern economy, which is now global in extent devalues and destroys a whole range of human activities, human networks, solidarity, cooperation and reciprocity.³⁵ What emerges from this is a selfish form of consumer individualism, which is destroying communal cohesion and solidarity. This individualism is illusory as it denies true choice, individuals having been 'functionalized' and transformed into 'cogs and machines'.³⁶

In the view of George Simmel, today's individuals have an awesome task of patching together meaningful lives and making choices that neglect qualitative differences between objects of their choice. In an interesting reflection he says that intellect and money are simultaneously inevitable products and indispensable instruments of modern life. Both refer to the quantitative aspects of experienced phenomena and devalue their qualitative characteristics.³⁷ The global village is now a homogenised global culture defined largely in economic terms. It has been achieved by the progressive dilution and destruction of the old traditional cultures and the marginalization of the great religions by what has come to be known as the secular scientific order.

IV THE ACCELERATION OF HISTORY

The world we live in today is one that is dominated by a secular way of seeing and being. This is usually described as the triumph of science over religion, and Richard Tarnas asserts that the psychological constitution of the modern character (influenced by secularism) has been developing since the middle ages, conspicuously emerged in the Renaissance, was sharply clarified and empowered in the scientific revolution, then extended and solidified in the course of the Enlightenment. By the nineteenth century in the wake of the democratic and industrial revolutions it achieved maturity finally resulting in a radical shift of psychological allegiance from God to man.

Tarnas observes that Bacon and Descartes, the prophets of the scientific civilization, proclaimed the twin epistemological foundations of the modern mind: empiricism and rationalism. Descartes finally breached the flood gates of the old order by splitting mind from body and proclaiming a dualistic world in his well known statement “I am thinking therefore I exist” (*cogito ergo sum*). The fruit of the dualism between rational subject and material world was science, including science’s capacity for rendering certain, knowledge of that world, and for making man (in Descartes own words) “Master and possessor of Nature”.³⁸

This brings us to the point where it is possible to recognize that the basis of the secular order is opposite to the position that Islam takes on the two fronts identified in the hypothesis stated in the introduction. The first of these is Descartes’ *cogito* argument coupled with the statement on lordship. Having established the existence of the “I” he attempted a rationalistic proof of the existence of God. He failed and ended up by creating what is now known as the “Cartesian circle”.³⁹

Whilst the Qur’an itself uses reason, its foundation is revelation – knowledge through the divine unveiling of reality. The beginning of the “I” in Islam is in the act of submission, emerging from the seminal declaration of witnessing (*Shahada*): “There is no God but God”. This delivers the human and his condition in submission (*islam*) to the Creator. The submissive “i” of the human primal condition is opposite to that of the predatory Cartesian “I”. The very first line of the first chapter of the Qur’an declares, “Praise belongs to God, LORD of all the worlds”.⁴⁰ And the first line of the final chapter counsels, “Say: I take refuge with the LORD of men”.⁴¹ There is only one LORD and the very act of submission denies the human any pretensions to this position. Within this paradigm he does not possess anything except by the grace of the Creator. Creation exists as an act of His will and it holds together in its submission to Him. Thus we are all slaves of the Creator (*‘abd Allah*) and cannot in any sense be masters and possessors of something we are intrinsically a part. Our problems emerge from our trying to be.

There is much misunderstanding if not misrepresentation of the position that Islam takes in this area. The anthropocentrism of the Western manifestation of the Christian approach to the understanding of God is unthinkingly attributed also to Islam when both Muslim and non-Muslim writers refer sweepingly to the Abrahamic tradition.

It has been argued that the two older doctrines in this tradition (the Jewish and the Christian) relegate nature to the status of a resource and Lynn White in writing about this states, "... no item in the physical creation had any purpose save to serve man's purposes".⁴² This is usually referred to as the Genesis position that is the dominion of man over nature. Ismail and Lois Faruqi explain Muslims' relation to nature as moral in character; nature is a vehicle to perform good deeds; nature is a blessed gift (*ni'mah*) of God's bounty; it is not man's to possess or destroy; the Muslim is expected to treat nature with respect and deep gratitude to its Creator; any transformation of it must have a purpose and benefit to all.⁴³ By extension any transformation of nature which has a negative impact on itself and others is forbidden. Muslims hold that this caring and protective attitude to the natural order is one of the manifestations of the reforming role of Islam.

The second fundamental point of variance between Islam and the secular order is the issue relating to interest on money or to use its classical term 'usury'. The Bible prohibited usury except in favour of the Jew against the non-Jew (Deuteronomy 27:20). Calvin legalized usury in 1535 for the Christians.

There are strict prohibitions in the Qur'an against the practice of usury but the vast majority of Muslims now ignore its injunctions. The Qur'an says in no uncertain terms, "give up the usury that is outstanding if you are believers, if you do not, then take notice that God and His Messenger will war with you".⁴⁴ "The profit of usury is like a parasite in a market ... as the market grows the parasite grows ... usury produces an imbalance in natural trading and this has now penetrated everything ... it has been defined as asking something for nothing ... (and) ... it is the opposite of a just or equivalent transaction".⁴⁵

Usury, which is broadly defined as making money out of nothing, has two elements, which are now part of modern banking practice. The first is the institution of interest itself and the second the fractional reserve device which banks use to create endless money. This has been briefly dealt with in the introduction to this paper but interest itself also creates money out of nothing. Margrit Kennedy of the Permaculture Institute in Germany has done some work on interest debt and her model of taking out a loan of one penny at the birth of Jesus Christ produces the following figures –

INTEREST	PRODUCES BALLS OF GOLD THE WEIGHT OF THE EARTH	BY
At 4%	1 8190	1750 1990
At 5%	1 2200 billion	1403 1990

The mathematical term for this phenomenon is exponential growth.⁴⁶ This explosion of artificial wealth, which includes created credit from the fractional reserve system and interest, is used to create new industries exploit resources and improve standards of living. Every facet of human life including scientific enquiry and technological

innovation is now growing exponentially fuelled by ephemeral credit. The intangible swallows up the tangible exponentially. This is how we finance ecological collapse.

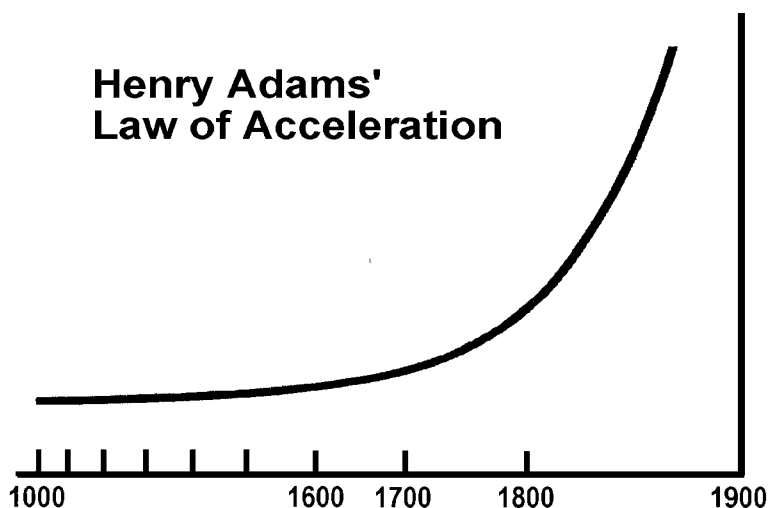
The founder of The Club of Rome, Aurelio Peccei says that there has been a large scale overshoot in the way

...the human population and economy extract resources from the earth and emit pollution and wastes to the environment. Many of these rates of extraction and emission have grown to be unsupportable. The environment cannot sustain them. Human society has overshoot its limits, for the same reason that other overshoots occur. Changes are too fast. Signals are late, incomplete distorted, ignored or denied. Momentum is great, responses are slow.⁴⁷

There is no longer any doubt that exponential growth is the driving force causing the global economy to breach the physical limits of the earth.⁴⁸

But these ideas are not new and interestingly were first postulated nearly a century ago. The scientist and historian Henry Adams propounded a theory in the early part of this century which suggested that the acceleration of technological change was forcing the acceleration of history.⁴⁹ It will suffice to say that Adams constructed a graph on a logarithmic time base to show that there was a relationship between the rate of consumption and utilisation of energy and what is described as technological progress.

The result was an exponential curve and he observed that the acceleration of the sixteenth and seventeenth centuries was rapid and startling and added, “the world did not double or treble its movement between 1800 and 1900, but measured by any standard known to science the so-called progression of society was fully a thousand times greater in 1900 than in 1800 ...”⁵⁰. What is interesting about Henry Adams’ graph is that it ran parallel to the base line for a time (see figure) and then suddenly began a steep incline. Now towards the end of the 20th century this curve is close to and almost parallel to the vertical axis. Adams said in 1905 “... at the accelerated rate of progression since 1600 it will not need another century to turn thought upside down. Law in that case would disappear ... and give place to force. Morality would become police. Explosives would reach cosmic violence. Disintegration would overcome integration.”⁵¹



All these forecasts have either already unfolded or are in the process of so doing but the point of crucial interest in this analysis is the time at which the graph began to rise. Examination shows that this abrupt, upward trajectory coincides exactly with the period covered by the sixteenth and seventeenth centuries. It is during this time that we can begin to discern the appearance of the historical factors such as Calvin's edict in favour of lifting the biblical ban on usury early in the sixteenth century, the Enlightenment, the scientific revolution, followed by the industrial revolution and the growth of technology.

Henry Adams, in his historical cultural context was only aware of what we now see as secondary and tertiary causes. What was important to him was technological change allied to energy consumption and his work nearly a hundred years ago produced the first alarming exponential growth curve. A closer examination of this will show us the primary causes which are uniquely visible from an Islamic perspective. They are the exponential creation of credit allied with the predatory tendencies of the human being rationalized in the present dominant secular ethic.⁵²

V GUARDIANS OF THE NATURAL ORDER⁵³

The biosphere is finite and delicate and the natural domain works within its own limiting principles to stay in balance. Islamic teaching offers an opportunity to understand this and to define human responsibility within this paradigm. It could be said that the limits of the human condition are set within four principles: *Tawhid* – the unity principle; *Fitra* - the creation principle; *Mizan* – the balance principle; *Khalifa* – the responsibility principle.

Tawhid is the fundamental statement of the oneness of the Creator, from which everything else follows. It is the primordial testimony to the unity of all creation and to the interlocking grid of the natural order of which humanity is an intrinsic part. The Qur'an says of God

*Say; He is God, One God,
The Everlasting Refuge.*⁵⁴

The Qur'an also declares that God -

*...Created everything
Then He ordained it
very exactly*⁵⁵

The whole of creation – being the work of one Originator – works within one stable pattern, however complex it may be. Another verse in the Qur'an (2:255) refers to the heavens and the Earth as comprising God's throne, thus conveying the idea that creation was designed to function as a whole. Each of its complimentary parts, including humankind, plays its own self-preserving role, and in so doing supports the rest.

The *Fitra* describes the primordial nature of creation itself and locates humankind within it. The Qur'an says -

*So set thy face to the religion, one of pure faith –
 God’s original upon which He originated humankind.
 There is no changing God’s creation.
 That is the right religion;
 But most men know it not –⁵⁶*

God originates humankind within His creation, which He also originated. Humanity is then inescapably subject to God’s immutable laws, as is the rest of creation. Creation cannot be changed and if we attempt to do this we will destroy ourselves. We are now like a split atom in disintegrating matter. Having caused the chain reaction ourselves we do not know how and when to stop.

The *Mizan* is the principle of the middle path. In one of its most eloquent passages the Qur’an describes creation thus –

*The All-Merciful has taught the Qur’an
 He created man
 And He taught him the explanation
 The sun and moon to a reckoning
 And the stars and trees bow themselves
 And heaven – He raised it up and set the balance
 Transgress not in the balance
 And weigh with justice, and skimp not in the balance
 And earth – He set it down for all beings
 Therein fruits and palm trees with sheaths
 And grain in the blade, and fragrant herbs
 And which of your Lord’s bounties will you and you deny?⁵⁷*

God has singled out humans and taught them reason – the capacity to understand. All creation has an order and a purpose. If the sun, the moon, the stars, the trees and the rest of creation did not conform to the natural laws – ‘bow themselves’ – it would be impossible for life to function on Earth. All of creation is in submission and humankind is the only part of it by the gift of reasoning that the Creator has endowed it with, that can choose to act otherwise. Submission is the natural law and it holds humanity’s predatorial instincts in check. So there is a responsibility not to deny the “Lord’s bounties” and actively to recognize the order that surrounds them for their own sake, as much as for the rest of creation.

Khalifa – or the role of stewardship – is the sacred duty God has ascribed to the human race. There are many verses in the Qur’an that describe human duties and responsibilities, such as the following which aptly summarize humanity’s role:

*It is He Who has appointed
 You viceroys in the earth⁵⁸*

Humankind has a special place in God’s scheme – that of viceroy (*Khalifa*) bearing in mind that we are first and foremost submitters - slaves of God (*‘abd Allah*). This is our relationship to the Creator - that of guardian in the role of the slave. Although we are

partners with everything else in the natural world we have added responsibilities and we are also accountable for our actions. We are decidedly not its lords and masters.

We can deduce from these four principles that creation, although quite complex and yet finite, only works because each of its component parts does what is expected of it - in the language of the Qur'an, 'submits' to the Creator. Humanity is inextricably part of this pattern. The role of humans – who uniquely have wills of their own and are thus capable of interfering with the pattern of creation – is of guardianship. This added responsibility imposes limits on their behaviour showing the way to a conscious recognition of their own fragility. They achieve this by submitting themselves to the divine law - *Shari'ah*.

Modernity has brought obvious great advances in many fields of human endeavour but has the price been worth paying? Much of these advances are also beyond the reach of the mass of humanity. The minority that has benefited to the full hold out promises for the rest but the wealth gap between the two classes continues to widen. It is also this very same minority that having fabricated the engine of modernity continues to use it to improve their own position to further develop and grow at unsustainable rates.

The push comes from a political model that has economic growth as its main foundation. As the system is based on competitive market forces those in front stay in front getting stronger all the time. When the nations that enjoy high standards of living deplete their own resources they can only maintain their life styles by depleting the resources of other nations. But, as all nations are in a race for growth this becomes a sustained assault by one species, albeit represented by a small minority, against all other living beings and the rest of nature.

The carrying capacity of the earth is already severely tested and if Russia or China or India achieves standards of consumption like anything approaching that of the West, substantial parts of the planet will look like the surface of Mars. It can be seen from Margrit Kennedy's analysis that even a modest growth rate of one percent is untenable and it would now seem that the idea of negative growth is one that should be taken seriously by those who live in the global village. We have already devoured the Earth many times over and that it continues to take a battering is a telling commentary on its resilience

As in the past today's rulers survive by providing people with a decent life. Once it just meant food in the stomachs but now this has changed into "standards of living" with competing politicians in the democratic model promising to increase this year by year manipulating growth rates, interest rates, exchange rates and tax rates at the expense of a finite biosphere.

There is now an urgent need for a radical reappraisal of this model. What caused the problem in the first place cannot be expected to produce the solutions for it. In addition to there being a re-evaluation of values the human community needs to discover a way of conducting its affairs in a way that will be possible for it to both satisfy its needs and survive in a finite planet.

Thomas Berry in his reflections on the secular-religious dichotomy suggests that “the remedy for this is to establish a deeper understanding of the dynamics of the universe as revealed through our own empirical insight into the mysteries of its functioning”.⁵⁹ In other words there could be a coming together of the secular and religious worldviews as science gives us insights into the deeper mysteries of creation. But, a sensitive exploration of alternatives based on faith and deep spiritual insights, in the absence of a complimentary political framework to bring these ideas to fruition, may not lead us to the changes we are seeking. The Islamic approach would be to re-examine a return to the holistic approach of the *Shari’ah* and the re-establishment of the Khalifate.

The four principles discussed earlier in this part of the paper could be seen as forming a sound basis on which to build an Islamic model that could help human beings to function within the natural pattern of creation, to lead satisfying lives and at the same time to protect the Earth from further degradation. For this to succeed however there will be a need for a political model along with a system of financial intermediation different to that of the present banking system. Such a model within the Islamic paradigm is governance based on Khalifate which existed from the early seventh to the twentieth century when the Ottoman Khalifate was destroyed.

The caliphate functioned without banks or massive bureaucracies under the ethos of what is known as the *millet* system that is autonomous regions, similar to the ideas on bioregionalism which are now being propagated. In his work on the Khalifate, Shaykh Abdalqadir as-Sufi says:

... the congress (of March 1925, of Muslim countries, which was held in Cairo to discuss the fall of the Ottoman Khalifate) noted that the instrument of division among the Muslims which had permitted this disaster was the European doctrine of nationalism. What it failed to grasp, for it was too early in its evolution, was that banking and not just frontiers delineated the national state as a debt receptor to a private and dynastic banking elite ...⁶⁰

The important question now is: Will modernity tolerate pluralistic political and economic expressions as a means to seeking viable alternatives to the resolution of our global ecological crisis or does it see progress as a linear movement defined entirely by itself?

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This essay first appeared in Foltz, Denny & Baharuddin; eds; *Islam & Ecology – A Bestowed Trust*; Harvard University Press, 2003. This book was the outcome of a series of conferences on religions of the world and ecology that took place between 1996 and 1998, under the supervision of the Harvard University Center for the Study of World Religions.

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⁵⁰ Ibid

⁵¹ Ibid

⁵² Fazlun Khalid; this is a precis of a section of a paper entitled Science, Technology and the Ecological Crisis – an Islamic Perspective, submitted to the International Conference on Values and Attitudes in Science and Technology, 3-6 Sept. 1996; International Islamic University, Kuala Lumpur, Malaysia.

⁵³ Fazlun Khalid; this title and the basis of the exposition that follows was first published in the Planet Journal of the U.N. Environmental Programme, Vol.8 No.2, July 1996

⁵⁴ As note 7; 112 (Ikhlas) 1-2

⁵⁵ As note 7; 25 (Furqan) 2

⁵⁶ As note 7; 30 (Rum) 29

⁵⁷ As note 7; 55 (Rahman) 1-12

⁵⁸ As note 7; 6 (An'am) 165

⁵⁹ As note 16; p.131

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