



Programme Three: The Power of One

The following transcript contains all to-camera presentation, narration and interviews from the programme first broadcast on Edge Media TV's Controversial TV (Sky channel 200) on 9th May 2009. To ease readability as a transcript, most other parts of the script have been removed.

TITLE SEQUENCE

NOTTINGHAM CITY CENTRE: DAY

CHRISTOPHER BARNATT (CB) TO CAMERA:

Welcome to Challenging Reality. I'm Chris Barnatt, and in this series we're questioning the certainties of the modern world by examining the key challenges and opportunities of the future. In previous programmes, we looked at the changing nature of our greatest achievements, and at the evolution of travel and communications. However, it is with the everyday human consequences of such innovations that we should perhaps be most concerned. In this programme we're therefore going to look on the impact of technological development on individual human beings past, present and future.

MONTAGE OF ANCIENT CITY REMAINS

A common view is that ancient civilizations had very little technology. However, this is not really true. All ancient empires rose on the back of mighty technological infrastructures. It's just that ancient methods of agriculture, manufacture and communication exploited human muscle power rather than machinery. Or, as the citizens of the Hellenistic city of Pergamon used to say, their slaves were "tools that talked".

IMAGES OF SLAVERY AND THEN FARM LAND

From the Ancients Egyptians to the Roman Empire and beyond, until a few hundred years ago all civilizations were based on systems of human ownership. The majority of people were therefore either slaves, or serfs who had to work the land of a monarch or lord. Most individuals therefore had few rights and few freedoms. However, this was not necessarily because their masters were less moral than people today. It was simply that, in ancient and medieval times, the exploitation of one human being by another provided the only possible mechanism for any level of civilization to function.

Across much of Europe, serfdom disappeared in the 17th and 18th centuries — although it was not banned in parts of Russia until 1861. However, whilst serfdom was on the wane, in parallel the African slave trade had been growing substantially, with the US Census of 1860 reporting over four million slaves. Indeed, it took until 1865 for Abraham Lincoln to abolish slavery with the 13th Amendment to the US Constitution.

More than any other development, it was the Industrial Revolution that saw an end to human ownership. As powered machinery became available, it was simply no longer effective to purchase human beings as a primary technology base. Paying workers as employees also started to prove far cheaper than the outright ownership of labour. Indeed, with the rise of capitalism, it was essential for most people to be paid for their labour so that they would have money to spend on the products of industrialisation. The decline of serfdom and slavery is therefore far more strongly associated with the birth of modern economic systems than any moral or ethical crusade.

CB IN FIELD TO CAMERA

With the rise of capitalism and industrialisation, millions migrated from fields to factories and the role of the majority began to change. As and the shackles of serfdom and slavery fell away, a common view is that industrialisation turned most people into the cogs of mighty organisational machines. To some extent this is also true. However, as industrialisation took hold, for some at least there were also new rights and increasing freedoms . . .

TONY WATSON INTERVIEW

Where I'd start with industrialisation and the growth of industrial capitalism — those two things arose at the same time — was there was an enormous freeing up of individuals. Prior to that you'd had monarchies, you'd had the church, all keeping people in their place. What you had in this period with the Enlightenment, the Reformation, and all that set of changes — individuals were freed to change history more than ever before.

What this meant, particularly with the aspiring middle classes who were coming on the scene — inventors, scientists, business men, and this was largely a male thing — these people used to meet, got together. They were shut out of the establishment. So they now could find other ways of asserting themselves. They couldn't own land and just sit back and hunt and shoot and fish. So they would write books, invent devices, set up factories. So the individual is especially important in the middle class context of changing the world and taking forward capitalism and industrialisation.

Well what about the ordinary people, let's say the worker individuals? The change that occurs there is that many of them started to work outside of the family. So as an individual you were located by the family that you were part of. That's where you did your work, and your leisure and all the rest — all in the one place.

Individuals now went out. So you got a strong sense of the individual emerging with people generally. And remember democracy emerges alongside industrialisation, the growth of capitalism — the bureaucratisation of public services — all that is happening at the same time and changing the relationships between individuals. Not fundamentally, but quite significantly.

MONTAGE OF INDUSTRIAL TECHNOLOGY DEVELOPMENT

As the 20th century took hold, all manner of technological developments continued to change the lives of millions. In particular, access to travel and communications brought personal freedoms that would have been unthinkable in any previous age.

Such freedoms were, however, won at some cost. Most notably, many of the industrial practices of the 20th century were reliant on mass production techniques that enslaved people not to human masters, but to the relentless march of machines. The heyday of mass capitalism may certainly have been an age in which standardised consumer goods from washing machines to televisions to cars rapidly improved the standard of living. However, just how free individuals became is nevertheless open to debate.

By the 1980s, developments in information technology were also starting to trigger a second industrial revolution. Indeed to this day, the evolution of the Internet continues to enable new patterns of work and new modes of social interaction. Anybody with a computer and a web connection can now go global. And personal freedoms have generally increased as a result.

However, the downside of the online revolution is that work can now be moved around the planet as never before. Indeed, with companies increasingly linking their workers together electronically rather than physically, employment rights hard won across much of the 20th century are therefore reducing substantially. It is also fairly certain that as we slowly emerge from the credit crunch, average job security will reduce further still.

Our declining supply of natural resources, coupled with the rising threat of climate change, add yet another level of complexity. Exactly how our lifestyles will and should change over the coming decades is therefore very far from clear.

SUE TEMPEST INTERVIEW

I think what we're looking for now is solutions that make work more sustainable, not just environmentally, but emotionally — and as a reward, and as something people can engage with in a meaningful way. I think we also face challenges around homelife: how should we live? Should we live in large cities? Should we live in market town environments? Are we better living in rural communities? And I think there are real challenges about what is the optimum way for people to live in a way that is sustainable on a scale that works, on a way that people can be more self reliant or a community can be more resilient.

MONTAGE OF NATURE & THEN GENETIC ENGINEERING

Yet another set of technological developments that will fundamentally impact the individual are those of genetic engineering and nanotechnology. These will permit at least some individuals to alter the characteristics of themselves and their offspring. In time they may therefore result in an artificial reengineering of the human race. The right and freedom of individuals to use genetic and nano technologies is therefore something we all need to debate.

TONY WATSON INTERVIEW

Well again these modern technologies are just like every other technology we have ever invented. They can be helpful to people, serve welfare, or they can harm people. The most obvious, if we can imagine that moment in history when fire was discovered. "Ah hah! We can heat the food, we can keep warm, we can live longer. We can have nice little parties around the bonfire". Or, we can go along to the next cave and burn out the family next door. And we can kill and maim, we can torture with it. So the possibility was always there with every technology at every point. What will be use it for? So genetic engineering or information technology, whatever you talk about, could lead to the most horrific enslaving and dehumanising, or the other.

And now we come to what I think is such an important point. The issue of human control over these human devices. Now to me, the best we've got — feeble as it is — is democracy. This is where we must assert control over all of these devices, the drugs and all the rest. But we must, I say we. We can only have a "we" I believe if we have democracy. If we don't, we will get dictatorship. And just what sort of monstrous systems of control could be devised — they're not too difficult to imagine because we have plenty of dystopian novels, *Brave New World* and all the rest, that can show us just how horrific a future would be if we let those technologies get into the hands, well to put it crudely, of wicked people. Democracy is our best hope

NOTTINGHAM CITY CENTRE: DAY

MONTAGE OF BUSY CITY, THEN INTO CB TO CAMERA:

Across history, and due in no small part to technological development, the rights and freedoms of the majority have significantly increased. Indeed, the 20th century is likely to be remembered as a Golden Age in which the individual was king. This said, in the face of fundamental global challenges, it's quite likely that in the near future the rights and power of individuals will have to decrease if human civilization is to survive. The relative power of those in authority is therefore likely to rise.

END OF PART ONE

PART TWO

NOTTINGHAM CITY CENTRE: DAY

CB TO CAMERA:

Welcome back to Challenging Reality. In part one, we looked at the impact of technological change on people across history. However, alongside technological development, it's also been particular individuals who have had the greatest impact on the rest of the population. Such a statement may sound extremely obvious. However, given the number of people alive today, let alone who have ever lived, it could also be considered surprising that any of us know of anybody we've never actually met.

GRAVEYARD MONTAGE

The fact that most of us do know a great deal about so many famous and infamous people maybe serves as a reminder that even in modern democracies we are less free of than we may care to admit. It is also perhaps indicates our individual desire to develop a knowledge of distant others as a benchmark against which to lead our own lives.

TUTENKHAMUM DEATH MASK, THEN COPERNICUS & DARWIN STATUES

Many of those who have etched their remote existence into our brains are associated with memorable artefacts or events. However, others have won their place in history by challenging realities that have shaped the ways in which we think and live. For example, in proposing that the Earth rotated around the Sun and not the other way around, Niccolli Copernicus challenged the place of human beings at the centre of the Universe. A few hundred years later, Charles Darwin's proposition that human beings evolved from animals similarly changed the way we think about ourselves. As just these two examples show, single individuals with a great idea can have a radical impact on the human race.

NOTTINGHAM ARBORETUM

CB TO CAMERA BEFORE AVIARY

In his groundbreaking book *The Selfish Gene*, Richard Dawkins discusses the transmission of knowledge and ideas by what he calls "memes" rather than genes. Whilst our genes are the carriers of our physical, biological characteristics, memes are the unit of cultural transmission that keep our idea alive. Examples of everyday memes therefore include fashions, figures of speech or social practices.

EXOTIC BIRDS IN AVIARY

The idea of memes arose following a study of bird songs in the islands off New Zealand. It had long been known that birds on different islands sang different

songs. However, until that point in time, it had been assumed that these songs were part of each bird's genetic makeup, and hence passed on biologically between the generations of birds living on each island. However, it was discovered that when a bird from one island was taken to another, new hybrid songs emerged that combined tunes from both islands. It was therefore proven that bird songs were learnt rather than genetically programmed, with a single bird able to challenge and change the reality of a population. In other words, bird songs were carried between generations culturally via memes, rather than biologically by genes.

TECHNOLOGY / INTERNET MONTAGE

Today, the memes of humanity are communicated through a very wide variety of media, with the Internet the dominant global meme carrier of our age. If, as suggested in the last programme, all human beings are now the cells of a single, electronically interconnected planetary lifeform, memes are quite literally the thoughts that this new creature now thinks.

The dominant memes of the early 21st century reflect humanity's collective response to the global challenges that threaten the survival of civilization. The future shapers — the dominant meme setters — of tomorrow will therefore be those great individuals whose ideas will allow us to successfully evolve in the face of global warming, resource depletion, and species-changing technological possibility.

KEN STARKEY INTERVIEW

The people who shape the future will in part I think be people like Bill Gates, who'll develop new technologies that have major impacts on our lives. From a positive point of view I guess the people who will really impact the future in a positive way will be the people who come up with big technological breakthroughs that hopefully will resolve some of our most intractable, complicated problems — mainly to do with the environment, climate change, water shortages, all those kinds of things. Who and how that will happen is not clear yet I think. But one hopes it will happen — or else!

TONY WATSON INTERVIEW

Right now the people who shape the future, as I'm suggesting all along, could be the monstrous dictators — we have some in the world today — there is always the potential for that, we've seen it throughout history. Dictators, monstrous figures can arise. And they generally don't die themselves before they've killed many millions of people, it can get that bad, and we must always watch that. So therefore we must look to, whether it's the entrepreneurs, the creative artists, or the politicians, we've got to look to those to operate, talk and create things in the spirit of human responsibilities to each other.

EXT: WOODS: DAY.

CB EMERGES FROM TREES AND WALKS TO CAMERA:

Future shapers who champion the meme of collective responsibility are also likely to be those individuals who can see the wood for the trees, and who therefore understand how the key challenges of the future interrelate. For example, we need leaders capable of integrating politics and science, as well as scientists far more attuned to the ethical implications of their latest technological developments.

SUE TEMPEST INTERVIEW

I think one of the key things is we're going to need people with joined-up thinking, people who can think holistically about issues. And who can also think systemically about how impacts in some areas — be it environment, be it town planning — how these issues interrelate, and how changes in one area are likely to have effects in other areas. I think we also perhaps need people who perhaps are driven by longer-term issues, who have a longer timeframe in thinking about things. In recent years, we've had a lot of management around short-term goals, short term performance issues. And I think we really need to move in a situation where people are managing for the short-term, yes, but for the long-term simultaneously. And people who have a custodian view of the world going forward.

DESK IN OFFICE WITH PC & VIDEO PRODUCTION HARDWARE

CB TURNS FROM WORKING AT PC TO CAMERA:

The idea for this series goes back to 1996 when I was writing the book on which these programmes are based. At that time I sent scripts to various TV companies in the hope they would make the series. Unfortunately nothing then happened. However, only ten years later, computer technology has advanced to such a level that I've been able to make the entire series by myself.

Using fairly standard software and a personal computer, it is now possible for one person to edit audio and video for broadcast. Stock materials can be obtained from the Internet, whilst 3D models can be built and rendered to produce images of anything from a pharaoh's golden death mask, to a nanobot, or the vastness of space.

The production of this series by one person hopefully serves as a powerful example of how technological development has already greatly empowered single individuals. With future developments in genetic engineering, in just a few decades it may also be as possible for individuals to program not just TV shows, but life itself.

A related possibility is that our desktop technology could evolve into artificial intelligences. This means that some future individuals may actually be machines. Some of these future sentient computers may even be biological if developments in

nano and genetic engineering mean that some future technology looks a lot less like this [HOLDS UP CIRCUIT BOARD], and a lot more like this [HOLDS UP HANDFUL OF GREEN SLIME].

TRANSITION FROM SLIME IN HAND TO A FUTURE BIOCOMPUTER — A SYNTHETIC, TENTACLED CHIP SLOWLY PULSATING ON A CIRCUIT BOARD

If thinking biocomputers are ever invented and grown, the human race will have to learn to share both the Earth and the Internet with a totally new species. Already South Korea is drafting laws to protect the rights of future robots and artificial intelligences. Some of tomorrow's most powerful future shapers may therefore not be human at all.

MONTAGE OF 21st CENTURY LIFE, INC BUSY CITY & EARTH FROM SPACE

Throughout history, human beings have rarely been content to accept the constraints of their current situation. As a species, we have therefore become pretty expert at challenging reality. And there is also no reason to believe our collective desire and capability to change the world will diminish anytime soon.

By inventing all manner of technologies, the human race has created the potential — at least at present — for many individuals to make all kinds of choices and to live their lives in a manner that was not possible in the past. Unfortunately, such levels of individual choice and freedom are not remotely sustainable. In the short-term, we can all become members of a global community in which we may do as we please with little regard for the consequences. However, in the long-term, if we continue to live like this our civilization will crumble and decay.

NOTTINGHAM ARBORETUM

CB WALKS TO CAMERA:

Collective responsibility is the greatest challenge for the 21st century. By definition, it is also a challenge for us all. Like it or not, we all need to accept that many of the certainties of the modern world are no more than an illusion that needs to be exposed as a hoax. The future, more than at any other time in our history, is therefore in all of our hands . . .

END CREDITS

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