

# Can humans survive automation?

Speech to the Manning Clark House conference

*Science and Ethics: Can homo sapiens survive?*

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Let me begin with an anecdote. A young man studying engineering at university said to a young woman studying sociology: 'The social sciences are useless; only maths and engineering and the hard sciences are useful. Anyone studying social sciences is doing so because they are not clever enough to study maths'.

This claim is almost too easy to rebut, yet it is very widespread among influential sections of the population (including, sadly, many of those studying the social sciences and the humanities).

Of course we could ask our young engineer if he would care to read something by Kant or Weber or Foucault and still maintain that only thick people enrol in arts degrees. But I suspect he would respond by saying 'Well, I could read them, but what would be the point?'. If he did attempt to read them he would probably say they are not hard just unnecessarily opaque and their opacity is a cover for their irrelevance.

This belief that the arts are not important is in fact one that has never held more sway. Governments have decided that more resources should be directed at those areas of study which can prove themselves by generating a return, and here they mean an economic return. Even within the sciences, the insistence that CSIRO divisions should earn 30 per cent of their income from outside sources has imposed the logic of the market on scientific endeavour. I will suggest that the logic of the market is hostile to most of the things that make us truly human.

Modern economics, by which I mean neoclassical economics, is not just the handmaiden of the market but provides an ideological justification for the supremacy of the sciences and its products. It is not just the vanity or insecurity of neoclassical economists that made them want to emulate the hard sciences (so-called physics-

envy), but a genuine belief that science and technology are the keys to economic advancement.

What lies behind the belief in the superiority of the hard sciences and the irrelevance of the social sciences and humanities? It seems to me that the astonishing impact of technological advance, whose benefits have been spread in large measure by the market, has transformed humans in ways that have made us less able to understand ourselves.

The assertion of the power of technology and the belief in the hard sciences, as put by our young engineer, is a defence of a particular form of rationality, mechanical rationality. This rationality was a product of the Enlightenment, indeed it defined the Enlightenment. Many assert that the emergence of Enlightenment thinking was the most fundamental advance for humanity; and of course, in some respects, it was.

After three or four centuries, however, Enlightenment thinking is holding us back from further progress. In affluent societies such as ours, it is only through philosophy, literature, psychology and aesthetics that humans can make progress.

### **The Enlightenment**

As this suggests I am interpreting automation to mean the products of science in general; so I am posing the question of whether humans can survive the scientific revolution. By 'survival' I do not mean physical survival but the prospects that fully realised human beings will flourish. For in affluent societies there is now the opportunity for the mass of people to finally live out their potential. But it seems that humans today, despite all of the assertions about individualism, are in fact more like automatons than ever. The market - its values, its constraints, its dominance by powerful corporations, its appropriation of culture - is increasingly denying us true autonomy, and without autonomy we cannot be truly human.

I am conscious that I am conflating the advancement of science with the spread of the market, but I am suggesting that a particular form of rationality underlies them both (although, of course, many scientists hold personal values contrary to those of the market).

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The Enlightenment marked the disjunction between two forms of knowledge. One form of knowledge is cognitive and deductive and involves drawing conclusions based on observations about the external world. This form of knowledge lends itself to transmission from one person to another through well-established rules. It is the form of knowledge that underpins scientific discourse (and economics).

The other form of knowing is based on direct or unmediated experience of the world, an intuition that something exists or is true. It is not possible for one person to transmit this form of knowledge to another, although talking or writing about it may remind the other of a similar experience or sense. It is evocative rather than analytical. Nor is it possible to test this form of knowledge against independently observed facts drawn from the external world.

Dualism refers to the rigid separation of the two forms of knowledge and the way in which internalisation of this separation determines how we interpret the world and understand our relationship to it. Our inner relationship to the world around us is not innate. Since the scientific-industrial revolution intuitive knowledge has been trivialised and dismissed, yet only intuitively can we appreciate the numinous character of the natural environment.

In addition, dualism has accorded one particular form of rationality – instrumental rationality – a privileged place. For both of these reasons – the rejection of intuitive knowledge and adherence to instrumental rationality – conventional economics is intrinsically hostile to environmentalism. The worldview of environmentalism arises from the reintegration of the two forms of knowledge so that reason is informed by intuitive knowledge, and the duality that divides our inner and outer worlds is transcended.

In Europe before the sixteenth century the dominant worldview was organic. People mostly lived in coherent, whole communities in which spiritual and material phenomena were not clearly differentiated. Individual needs were not so much subordinated to those of the community but found expression through those of the community.

This is not to deny that these societies were often exploitative and sometimes impoverished, but only to make the point that the way people experienced themselves

in the world was radically different from the way we experience ourselves today. The organic view of the world was reflected in people's innermost perceptions of themselves and their relationship with their environment. Morris Berman has written:

The view of nature that predominated in the West down to the eve of the Scientific Revolution was that of an enchanted world. Rocks, trees, rivers, and clouds were all seen as wondrous, alive, and human beings felt at home in this environment. The cosmos, in short, was a place of belonging (Berman, 1981, p. 16).

The separation of self, with its detached intellect, that came with the European Enlightenment was unimaginable to those who lived a 'participating consciousness'. Participating consciousness is the sense within the observing subject that the act of observation is not divorced from the observed, that the external world is alive and can be known through unmediated experience in a way different from that arising from deliberative reflection. It encompasses the sense that the transformation of the external world is also a transformation of the world within.

So for those possessed of participating consciousness, mind participates in the world instead of functioning as a detached organ of perception and cognition. Traditionally, indigenous people have understood that the support the natural world provides to their survival must be repaid by nurturing and recreating the land each day. In this way there is a mutually sustaining cycle between humans and their natural world just as there is for each creature that plays its own unique role in the reproduction of the cosmic cycle. In modern guise, this is perhaps the central insight of ecology.

The European Enlightenment opened the way for the scientific revolution and subsequent industrial revolution. The psychological impact of this transition has been at least as important as the transformation it has wrought on the physical world.

Writing in the seventeenth century, Descartes imagined a rigid division between mind and matter according to which 'there is nothing included in the concept of body that belongs to the mind; and nothing in that of mind that belongs to the body'. As this view spread, reinforced by scientific progress and material advance and the retreat of religious dogma, humans began to understand themselves in a wholly new way.

Fritjof Capra captures it thus:

The Cartesian division between mind and matter has ... taught us to be aware of ourselves as isolated egos existing 'inside' our bodies... (Capra, 1975, p. 45).

This was a truly radical idea, one that lay at the heart of the transition to the modern mode of self-awareness. It was also a great step towards the alienation of our conscious minds from our deeper natures and the sundering of our essential relationship with the natural world.

The triumph of rationalism, then, had a profound impact on how people as psychological beings were constructed. The estrangement between the religious and the physical worlds was also an estrangement within people between their inner and the outer worlds. This rupture saw the gradual victory of 'reason' over 'religion' in the eighteenth and nineteenth centuries, to the point where scientists, the embodiment of the powers of reason, were elevated to the position of saviours of the human race, a role previously reserved for the guardians of the spiritual world.

The division between an outer reality and a numinous inner world was unquestionably one of the most far-reaching philosophical transitions of human history. It changed fundamentally the way we think about ourselves and our place on the Earth.

In some vital ways the transition was liberating. It enabled the objective world to be seen and understood with a clarity hitherto impossible. It banished irrational, magical, primitive beliefs from the material world of production and commerce, beliefs that had constrained the understanding of the physical world and its technological potential. The liberating ideas of the Enlightenment permitted the fantastic material benefits of the scientific-industrial revolution in Europe, which, in a brief 200 years, has transformed our outer worlds in ways truly unimaginable.

This transformation has, of course, been a mixed blessing. The tragedy is that the flourishing of our outer worlds has been accompanied by the impoverishment of our inner worlds. While the separation of the objective and subjective worlds has seen the triumph of reason, it has also witnessed the denigration and trivialisation of our subjective reality. The distinction has gone beyond one simply of facilitating analytical processes applied to the material environment; it is one in which the objective world has been elevated to the plane of absolute truth, while the subjective

world, our inner reality, is dismissed as inferior, unscientific and, above all, irrational. We do not learn to recognise, develop and trust our inner worlds but to place our faith in the outer reality by striving for material riches and socially accepted forms of success.

### **Consciousness**

Thus, the story of the modern epoch is one of progressive disenchantment, a transition that involved a profound psychological loss. The world apprehended by non-participating consciousness becomes describable in terms of matter and motion, the twin conceptual pillars of the new 'mechanical philosophy'. Non-participating consciousness is characterised by the rigid separation of the observer and the observed, subject and object.

The psychology of non-participation and the self-definition it reflects are reproduced and reinforced every day. We are bombarded by the ideology of science, the notion that all is knowable, that human development is a process of progressive discovery of a finitely knowable universe. Every time we learn of a new discovery it suggests that a bit more of the unknown becomes known to us and is thereby conquered. We have even begun to unlock the mysteries of space, conquering it with space travel, extending the physical boundaries of the known, as though by looking ever further outward we can avoid the pressure to look inward.

This science of knowing is a science of control; the unknown is outside of us and therefore a threat. Our non-participation in the world is doubly reinforced by the activities that dominate our societies – work whose aim is to put objects into the market, and recreation. Watching television is the ultimate act of non-participation. The world is taken away, moulded, packaged and made 'more exciting' and then served up behind a glass screen.

All of this was driven by the rise of commerce and the specific form of rationality that accompanied it. The rationality of economics and commerce is in no sense timeless and universal. As the early sociologist Max Weber (1968, p. 376) argued, the essence of modern capitalism lies in its peculiar form of rationality. Market exchange and wage labour are the pillars of capitalism; market exchange is of its essence rational in the sense that all commitments other than pure economic self-interest are irrelevant.

The material progress of the scientific-industrial revolution was built on the idea of calculability. Weber stressed the extraordinary importance of calculability as the basis for efficient capital accounting and thus profit making. Rational decision-making depends wholly on the ability to calculate outcomes. There can be no place for intuition.

The rationality of our economic world, therefore, is peculiar to the economic system that emerged with the scientific-industrial revolution. The dominance of instrumental rationality has seen a psychological shift of historic importance, one with no precedent in the history of humankind. The most important of our daily activities lost their sacred character; as a result, our inner worlds were further banished from our conscious minds and trivialised to the point where most of us are reluctant to discuss our inner worlds publicly and even to acknowledge them to ourselves. This is not to decry the value of rationality as such, but to recognise its specific form in Western society and, above all, to point to its crippling effects when it is allowed to dominate all else.

The new consciousness of non-participation transformed the way we see and understand the natural environment. If we view ourselves as radically separate from it, Nature takes on value only to the extent that it satisfies human needs and desires. This is the explicit assumption of orthodox economics in which 'goods' have value only to the extent that people are willing to trade them in the marketplace. The natural environment becomes a collection of more or less tradable resources.

The separation of our selves as beings from the natural world has meant that our attitudes to the environment are wholly different from those of peoples whose cultures and modes of awareness grew out of the land. Since the Industrial Revolution in Europe, European attitudes have been built on a one-way relationship of exploitation in which we have unilaterally assumed a moral right to take from the land without a reciprocal obligation to nurture it. For if the earth is already dead we cannot kill it.

### **Economics**

Modern economics remains trapped in the mechanical view of the world that was propagated especially by nineteenth-century science. The mechanical view is founded on the analytical process, that is, the process in which the object of study is

broken down into its constituent parts in order to understand how it works. Here we simply observe that the essence of the human, let alone their relationship to the world around them, cannot be found by analysing our constituent parts, even if these parts are assembled into an extraordinarily complex model. For the essence lies in its wholeness. Goethe expressed it precisely:

To docket living things past any doubt  
 You cancel first the living spirit out:  
 The parts lie in the hollow of your hand,  
 You only lack the living link you banned.

Moreover, modern science is not the rational, value-free science it seems to be but is actually driven by a powerful emotional need, the need to be detached from one's feelings. (The same can be said of economics.) The retreat to the intellect is an emotional response to fear. Morris Berman stresses this in his discussion of academic history, observing that the Scientific Revolution saw an intellectual rejection of the sensual, visceral appreciation of the world.

Yet if the truth be told, it is not that the emotional life got repressed, but that one particular emotion triumphed above all the rest. "Emotionless" activity, eg., scientific and academic detachment, is driven by a very definite emotion, viz. the craving for psychological and emotional security (Berman, 1990, pp. 112-113).

Perhaps it is the imposition of this psychic distance between the intellectual and the visceral that for most people makes economics so boring, the 'dismal science' in which sensual life itself is banished. Economics texts display a form of obsessive rationality in which the feeling natures of 'economic agents' is suppressed and a deep split is posited between their intellectual and emotional selves. Strict instrumental rationality and denial of feelings is held up as the most laudable quality of economic analysis, captured in the idea of 'rigour'. The stress on rigour helps to explain why the profession is a largely male preserve, for the emotions of modern patriarchy – the need to control, competitiveness, the pursuit of omniscience and obsessive rationality – are also those of modern economics.



This leads to some bizarre positions. On the vital question of how to approach climate change, the most influential economist is William Nordhaus whose explicit position is that we should decide to reduce greenhouse gas emissions only if cost-benefit analysis or an optimisation model concludes that the net benefits to humans are positive, where the relevant effects are essentially impacts on economic output (Nordhaus and Yang, 1996). It is a very short step from this intellectual framework to the policy and political conclusion that measures to protect the environment are not worthwhile, a step taken by Danish 'skeptic' Bjorn Lomborg (2001). Indeed, depending on how the numbers turn out, it would be entirely consistent with this mode of analysis to conclude that the best course of action is to accelerate the emission of greenhouse gases so that we may enjoy the net benefits of a hotter planet sooner.

The essential distortion of the modern economists' way of inventing the world lies in the very construction of the individual and from there the relationship of the individual to the world. The human agent is reduced to a repository of instrumentalist desires which generate a series of actions. These actions – buying and selling goods – result in quanta of happiness that are deposited in the place occupied by the individual. Hopelessly trapped in the world of things, economics imagines that the translation of the activities of the outside world into inwardly experienced human welfare – an intensely subtle and obscure process – is effected by one simple factor, the quantity of goods consumed.

The tragedy of modern economics is not so much that it operates purely at the level of instrumental rationality but that it reinforces society's official insistence on the validity of instrumental rationality to the exclusion of other forms of rationality and other modes of awareness. Yet no matter how insistently this form of rationality is thrust upon the world by orthodox economists, businessmen and neo-liberal policy makers, the symbolic world cannot be suppressed.

We are each pre-rational, rational and trans-rational. That is, despite a desire to run our lives according to the rules of rationality alone, and no matter how skeptical we are about manifestations of the numinous world, each of us is capable of radical intuitive insight and states of higher consciousness that can forever transform our understanding of the world.

## **Environmentalism**

The wellspring of environmentalism is intuitive knowledge. It is impossible to accept instrumentalist rationality and be an environmentalist at the same time and this is why in recent years the environment movement has provided a most serious challenge to the political hegemony of orthodox economics.

If there is a central philosophical position that is articulated by the environment movement, it is its opposition to anthropocentrism, the idea that the world revolves around humans, and that natural resources are valuable because they serve our needs. This instrumentalist idea is so fundamental to conventional economics that it is never raised as an issue. But within the environment movement there is a strong feeling that sentient beings other than humans, the ecosystems of which they are a part, and the whole of Gaia have value for their own sake.

Yet conservationists have often had recourse to the instrumentalist and anthropocentric arguments of the economists. They have emphasized the impact of the degradation of the natural environment on our accustomed material living standards. They have called for protection of biodiversity for the useful drugs it may yield, and point to the decline in GDP that ozone depletion and climate change may cause. They have even put a dollar value on the ecosystems of the world. At times, there may be good political reasons for fighting on the terrain of the economists, but environmentalism at a deeper level challenges the ethical principles that underlie prevailing attitudes to the natural world. It suggests our current predicament is due fundamentally to a set of beliefs about ourselves and the world that is hostile to the natural environment and therefore, if we could only recognise it, hostile to ourselves.

This emerging ethic – one that centres on our duty to act as custodians of the Earth's resources – has arisen not out of processes of rational analysis, but out of an understanding of how we feel about ourselves and our relationship to the world. Indeed, after more than two centuries of domination by the rationalist obsession, this new ethic is reaffirming the validity of acting according to the imperatives of our feeling natures as well as listening to the arguments of the intellect. There is a mode of awareness beyond the rational that can reveal knowledge at a level inaccessible to even the most brilliant rational mind, a mode of awareness available to all of us and

which provides the essential motive for the global environment movement. The cultivation of such a 'discerning mysticism' is, of course, anathema to economics.

### **Concluding comments**

We have become accustomed to believing that science and technology will solve our problems. But in affluent countries our problems are no longer ones of material deficiency. Quite the opposite. Industrialised countries are now beset by the sicknesses of affluence - overwork, overconsumption, massive waste, psychological disorders, social disintegration and meaninglessness. To be sure, a minority remains poor. But if we cannot solve poverty with our prevailing levels of wealth, you would have to be naïve to believe that more economic growth will do it. We do not lack the *ability* to eliminate poverty, only the *willingness*. And the richer we become the less willing we appear to be to do what is needed.

I think perhaps this is why at this conference we have not asked ourselves whether science and technology can solve our problems, but whether humans can survive more science and technology. We must also ask whether humans can survive more economics.

For it is the excessive emphasis on these aspects of the outer world that has seen the shrivelling up, the trivialisation of our inner worlds, with the effect of robbing us of a whole world of knowledge that could guide us to a better future. There are early signs that we are at last beginning to throw off the obsession with rationality that the Enlightenment brought and to seek out a balance between intuitive and rational knowledge, between the inner and the outer, between intrinsic value and extrinsic value.

The European Enlightenment saw scientific rationality abolish the pre-rational world of magic and superstition; but it also jettisoned the sense that the world around us is alive and intentioned, a sense that permitted humans to participate in the world in a way that scientific consciousness denies us.

Of course, some spiritual traditions speak of enlightenment in a radical different way. In Buddhism, enlightenment describes a radical insight into the essence of things, a sudden realisation that we are each no more than a fragment of a unified cosmos or

single consciousness. The enlightened one discards the straightjacket imposed by rationality, understanding that it is a form of consciousness that, for all of its benefits, is confined to the outside world, the phenomenal world, and that to see into the deeper nature of things we need to transcend that rationality.

So the European Enlightenment that prefigured the victory of science over religion and superstition is now itself being superseded by another, all-encompassing, enlightenment, one that understands that rationality and its products in science is only a partial way to approach human consciousness. Understanding this, and living from that understanding, defines the path to a true human flourishing.

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