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Respecting and Transcending Nature Transcript

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**Respecting and Transcending Nature:
J. R. R. Tolkien's Concerns about Technology**

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In this lecture, I want to reflect on the difficult yet important question of technology and the transformation of our world. I know that many of you will have already thought about this, and I hope that I will be able to provide some further grist for your intellectual mills. Although I will be interacting with several significant figures in this lecture, the most interesting of them is J. R. R. Tolkien, best known for his first book *The Hobbit* and his later epic *The Lord of the Rings*. Those of you who have read these will probably already have a good sense of the nature of Tolkien's anxieties about technology, which are expressed in the plotlines and characterizations of these works. The Hobbits are an innocent people, who live close to the world of nature, and have no concern to dominate their neighbours or get involved in warfare. They want to grow crops in the fertile plains of Hobbiton, and so develop technologies appropriate to this modest task. But these are very limited technologies, designed to dig the ground, to harvest crops, and to prepare food. Technology is about the remaining close to nature, and enhancing human wellbeing.

Now let's contrast this with Tolkien's rather dark and menacing descriptions of the development of technology in the land of Mordor. In Tolkien's Elvish Sindarin language, Mor-Dor means Dark or Black Land. This has led some to suggest that Tolkien may have based Mordor on England's "Black Country" - an industrialized wasteland, where the processes of technology have turned a beautiful countryside into a barren scene of desolation. Some of you may have been to see the 2014 exhibition "The Making of Mordor" at Wolverhampton Art Gallery which explores the possible links between Tolkien's fantasy fiction and the Black Country's industrial past.

In her sassy autobiographical novel *How to build a Girl* (2014), partly set in Wolverhampton, the author Caitlin Moran portrays her father as reflecting in the early 1990s on the transformation of northern England from verdant rural landscapes to toxic industrial brown sites, using Tolkien's novels to frame his concern about the degradation of the Black Country.^[1]

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[That's what your Lord of the Rings is about. Tolkien was from round here. He was writing about how the industrial revolution turned the Midlands from Hobbiton to Mordor.](#)

[Yet The Lord of the Rings is not merely about the destruction of nature; it is about the development of technology as an instrument of oppression, control, and destruction. Remember, the Hobbits had a very basic technology, designed to till the earth. Saruman uses technology to develop weapons, and destroy those who stand in his way. Technology becomes the tool of those who want to oppress and destroy, not those who want to promote human wellbeing.](#)

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[Now we'll come back to Tolkien in due course. But you can see the issue that he's worried about. Technology can be used to heal and to destroy. The philosopher John Gray made a similar point in his *Straw Dogs* \(2002\), an iconoclastic book which caustically debunked bland humanist philosophies. For Gray, "humans cannot live without illusion" - such as a blind faith in progress, or the goodness of human nature.^{\[2\]} Humanists may like to delude themselves that they have a rational view of the world; yet their core belief in moral progress is a "superstition", which is arguably further from the truth about the human animal than any of the world's religions. Progress in science and technology is subservient to selfish and corrupting human agendas, and does not inevitably lead to social and political progress. "Without the railways, telegraph and poison gas, there could have been no Holocaust."^{\[3\]} Now there is an element of overstatement here; yet there is also an element of truth. Weapons of mass destruction are human creations, based on the application of science to the advancement of nationalist or ideological ends. It's no accident that Primo Levi, one of the few survivors of Auschwitz, spoke of "inhabiting the century in which science became warped", creating a "gigantic death-dealing and corrupting machine."^{\[4\]}](#)

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[Science is one of the greatest forces within today's world. It's capable of doing some great things. But it's opened the door to some horrors. I remember a debate at Cambridge University some years ago on the place of science in today's world. One speaker declared that science had saved the human race. It had given us penicillin and new medical techniques for saving and extending life. He was immediately challenged by angry audience members to tell the full story, not just the bits that fitted his Panglossian view of science. What about atom bombs and other weapons of mass destruction? Weren't those also produced by scientists? It was an uncomfortable moment. It was as if a curtain had been drawn aside, allowing us to see a dark secret that everyone preferred to keep hidden.](#)

The moral ambiguity of science arises partly because science is ethically blind, and partly because it is undertaken and applied by human beings, with morally conflicting principles. My own reflections on this theme go back to the time when I was studying chemistry at Oxford University in the early 1970s. At that time, I took a strongly optimistic and positive attitude to natural sciences, seeing it as an intellectual undertaking which was wonderful in its own right, and which also opened the way to the extension of human life and the elimination of disease and poverty. And I was right about that – but only in part.

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The complexity of things began to dawn on me as I worked on synthetic routes for complex organic compounds. The leading authority on this subject was the Harvard scientist Louis Frederick Fieser (1899-1977), whose classic series *Reagents for Organic Synthesis* gave me lots of ideas for my own work. Fieser and his wife pioneered the artificial synthesis of a series of important naturally occurring compounds, including the steroid cortisone and Vitamin K, which was needed for blood coagulation.[5] The Fiesers' brilliant synthetic procedures made medically important chemicals much cheaper and more widely available, with highly beneficial outcomes for patient care.

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It was only later, however, as a graduate researcher in Oxford University's Department of Biochemistry, that I learned that Louis Fieser had also been involved in another project during the Second World War. The U.S. Army urgently needed a chemical weapon suitable for eliminating troop concentrations in jungles and firebombing cities in the Pacific war theatre. Fieser and his team of chemists at Harvard won the contract to develop this weapon of mass destruction. They invented "napalm", a petroleum gel that stuck to buildings and human bodies. Once ignited, it could not be removed or extinguished. Tests by the U.S. Army's Chemical Warfare Service confirmed it was an ideal weapon for firebombing Japanese cities. Napalm proved to be a phenomenal military success, killing more Japanese civilians than the two atomic bomb blasts of 1945 combined.[6]

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When I first learned about this, I found myself deeply conflicted about Fieser. How could someone who had pioneered ways of synthesizing chemicals that would extend human life and enhance its quality also create a chemical that was specifically designed to end life on an industrial scale, in a horrifically inhumane manner? The impact of napalm on Japanese soldiers and civilians was psychological, not merely physical, evoking a horror of being burned alive in a hideously painful manner.[7] My perception of Fieser changed, becoming darker and more unsettled, partly reflecting my difficulty in holding these aspects of his professional career together in my mind, and partly because this triggered off a more troubling question. What if this moral ambiguity in a leading scientist was also embedded within science itself?

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Now this concern is nothing new. After all, many physicists experienced similar anxieties about the military use of their science to develop nuclear weapons. Gradually, I came to the conclusion that science was not good; it was neutral. It was something capable of being used for good or for evil. It all depended on the people who were using it, and their motivations. *Science* is morally ambivalent because *human beings* are morally ambivalent.

So where do we go from here? There are some fascinating questions here, and I am going to try and open some of them up. Obviously, I will make it clear what I think, but my real purpose in exploring these issues is to help you think these things through for yourself. Here are the topics that I think arise from this.

- How can we – indeed, *should* we – try to see the natural world as something special and wonderful, rather than something that we simply exploit for commercial gain through technology?
- How do we respond to the possibility of human technological enhancement – in other words, to the possibility that we might be able to extend our natural powers and lifetimes through technology? This important trend is often referred to as "transhumanism".
- How can we – indeed, *should* we – check the tendency to use technology to develop tools of destruction, rather than enhancement?

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So let's begin to look at the first of these questions. In a perceptive essay entitled "The Illusion of the Two Cultures", the American evolutionary anthropologist Loren Eiseley argued that science and art – and, I would add, religion – are born of the same mind and are driven by the irresistible power of the human imagination.[8] Eiseley – sometime Professor of Anthropology and History of Science at the University of Pennsylvania. Eiseley expressed concern that the contemporary academy, through a relentless enforcement of disciplinary boundaries and its cult of "professionalism", was draining a life-giving imaginative power from the sciences. Human beings had come to trust as real only those objective truths revealed by science and the artificial world which they themselves had constructed. The category of mystery was banished or declared to be redundant, meaning at most something that is not presently comprehended by science. But what if there was more to things than this?

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Eiseley was critical of what we might call a detached, third-person approach to science, which treated nature as an impersonal object to be investigated – rather than as something to be respected, loved, and admired. There had to be a way of restoring this sense of wonder, and reconnecting with a sense of being part of something greater. Human beings have the potential for stereoscopic vision, in that they can discern meaning within the world, and not simply figure out how things work. One of Eiseley’s concerns was that technological progress was turning us into one-eyed creatures, capable only of envisioning a reduced world, in which things are defined in terms of their function. Today’s “secular disruption between the creative aspect of art and that of science” represents an unnecessary and reversible fracture, dependent for its imaginative plausibility on “the deliberate blunting of wonder.”[9]

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In his best-known essay “The Star Thrower”, [10] Eiseley describes walking along a beach and encountering a boy throwing stranded starfish back into the ocean. Eiseley initially regarded this as pointless. “You can’t save them all, so why bother trying? Why does it matter, anyway?” The boy thought otherwise, as he picked up a stranded starfish. “It made a difference to that one”, he said, throwing it back into the sea.

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As a scientist, Eiseley was perfectly aware that he should have no compassion for those starfish, as if they were reflective beings that cared whether they lived or died. Darwinian Theory held that evolutionary progress required death; so why interfere with this natural process? Yet as a human being, he found himself realizing that, as a scientist, he had missed something. “It was as though,” he writes, “at some point the supernatural had touched hesitantly, for an instant, upon the natural.”[11] The next day, Eiseley was on the same beach, throwing stranded starfish back into the ocean. It was, he mused, both an act of renunciation of his scientific heritage, and an embrace of a greater vision of things.

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Perhaps most importantly, Eiseley – as an evolutionary anthropologist – held that there was something about human nature that transcended its biological origins. The human sense of wonder held the key to the deepest questions of life. We are, he wrote, “searching for some transcendent realm” beyond ourselves. We long to understand what we find so beautiful and mysterious, suspecting that it might unlock access to a greater and deeper vision of reality. Many experience a sense of standing on the threshold of a partly-glimpsed world, which seems to lie beyond our everyday world, yet is somehow hinted at by what we observe around us and experience within us.

The roots of science ultimately lie more with this sense of wonder at the beauty and grandeur of our world than in a desire to understand it, still less to master it and redirect it to our own purposes. It is, of course, impossible to separate these three elements of the scientific enterprise. We seem to move inevitably from wonder at the beauty of nature through gaining an understanding of how nature works through to manipulation and exploitation of nature which results from this understanding. Some will see this as a necessary transition from merely intellectual reflection to the more serious business of ensuring human survival; others will see it as a loss of innocence.

I have spoken of the manipulation of nature. So let’s focus on one specific aspect of this general theme: can we change human nature? Can we manipulate ourselves to eliminate undesirable features, and enhance desirable ones? After all, we already manipulate plants and animals in this way to enhance their resistance to disease and their productivity. Why not do the same for human nature – either through selective breeding, or through some kind of technological enhancement of the human body.

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Classic forms of humanism, such as those which emerged in the Renaissance, emphasised the beauty and elegance of human nature, taking delight in the complexity of the human body and the range of human achievements. More recently, however, schools of thought have emerged which see human nature as a “work-in-progress, a half-baked beginning that we can learn to remould in desirable ways.”[12] If the term “human” designates our present situation and capacities, we need to reflect how we can become “posthuman”, transcending our biological origins through technology.

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We’re all familiar with the way in which we might be able to use selective breeding to “improve” the human race – for example, by breeding out certain genetic deficiencies which make people more prone to disease. Yet there is another option for the transformation of humanity which avoids the social stigma that is now attached to eugenics – namely, the technological enhancement of humanity. The “transhumanist” movement advocates “fundamentally improving the human condition” through technology, thus allowing us to “eliminate ageing and to greatly enhance human intellectual, physical, and psychological capacities.”[13] Through the creation and

application of technology, human beings now have the capacity to transcend their biological limits. Yet awkward questions remain. Nick Bostrom, one of the most significant and influential transhumanist philosophers, rightly queries the simplistic equation of technological advances with the notion of progress itself.[14]

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It may be tempting to refer to the expansion of technological capacities as “progress”. But this term has evaluative connotations – of things getting better – and it is far from a conceptual truth that expansion of technological capabilities makes things go better.

What sort of technological enhancements might this mean? Well, here’s one example. It will one day be possible to develop artificial red blood cells, capable of transporting oxygen and carbon dioxide in human blood. These artificial cells would not be limited by the materials and pressures that arise naturally, thus enabling a performance far beyond the range of natural red blood cells.

Some will see this intervention in human as “playing at being God.” This is a fair point, although it needs careful nuancing. After all, human beings already depend extensively on scientific interventions – such as drugs and surgery – to promote the quality and extend the range of our lives. The question under discussion is whether transhumanism represents an extension of existing practices, or a new approach altogether, moving us into unfamiliar and disturbing ethical and social territory.

Here’s another example. Transhumanists point out the importance of “evolutionary lag” – the slow response of natural evolutionary responses to changes in our environment. Technology now allows us to insert certain genes for specific traits, thus by-passing evolutionary lag. A good example of this issue is lactose tolerance. While the development of lactose intolerance is adaptive for mammals since it makes weaning easier, increasing use of dairy products in human societies over the last 5,000 years have given rise to a significant problem for many people. This development is so recent in evolutionary terms that genetic traits which deal with the problem have to diffuse to all human populations. So why not insert a gene that has a desirable effect in this situation into the human genome, or find some way of mimicking its effects?

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Nick Bostrom argues that such judicious technological enhancement of humanity might lead to the emergence of “posthumans” with some or all of the following characteristics.[15]

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1. Individuals could expect to live for more than 500 years;
 2. A large section of the population would have cognitive capacities that are more than 2 standard deviations above the present human maximum;
 3. Psychological suffering becomes rare.

There are obvious questions here. For example, is such a technologically enhanced human being actually something other than human? And are these technological enhancements capable of being transmitted genetically? If so, are we really talking about the emergence of a new species? Will “posthumans” displace humans?

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Transhumanists often assume that technological augmentation of natural human cognitive capacities will lead to moral excellence, in effect regarding selfishness and our innate tendencies towards destructive patterns of thought and action as due to mental retardation that will be remedied by boosting our cognitive capacities. It’s an interesting suggestion. Yet its status is that of an unevidenced belief, a charming aspiration, which may lack any grounding in reality. Victor Ferkiss, sometime Professor of Government at Georgetown University, expressed a deep-seated concern a generation ago that has perhaps become even more important today, given the rapid pace of technological development.[16]

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What if the new man combines the animal irrationality of primitive man with the calculated greed and power-lust of industrial man, while possessing the God-like powers granted him by technology? This would be the ultimate horror.

That’s one of the concerns that we also find in Tolkien’s writings. What if human moral instincts, or our capacity to enact them, are flawed? Modern technology allows us to do things that were previously inconceivable. They might possibly work out well. But they might equally well work out very badly indeed.

Earlier, I touched on the problem of weapons of mass destruction. Some have suggested that Tolkien’s *Lord of the Rings* is really about the atom bomb – a weapon so destructive that nobody dares to use it. I don’t agree with this interpretation, although there are certainly interesting parallels between the ring of power and nuclear weapons. In trying to make sense of Tolkien’s deep foreboding about technology, I think it is much more helpful

to look at his experience of technological warfare. Tolkien was a classic student at Exeter College, Oxford at the outbreak of the First World War. His family were unhappy that Tolkien did not volunteer immediately for military service, but Tolkien decided to finish his degree before volunteering for military service in the summer of 1916. He joined the Lancashire fusiliers as a Second Lieutenant, commanding enlisted men who were drawn mainly from the mining, milling, and weaving towns of Lancashire. He was posted to the Western Front just before the disastrous Somme offensive, in which new military technology – especially the machine gun – had a devastating impact on the British attempt to storm the German trenches.

Tolkien witnessed at first hand the horrors and carnage of the “Great War”, and lost many close friends. As he later remarked “By 1918 all but one of my close friends were dead”. It is quite possible that some aspects of Tolkien’s depiction of the wastelands of Mordor may have had its origins in his experience of the horrors of the Western Front, especially during the Somme offensive. Tolkien himself survived, mainly due to the persistent reoccurrence of trench fever, which led to him being invalided back to England.

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Tolkien saw technology as depersonalizing war, making it a battle between machines, with human beings as the main planners and casualties of this new form of warfare. In a 1945 letter to his son Christopher, written in January 1945, during the final stages of the Second World War, Tolkien again lamented the mechanization of war.[17]

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Well the first War of the Machines seems to be drawing to its final inconclusive chapter – leaving, alas, everyone the poorer, many bereaved or maimed and millions dead, and only one thing triumphant: the Machines. As the servants of the Machines are becoming a privileged class, the Machines are going to be enormously more powerful. What’s their next move?

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Tolkien’s love of Anglo-Saxon literature highlighted the importance of the hero – the individual warrior who showed bravery and honour in face-to-face conflict. How did this relate to the anonymous hail of bullets, which destroyed individuals as a matter of statistical probability, not personal engagement? Tolkien, of course, formed a close personal friendship at Oxford with C. S. Lewis during the 1920s. Their love of classic English literature was one bond between them; another was their experience of the anonymized death of trench warfare. Lewis found himself idealizing the ideas of chivalry, evident in his descriptions of battles in the *Chronicles of Narnia*. This passage from *The Hobbit* summarizes Tolkien’s concerns about technology and warfare rather well:[18]

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Now goblins are cruel, wicked, and bad-hearted. They make no beautiful things, but they make many clever ones... Hammers, axes, swords, daggers, pickaxes, tongs, and also instruments of torture, they make very well, or get other people to make to their design. ... It is not unlikely that they invented some of the machines that have since troubled the world, especially the ingenious devices for killing large numbers of people at once, for wheels and engines and explosions always delighted them.

For Tolkien, technology is not necessarily evil in itself; the problems lie with the human motivations that lie behind its development. Although Tolkien’s approach is not entirely clear at some points, he seems to see at least some aspects of the human fascination with technology as arising from a lust for the Creator’s own power of creation. Technology allows humanity to become like God.

Tolkien thus distinguishes between useful and destructive technologies. As you may have noticed from some of the quotations I have just provided from Tolkien, he uses the phrase “The Machine” to refer to technology-as-coercion, rather than technology as such.

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Tolkien here alludes to the use of technology for the purpose of dominating and coercing other wills.[19]

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[The Machine refers to] all use of external plans or devices (apparatus) instead of development of the inherent inner powers or talents – or even the use of these talents with the corrupted motive of dominating: bulldozing the real world, or coercing other wills. The Machine is our more obvious modern form though more closely related to Magic than is usually recognised.

Let me stand back here, and tease out a theme which I see in Tolkien’s reflections. Alongside a commendable human desire to understand our world, there is perhaps another less attractive side to our existence – the desire to control our world, and deploy this power to our advantage. Let me give you two examples to illustrate this general point.

We have already considered the idea of “social Darwinism”. The basic idea is quite simple. Once we understand the process by which humans evolve, we can take charge of this process, and redirect it for our own ends. Human beings alone have the intelligence and capacity to change the direction of our own development. The basic transition is from understanding how a natural process works to taking control of this, and using it for our own ends. I have already explored some of the moral issues that arise from this – such as the allegedly progressive outlook of the 1920s, which tried to prevent certain types of people from reproducing, because of the damage that this might inflict on the future survival potential of the human race.

Let’s take another example, which is perhaps less well known, but I think is even more interesting. Sigmund Freud is remembered for his emphasis on the influence of the human unconsciousness on the way in which we think, both individually and collectively. Other writers, such as Gustave Le Bon, developed theories of “crowd psychology”, which helped make sense of the way in which groups of human beings behaved in ways that differed from that of solitary individuals. The psychology of a crowd differs from and interacts with that of the individuals within it. In the 1920s, Freud’s nephew – Edward Bernays – took this a step further. If we know how crowds think, we can influence what they think. Again, we see the same pattern: understanding how a process works allows us to take control of that process. Bernays used the term “public relations” to refer to the process of taking control of what people thought.

One of his most successful applications of this approach was his victory over on one of the biggest social taboos of the early 1920s: women smoking in public. Women were only allowed to smoke in designated areas, if at all. Bernays organized a parade in 1929 in New York City which featured famous models holding Lucky Strike cigarettes, which Bernay designated “Torches of Freedom.” The press coverage of the event – carefully managed by Bernay – proved decisive in changing public attitudes.

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After the Second World War, Bernays tended to see public opinion as inherently dangerous. What happened in Germany under Hitler showed how the views of a society could be harnessed and controlled by a corporate elite, who understood how its ideas could be manipulated, and directed towards benevolent ends. Here’s an extract from his 1928 work *Propaganda*:^[20]

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The conscious and intelligent manipulation of the organized habits and opinions of the masses is an important element in democratic society. Those who manipulate this unseen mechanism of society constitute an invisible government which is the true ruling power of our country. We are governed, our minds are molded, our tastes formed, and our ideas suggested, largely by men we have never heard of.... It is they who pull the wires that control the public mind.

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Yet there is evidence that the Nazi rise to power during the 1930s made use of precisely the theories that Bernays had developed in the 1920s, especially in his 1923 work *Crystallizing Public Opinion*. In his autobiography, Bernay recalls his utter dismay as he heard of how Joseph Goebbels had recognized the importance of his ideas, and used them in bringing about the Nazification of Germany.^[21]

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Karl von Wiegand, foreign correspondent of the Hearst newspapers, an old hand at interpreting Europe and just returned from Germany, was telling us about Goebbels and his propaganda plans to consolidate Nazi power. Goebbels had shown Wiegand his propaganda library, the best Wiegand had ever seen. Goebbels, said Wiegand, was using my book *Crystallizing Public Opinion* as a basis for his destructive campaign against the Jews of Germany.

Let’s come back to the point I made earlier about potential transformation of humanity. As we saw earlier, the transhumanist writer Nick Bostrom argues that this kind of technological enhancement of humanity could lead to the emergence of “posthumans” who could expect to live for more than 500 years, and would have significantly enhanced cognitive capacities. Let me note three concerns that seem particularly significant to me.

1. Technological enhancements like these are expensive, and their implementation will therefore merely increase global inequality. Those with the financial means will be able to extend their lifespans; everyone else has to continue as normal. The first posthumans may well turn out to be wealthy Americans.
2. A significant expansion of human lifespan immediately raises the concern noted by Thomas Malthus in his *Essay on the Principle of Population* (1798). Given that the earth has limited resources, it can only sustain a certain number of people. Although Malthus could not have foreseen the development of chemical fertilizers and genetically-modified crops, giving enhanced yields, his point remains valid. Earth’s capacity to produce food limits the size of the population. If human life expectancy rises to 500 years, the overall population must be reduced. Otherwise, the harsh control mechanisms so grimly noted by Malthus – war and famine – would kick in.

3. The assumption that there is a direct correlation between cognitive capacity and moral discernment is contestable. What if technological enhancement merely assists and enables humanity's seemingly inescapable and utterly irrational tendency to debase and destroy its own best achievements? To use more theological language, does the rise of Transhumanism offer an escape from sin? Or does it make us even more vulnerable to it?

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None of these questions are easy to answer; yet they all need to be asked. It is far from clear that technological advance will lead us to wiser and better decisions than we have made in the recent past. Perhaps that helps us understand why some are suggesting that any possible enhancement of human *technological* capacity means that we also need a corresponding *moral* enhancement, if we are to cope with the new challenges that we will inevitably face.[22] But who will reprogramme us? After all, these "moral enhancements" will be developed and chosen by morally questionable human beings, who could easily adapt them to advance their own vested interests and concerns.

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We might be on the threshold of a terrifying Orwellian world in which powerful groups reprogramme us to replicate their beliefs and values, making critique of these impossible through a redirection of human rational processes. Aldous Huxley's *Brave New World* (1932) is a troubling account of such a development, in which human beings were reprogrammed in "hatcheries and conditioning centres," to conform to the will of their controllers, including the generation of people of lower intelligence in the "Social Predestination Room" to facilitate their conformity to the needs of the World State. Instead of having to think for themselves, they would simply conform to the group-think of the State.

Anyway, would such moral rebooting actually change things? The sad truth is that humanity has messed up this world more than any other animal. We have managed to change global climates, with unpredictable and potentially damaging long-term results; we have developed nuclear and pathological weapons capable of wiping out entire populations; and we have conducted campaigns of genocide unparalleled elsewhere in the animal kingdom. Will such enhancements cure us of this fatal flaw? Or will it just make it even easier for us to mess things up even more?

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But can technological enhancement lead to immortality? Earlier, I mentioned the philosopher John Gray. For Gray, one of the core human obsessions concerns immortality. "Longing for everlasting life, humans show that they remain the death-defined animal." [23] Yet even those who do not share this fixation on human mortality are obliged to recognize that there are limits placed on our lifespan. We may seek to extend our lives; yet this will simply add further to the stress on our planet's limited resources, and make war or famine even more likely. So why this anxiety in the first place?

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Many answers have been given. The sociologist Peter Berger suggested that human mortality was the ultimate unbearable truth, pointing to the terrifying meaninglessness and chaos which characterized human existence in this world. Society tried to defend and protect people from this unbearable knowledge, shielding them against this terror by asserting the existence of meaning and order in a seemingly meaningless and chaotic universe.[24] Human beings need to be protected by illusions of meaning against this meaningless, chaotic realm of disorder, disintegration and death. J. R. R. Tolkien spoke of human beings spinning "wish-fulfilment dreams" to console and cheat "our timid hearts," while seeing this human instinct as a sign of some greater horizon that called out to be explored.[25] This human reluctance to accept our own mortality also stood at the heart of Ernest Becker's Pulitzer Prize winning monograph *The Denial of Death* (1973). For Becker, human beings are driven by the desire to deny death, transcend it, or create meaning in its face.

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History is generous in its benevolent provision of amusing examples to illustrate human attempts to deny, cheat, or conquer death. One of the most entertaining is the attempts made by the Soviet "Immortalization Commission" to preserve Lenin's body after his death in 1924 - not merely as a potent symbol of the Russian Revolution, but as an assertion of the human capacity to achieve immortality under Marxism-Leninism.[26] Leonid Krasin was an engineer who believed that the dead could be technologically resurrected. Who better than Lenin deserved to be the first to share this privilege? In a series of remarkable experiments, Krasin used refrigeration to preserve Lenin's body, not merely so that its public display might edify the Soviet masses, but by the demonstration of the Soviet capacity to vanquish death. After all, the Soviet Union arose through the forceful overthrow of imperial Russia. Why not end the tyranny of death in the same way? Christianity talked about the resurrection of the body. Marxism-Leninism could do better than that - it spoke of the technological preservation of the body. It might not amount to the hope of eternal life, but at least it offered the hope of eternal physical preservation.

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Sadly, though perhaps not surprisingly, Krasin's primitive cryogenic experiments were doomed to failure. Lenin's body soon began to show unmistakable signs of decay. Krasin demanded that a better refrigerator should be imported from Germany to stop this process of deterioration. Yet it continued unabated and irresistibly. In his death, Lenin demonstrated his true humanity. His nose began to lose its shape, and his eyes began to recede into their sockets. In the end, the only solution was to re-embalm Lenin's body on a regular basis, and hope nobody would notice that death had neither been defeated nor transfigured.

The advance of knowledge within a technocratic Soviet Union would make it possible for humanity to conquer death without the need for divine assistance. The problem was that it failed to deliver on this core promise. Transhumanism has, of course, taken up this challenge, with a promise to extend human life. Yet there is no talk of immortality. Wisely, transhumanism has limited itself to the postponement of the inevitable, rather than promising the impossible.

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Now Tolkien's concerns about technology could easily be dismissed as some form of Luddite reaction against mechanical progress. I take that point. But I cannot help but feel that he raises some important questions about our human future, which we need to consider carefully, especially in the light of the pragmatic attitudes of our culture. Let me bring this lecture to a close by telling you a story that seems to frame these concerns rather well. In 1942, Stanford University in California opened its new School of the Humanities. The celebration of that event was somewhat muted, as the United States was now caught up in a new global conflict, having declared war on Japan, following the bombing of Pearl Harbour in December 1941.[27] John W. Dodds, the first Dean of the School of Humanities, conceded it was not a particularly suitable moment to celebrate human cultural achievements. Why establish "an outpost of the humanities" and talk about the "place of culture in our civilization" when that civilization itself seemed to be teetering on the brink of disaster?[28]

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Dodds acknowledged the point. The disasters into which the world had lurched in recent decades seemed to speak more of inhumanity and insanity than of the great human cultural virtues. Dodds offered a sober account of the enigmas and inconsistencies of human nature, above all the need to confront our capacity for destruction.

[Human technological] development has been accompanied by a progressive dehumanization of society ... Man has gained mastery of his environment but he seems to be less and less master of himself. Today we see him turning the weapons of his brain against himself—groping, amid the noise of a tottering civilization, for some faith in man to which he can cling.

That was Tolkien's big concern - that a technology designed by human beings to master the world might end up by conquering humanity itself, and degrading the most fundamental aspects of being human. Is there some flaw within us which impels us to do this?

Well, we will look at this in more detail in our next lecture, when we will use Richard Dawkins's first book - *The Selfish Gene*, published in 1976 - to open up some deep questions about human nature. It's a fascinating book, and I am sure you will enjoy interacting with its core ideas, and explore their potential to illuminate our human condition.

_____ ©Professor Alister McGrath, 2017

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[1] Caitlin Moran, *How to Build a Girl*. London: Ebury, 2015, 53.

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[2] John Gray, *Straw Dogs: Thoughts on Humans and Other Animals*. London: Granta, 2002, 29.

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[3] Gray, *Straw Dogs*, 14.

[4] [Primo Levi, *The Black Hole of Auschwitz*. Cambridge: Polity, 2005, 4-5.](#)

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[5] [Louis F. Fieser, "The Synthesis of Vitamin K." *Science* 91 \(1940\): 31-6.](#)

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[6] [For the story of Fieser's intimate association with this development, see Robert M. Neer, *Napalm: An American Biography*. Cambridge, MA: Harvard University Press, 2015, 5-44.](#)

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[7] [Described in Neer, *Napalm*, 60.](#)

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[8] [Loren Eiseley, *The Star Thrower*. New York: Harcourt Brace & Co., 1978, 267-79.](#)

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[9] [Eiseley, *The Star Thrower*, 271.](#)

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[10] [Eiseley, *The Star Thrower*, 169-85.](#)

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[11] [Eiseley, *The Star Thrower*, 182.](#)

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[12] <http://www.nickbostrom.com/ethics/values.html>

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[13] [Julian Savulescu, R. H. J. ter Meulen, and Guy Kahane, *Enhancing Human Capacities*. Oxford: Wiley-Blackwell, 2011.](#)

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[14] <http://www.nickbostrom.com/papers/future.pdf>

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[15] <http://www.nickbostrom.com/papers/future.html>

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[16] [Victor C. Ferkiss, *Technological Man: The Myth and the Reality*. New York: New American Library, 1970, 34.](#)

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[17] [Humphrey Carpenter \(ed.\), *The Letters of J.R.R. Tolkien*. Boston: Houghton Mifflin, 1981, 111.](#)

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[18] [J. R. R. Tolkien, *The Hobbit, or, There and Back Again*. 4th ed. London: Allen and Unwin, 1978, 62.](#)

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[19] [Tolkien, *Letters*, 146.](#)

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[20] [Edward Bernays, *Propaganda*. New York: Liveright, 1928, 27.](#)

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[21] [Edward Bernays, *Biography of an Idea: Memoirs of Public Relations Counsel*. New York: Simon and Schuster, 1965, 652.](#)

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[22] [Ingmar Persson and Julian Savulescu, *Unfit for the Future: The Need for Moral Enhancement*. Oxford: Oxford University Press, 2012.](#)

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[23] [John Gray, *The Immortalization Commission: The Strange Quest to Cheat Death*. New York: Farrar Straus & Giroux, 2011, 235.](#)

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[24] [Peter Berger, *The Sacred Canopy*. New York: Doubleday, 1965.](#)

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[25] [J. R. R. Tolkien, *Tree and Leaf*. London: HarperCollins, 2001, 87.](#)

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[26] [For what follows, see Gray, *Immortalization Commission*, 156-67.](#)

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[27] [Charles Dorn, "Promoting the 'Public Welfare' in Wartime: Stanford University During World War II." *American Journal of Education* 112, no. 1 \(2005\): 103-28.](#)

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[\[28\] John W. Dodds, "The Place of the Humanities in a World of War". *Vital Speeches of the Day* 9 \(1943\): 311-14.](#)

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