

A Changed World: A Plea for New Thinking

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This paper queries the rightness of the current mainstream thinking on development and technological change; expresses the apprehension that the much-feared climate change seems to have begun, and concludes with a fervent plea to all to undertake some radically new thinking. It is a concerned citizen's plea to other concerned citizens, experts, decision-makers, social activists, opinion-makers, and people in general.

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I

This article queries the rightness of the current mainstream thinking on development and technological change; expresses the apprehension that the much-feared climate change seems to have begun, and concludes with a fervent plea to all to undertake some radically new thinking. It is a concerned citizen's plea to other concerned citizens, experts, decision-makers, social activists, opinion-makers, and people in general.

The reflections set forth below, even when strongly stated, are put forward in a tentative spirit, subject to correction where they are in error. The request of the author – a non-scientist – to scientists, technologists and other experts (if any of them reads this article) is merely that his argument be given due consideration before it is dismissed.

II

In the development-environment debate two anodyne statements are often made. (i) "There is no necessary conflict between development and environmental concerns; the two can be harmonized." (This is supplemented by two related sub-points, (a) that in the event of a conflict, primacy should be given to development, and (b) that primacy should be given to the human over other forms of life and over nature.) (ii) "Technology holds the key. It will provide answers to all problems, including problems created by technology." The author has serious difficulties with both those statements, and will state them in a forthright manner without qualifications and nuances.

His comments on the first cluster of points are the following.

- (a) It would be right to say that there is no conflict between economic development and the environment *if and only if* our understanding of what constitutes 'development' undergoes a radical change.
- (b) The idea of according 'primacy' to development in the event of a conflict rests on the assumption that such a choice is available, i.e., that environmental (or to be more precise, ecological) concerns can be set aside and 'development' achieved. That is a wrong assumption.
- (c) Similarly, the postulation of a dichotomy between humanity on the one hand and flora and fauna on the other is wrong and shows a failure to understand the ineluctable relatedness of all of nature.

Those are terse and perhaps cryptic observations, but they will not be elaborated in this article. However, the idea of 'development' is central to this debate and needs to be gone into a bit further.

III

Taking his cue from Amartya Sen's phrase, 'development as freedom', the author tried out expressions such as 'development as sustainability', 'development as harmony', 'development as sanity', 'development as wisdom', and so on, but found none of them quite satisfactory. He then hit upon a negative formulation that seemed both striking and immediately intelligible: 'development as destruction'. That apocalyptic phrase seemed to him to be an apt description of the prevalent understanding of what constitutes 'development'. That statement needs to be elaborated.

Consumption is at the heart of the prevailing notions of development. There is an implicit assumption that the higher the level of consumption the greater the degree of development, or in other words, that a civilization which consumes more is more advanced than a civilization which consumes less. Consumption requires production; and so we genuflect before the twin gods of consumption and production. (This is not confined to the capitalist philosophy.) Given the demonstration effect of Western ways of living on the rest of the world, and given the reluctance of the West to accept any significant changes in its lifestyles, it seems improbable that there is going to be a general adoption of more modest ways of living. In this kind of developmental process, it is not possible to remain stationary at a certain level of production and consumption; each year's production and consumption must be higher than the previous year's, or else stagnation and decline will set in. Thus those who wish to pursue ever-rising standards of living are firmly and inescapably mounted on the treadmill of 'growth'. Inevitably, the draft on natural resources and the pollution and contamination of soil, air and water can only increase. The dysfunctional relationship between humanity and nature is creating a profound disorder, and this is increasing rapidly and seems irreversible. The word 'entropy' comes to mind, but one must refrain from venturing into the area of science.

There are of course two views on this. Some believe that disaster lies ahead, and others are convinced that such fears are grossly exaggerated. Some would even question the intelligence and/or good faith of the 'doomsayers' as they are often derisively described. The author can only state his own position: it seems to him that what we call 'development' is irreconcilable with ecological good sense.

We must take note of the view put forward by some that 'development' is not merely not bad for the health of the environment but is in fact positively good. The argument is that as basic needs are met and countries become more prosperous they will become more concerned about the state of the environment and will have the necessary resources to bring about improvement. It is indeed possible that as we grow richer we will begin to look after our surroundings better. However, this applies only to the immediate surroundings. London and Washington may improve the condition of the Thames and the Potomac, but their draft on the world's resources will continue and may increase – as will India's draft as it becomes richer – and may cause devastation elsewhere. Delhi, Mumbai and Chennai may become cleaner, greener and prettier, but the sources from which their needs are met may deteriorate.

As all countries aspire to reach the condition of America (using `America' as a symbol), the combined effect of their `higher standards of living' is bound to cast an impossible burden on Planet Earth. It is simply not true that `development' as now understood can be reconciled with `environment', using that as a shorthand term. (We need to go beyond the limited and imperfect formulation of `Sustainable Development' that has gained currency, but even that has been a non-starter.)

IV

Let us turn now to the second point, namely, that technology has all the answers. Technology is of course part of our lives, and not all of it is sophisticated or `high'. Even the use of pulley, rope and bucket for drawing water from a well is technology; so are the humble screwdriver and pencil-sharpener. We use technology all the time. Nor is technology something new in human history. The sharpening of a stone to turn it into a weapon, the appearance of the wheel, the turning of the first sod, the use of fire: all these were instances of technology. The Pyramids, the 2000-year-old Grand Anicut in Tamil Nadu, and the 3000-year-old Maribu Dam in Yemen, were technological achievements.

However, it is clear that after the Industrial Revolution there was a dramatic change in the magnitude, scale and complexity of technology, and a Technological Revolution followed. Consider the following illustrative instances of modern technology:

- deep power-driven borewells and tubewells sucking aquifers dry;
- mammoth dams that kill rivers (that may not be true of all dams, but it is certainly true of the big American dams);
- giant trawlers devastating marine life;
- gigantic oil tankers transporting crude and petroleum products, with the inevitability of oil spills from time to time, with dire consequences for aquatic life and for coastal areas;
- large modern metallurgical, chemical and petrochemical industries operating under horrendous temperatures and pressures, with the related grave risks, and causing pollution and contamination on a scale that is enormously difficult to remedy or control;
- and so on.

Destruction runs through that list. The process of paying for that Faustian pact began long ago: catastrophes such as Bhopal, Chernobyl, Exxon Valdes, etc, are not incidental occurrences but ineluctable concomitants to the process of technological advancement that we have embraced ardently. Life in the modern world is no longer human; it is daemonic. Consider for instance the `mad cow' disease in Europe and the ensuing slaughter of millions of animals: that bizarre outcome of what goes by the name of `civilization' is a pointer to a deep sickness, brought on or mediated by daemonic technology. Again, the infliction of unbearable pain on and the sacrifice of millions of animals in medical research as well as in the pharmaceutical and cosmetics industries is an aspect of technology that we prefer to ignore. The photograph (which used to be well-known some years ago) of a monkey strapped to a chair with probes protruding from its head, was perhaps as *defining* a picture of modern science and technology as the photograph of a girl running with her back burnt by napalm was of the Vietnam war. (Napalm was technology too!)

The pace of technological change began to accelerate some time ago, and has now become autonomous and uncontrollable. Technology is no longer humanity's servant but its master. At a meeting some years ago, a scholar referred to "the mindless pursuit of technology", but that formulation needs to be reversed. It is no longer we who pursue technology; it is technology that pursues us. Humanity is now under the tyranny of technological change. In any given instance, the change may be useful or transforming or trivial or unnecessary or dangerous, but the point is that we cannot opt out of change; we are riding a tiger and cannot dismount. Many will question that analogy as 'loaded'. It does not occur to them that the ever-accelerating pace of technological change is not necessarily an indication of health but could be a pathological state. There is a story – Nabokov mentions it somewhere – that some caged apes were taught to draw and that the first picture they drew was that of the bars of their cage. Similarly we seem to be prepared to celebrate our enslavement to technological change.

The argument that technology by itself is neutral and that it is the abuse of it that does harm is simplistic or disingenuous. Given the availability of deep borewell/tubewell technology, the depletion and contamination of aquifers is inevitable. Given the availability of advanced mining technology, the stripping or disembowelling of the earth was bound to follow. Given the possibility of the bulk transport of oil across oceans, oil spills and the resulting damage must be expected from time to time. If atom or nuclear bombs exist, as they do, someone is going to drop them somewhere at some time. The dangers are inseparable from the technology, and control is very problematic. Further, the belief that the answers to all the problems created by technology can be found through more technology is both naïve and dangerous.

One is well aware of the difficulties of this line of argument. How much technology is good? At what point does it become bad? Was there a stage in the past – say, before the Industrial Revolution – when humanity could have said "We have enough technology, let us stop further technological development"? The answer is that at each stage the next step in technological change seems logical, inevitable and welcome; at no stage are we conscious of crossing a dangerous line, a *Lakshman rekha*; and once a certain step has been taken, it is difficult to go back. Even if we feel that humanity is now on the wrong path, it is impossible to identify the particular stage at which we entered that wrong path, the particular moment when technological change acquired a life of its own and began to grow like a cancer.

We have come a long way from that hypothetical point. We cannot rewrite history; we have to live in the present. However, it is one thing to say that we cannot go back to the past and change it, and another to say that we must proceed further unthinkingly towards doom and destruction. Whether that march can be reversed or even slowed down, one does not know; but we must at least begin to think along those lines.

V

The author hastens to add that he is not insensitive to the remarkable demonstrations of human ingenuity and power that we see all around us. Some human achievements have indeed been awe-inspiring, and he is as susceptible to that sense of awe and wonder as anybody else. He also thrills to the sheer beauty of some engineering marvels: for instance, suspension bridges, the most notable one being of course the Golden Gate Bridge. Nevertheless, he does believe that 'civilization' as it has emerged in the West and

has been adopted by the rest of the world is not a healthy condition but a sickness. Earlier in this article the phrase 'development as destruction' was offered. A variant of that could be 'development as disease'.

In *The Magic Mountain* Thomas Mann puts a striking sentence into the mouth of one of the characters: "A paradox is the iridescent surface of the rotting mind". Something similar can be said about the shine and glow of giant modern metropolises. Having regard to the capacity of modern civilization to inflict harm and damage on Planet Earth, the late Anil Agarwal described it as a 'toxic' civilization; but that is only a part of what we are talking about here. Consider life in a modern metropolis: unsafe streets, random violence, apartment blocks barricaded like fortresses, and so on. These are almost indices of development! This has nothing to do with the new preoccupation with security; it began long before 9/11.

In the midst of all this madness there was a powerful voice of sanity in this country: that of Gandhi. Unfortunately we have abandoned him. It is unrealistic to talk about Gandhi because nobody is going to listen.

Lest these maverick views be described as 'Luddite' and obscurantist, it must be clarified that the author is not excoriating development but calling for a change in our understanding of what constitutes development. Development need not be destruction or disease; it could be sanity, balance and wisdom. Similarly, technology need not be a maligner; it could be benign. Even the promotion of handicrafts, local water-harvesting initiatives, rural development programmes, and so on, may need technological underpinning. This article is not asking for the abandonment of technology, but suggesting that it should be humanity's slave and not its master.

How these transformations are to be brought about, the author does not know. Like Abhimanyu who could break into a *chakravyuha* but could not get out, he has entered into large issues but finds it difficult to extricate himself. No neat conclusion suggests itself. People wiser than the author will surely find a way out of the labyrinth.

VI

Let us turn now to the third theme of this paper, namely climate change. There has been a long debate about economic development and ecological concerns, but - despite the appearance of fierce opposition - both the protagonists of 'development' and the advocates of 'alternatives' shared a certain world: a planet with its atmosphere, air, rain, snowfall, rivers, lakes, glaciers, rivers, springs, aquifers, mountains, forests, plains, estuaries, deltas, monsoons, floods, lean seasons, droughts, and so on. Both groups took for granted the continuance of that world *yavat chandra divakarau* (as long as the moon and the sun do last). One group was impatient to 'harness' natural resources for human use and get ahead fast, and the other urged the precautionary principle. That debate has now become a bit dated because the world (about which the second group entertained fears of possible future change) *has changed*.

One is not referring to natural disasters such as the tsunami that hit us in December 2004 or the earthquakes or volcanic eruptions that have been occurring in many parts of the world. However, consider the retreat of the Himalayan glaciers; the

reported shrinking of the ice-caps in the Arctic and Antarctic regions; the unprecedented heavy rainfall in Mumbai during the last south-west monsoon; and the sheer ferocity of the thunderstorms and cyclones, and floods of unaccustomed magnitude, in many different parts of the world (Mexico, New Orleans, Miami, parts of Europe, etc, and of course India). The frequency and severity of what are described as 'extreme events' appear to have increased, and at least some scholars seem to agree that these are manifestations of the 'climate change' that we have been fearing for some time. The world has indeed changed.

It has changed at least partly because of human intervention for 'development': large industry, mining, dams, diversions of rivers, canal irrigation, groundwater-drilling, urban conglomerations, exploding automobile populations, highways (including expressways and flyovers) and railway lines, long-distance power transmission lines, and so on. All this has undoubtedly produced a spectacular world and created unbelievable prosperity (at least for some), but has also brought about or contributed to the irretrievable change that has now become manifest. Humankind appears to have already succeeded in partially damaging its habitat beyond repair.

The purpose of this paper is not to seek cathartic relief by rhetoric, or blame earlier generations for folly. Eminent statesmen, scientists, technologists, engineers, economists, planners and administrators of the past were engaged in an effort to make India prosperous, and we cannot fault them by hindsight. (We are talking about India, but the point has wider applicability.) The pity is that we did not see the need for re-thinking early enough. Indeed, many do not see it even now, and become very angry with those advocate such re-thinking. The point is not that in the old debates some were right and the others wrong, but that the old debate is now dated and a new debate (or preferably, consultation) is called for. What one is saying is that the world of which the two opposing groups had divergent perceptions (which led to divergent prescriptions) no longer exists. We have moved into a different world, and have to start from scratch and learn the world afresh.

It is of course true that an enormous amount of scholarly and research work on global warming and climate change has been going on all over the world. However, that is not the same as 'learning the world afresh'. What is being produced is a vast body of new knowledge. Thinking afresh on the basis of that knowledge is another activity altogether. What is needed is not just the 'factoring in' of the new knowledge into old-style thinking and planning, but new thinking. Perhaps new thinking is taking place already here and there, but it is not (so far as one knows) widespread, and has not become a powerful current.

The plea of this article by a non-scientist is: "The world has changed; let our thinking change". That proposition is addressed not to any particular group but to all alike. What is being suggested is that eminent people of the most diverse kinds, such as scientists, engineers, technologists, administrators, politicians, economists, sociologists, environmentalists, social workers, activists, NGO leaders, campaigners for human rights or for the empowerment of disadvantaged groups or of women, and others, should turn aside from their respective activities briefly, sit together, reflect on our changing – changed – world, and chart new courses of action. (How wonderful it would be if people as diverse as M. S. Swaminathan, R. K. Pachauri, Y. K. Alagh, Kirit Parikh, Sompal, A. Vaidyanathan, P. V. Indiresan, B. G. Verghese, Medha Patkar, Rajendra Singh, Sunita

Narain, Vandana Shiva, Aruna Roy, Shekhar Singh, Jayanta Bandyopadhyay, Kanchan Chopra, and others, could come together and reflect on our changing world!)

That may strike some as a quixotic and laughable idea, but it is not a joke: it is meant seriously. It may be the voice of sanity or that of naivety, but it is raised in all earnestness.
