The Tanner Lectures on Human Values 2009
Brasenose College, Oxford
20-21 February 2009

Meeting the Challenges of the 21st Century

Foreword

The Tanner Lectures take place annually at Brasenose College in Oxford; and at a handful of other distinguished seats of learning around the world. This year, the thirtieth academic year following the lectures' formal inception, was a special one; for it coincided with the 500th year since the founding of the King's Hall and College of Brasenose.

To celebrate this propitious confluence, we were, with the generous support of the Tanner Foundation, delighted to host an especially distinguished, and a singularly numerous and diverse, programme of Lecturers, many with a strong Brasenose connection. As you will see, they addressed and informed us on a varied range of topics; but all brought together under one theme; a pressing one: Meeting the Challenges of the 21st Century.

Brasenose is 500 years old, but over the two days of these lectures we looked forward to its continuing role as an academic institution which seeks to help shape and inform the future through the efforts of its men and women. There are many challenges to be met.

Professor Roger Cashmore FRS,
Principal,
Brasenose College, Oxford.

Preface

The Brasenose 2009 Tanner Lectures took place on 20-21 February 2009, in the Nelson Mandela Lecture Theatre at the Saïd Business School in Oxford. Each of the four sessions was conceived and organised by one or more Fellows of the College in an area of their academic interests: *Emerging Infection* – William James and Richard Boyd; *Terrorism and Security: What have we learnt from Afghanistan and Iraq?* – Llewlyn Morgan; *Human Rights* – Stefan Vogenauer; *Environmental Challenges* – Giles Wiggs. The Principal, Roger Cashmore, and Emeritus Fellow Harry Judge were also keenly involved in coordinating the lectures. The lectures and discussions were transcribed by students and post-docs working on the areas under discussion: we would like to thank Oliver-James Dyar, Rachael Burke, David Corns, Nicola Palmer, Klem Ryan, Alicia Hinarejos, Caitlin McElroy and Alexandra Conliffe for their efficient and precise work toward producing this record of the lectures. Melanie James, Pat Spight, Merry Donati and Kerrin Honey deserve sincere thanks for their unstinting organisational support. We would also like to thank the Tanner Foundation for their generous support of this special Quincentennial celebratory series of lectures; and also, of course, we should like to thank the Lecturers themselves, for making this such a splendid event. Brief biographical details of the Lecturers may be found in the Appendix.

Chris Timpson,
Fellow, Brasenose College Oxford,
2009 Tanner Convenor.

October 9th 2009

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THE CHALLENGE OF EMERGING INFECTION

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Emerging Infections: Is the Past a Guide to the Future?

Robin Weiss
University College London

"Life is lived forwards, but understood backwards" Søren Kierkegaard.

It may seem perverse to address the challenges of the 21st Century by examining past pandemics and their effects on human values. Yet several lessons can be drawn that are relevant to our situation today. One is how infectious disease has always taken the opportunity to follow globalisation. Without the opening of the Central Asian silk route following Genghis Khan's conquests there would have been no Black Death in 14th Century Europe; without the decimation of the New World indigenous population by smallpox and measles in the wake of the Spanish conquistadors in the 16th Century there would have been no market for the trans-Atlantic slave trade.

Another lesson is how advances in technology have provided opportunities for novel agents to infect humans. Perhaps the most notable one was the development of agriculture allowing humans to live in sizeable and dense populations that could sustain ongoing cycles of infection. Then, with the domestication of livestock and the adoption of the human environment by 'companion' animals such as dogs and rats, infections in these species were able to cross over and adapt to human-to-human transmission. Although 21st century epidemics like SARS and AIDS tend to originate from exotic animal species, several modern outbreaks can also be attributed to technological change. I shall discuss these with reference to the emergence of Legionnaire's disease and variant Creutzfeldt-Jakob disease, and why we need to be vigilant over medical advances such as xenotransplantation.

'Emerging' infections can be divided into three categories: truly novel diseases like AIDS and SARS, old diseases caused by newly discovered pathogens like hepatitis C virus, and re-emerging infections. I shall argue that some of the most serious threats to public health are posed by the re-emergence of old infections like malaria, tuberculosis, dengue and cholera. Novel infections like H5N1 influenza virus and SARS coronavirus caused only a few hundred human deaths, yet owing to fear incurred by their novelty and high mortality rate, they have cost approximately $80-100 billion, as noted by Jane Cardosa in her Tanner Lecture. So the social and economic consequences of the early 21st century outbreaks bear little relation to the actual burden of infectious disease (Box 1).

[Box 1]

Newly emerging knowledge about previously unknown yet ancient infections has been a remarkable advance of modern research. Helicobacter pylori is a bacterium adapted to living in the acid conditions of the stomach. It causes peptic and duodenal ulcers as well as stomach

cancer. Thanks to the identification of H. pylori, ulcers can cured with a single course of inexpensive antibiotics in contrast to the previous treatment for the chronic symptoms of the ulcers themselves. H. pylori, HIV and human papilloma virus types 16 and 18 – which cause cervical cancer – were each identified in 1983 and the importance of these discoveries has recently been recognised by the award of Nobel Prizes[1]. Thanks to advances in molecular cloning technology, twelve more novel human viruses have been discovered during the past 20 years. For example, Kaposi sarcoma herpesvirus was identified in 1994 and causes a tumour with a dramatically increased incidence in immunosuppressed transplant patients and in AIDS. In the last two years alone three new human polyoma viruses have been found, one of them oncogenic. That is extraordinary, for you would have thought we would know what was inside humans by now. It is likely that, like stomach ulcers, other diseases which were not previously thought to be transmissible (perhaps other cancers and some forms of neurological disease) will turn out to have an infectious agent as a factor in their complex aetiology.

In terms of human values, emerging infections in plants and animals can be just as devastating as human infections. The potato blight in Ireland in 1845 led to starvation and mass emigration. In 2001, the foot-and-mouth disease outbreak among cattle and sheep in the UK cost £ billions to the economy[2]. Diseases of crops and livestock present easier targets for bioterrorists than those in humans, though to my mind, natural catastrophes remain the greater threat. In his Tanner Lecture, Eddie Holmes discusses the identification of a previously unknown pathogen in beehives suffering from colony collapse disorder. Flowering plants and pollinating insects co-evolved and remain co-dependent; without honey bees and bumble bees, there will be no food supply. The thinking behind the Tanner lectures on emerging infections and those on the environment could be joined up[3,4].

HUMANKIND'S COLLECTION OF VIRUSES AND INFECTIONS

Imagine visiting a 500 year old Oxford College like Brasenose and looking at the portraits in the Hall. Some of these will be true 'family heirlooms' that have been handed down from generation to generation[4]. Others may be temporary exhibits on loan for a fixed term, and some will be new acquisitions which are here to stay. So it is with human viruses (Box 2). The family heirlooms with a long co-evolutionary history have co-speciated with the host and include many DNA viruses. The 'temporary exhibits' are the zoonoses, which are often RNA viruses that come from distantly related animals. Humans are usually a 'dead end' for the virus even if they often cause our death too. A few, such as Ebola virus can spread from person to person, but don't take off successfully.

[Box 2]

The SARS outbreak in 2002/2003 was a lucky escape for us, for while it spread globally it didn't become pandemic, largely because infected persons do not become infectious to others until they feel very ill. Not so with influenza, when one can readily pass the virus on before taking to the sick-bed. Although H5N1 ('bird flu') is highly transmissible among chickens, there have not been many human deaths because the virus finds it difficult to cross to mammalian hosts. There remains controversy in the field why this should be so; some say that if it were to become pandemic it would have done so by now, while others caution that we should just wait, just one extra mutation will do the trick. And if H5N1 does not take off in humans, avian H9 virus or a

mammalian virus may constitute the next pandemic influenza instead. The 1918/1919 H1N1 pandemic flu virus (which killed 50 million people) came directly from birds, whereas the 1968 H3N2 epidemic (which killed 'only' 1 million) people appears to have arisen as a recombinant flu virus derived from both pigs and birds.

Thus the new acquisitions are the occasional infections like influenza pandemics which not only cross the species barrier but then become well established as human-to-human transmissions. I include as 'new' those viruses that have emerged as human infections within the last less than 12,000, since we developed a settled society and animal husbandry. Measles diverged from rindepest of cattle about 8,000-10,000 years ago. Smallpox strains had a common ancestor only 1600 years ago, when the first serious epidemics were recorded in China, but it probably diverged much earlier from its closest animal relatives, camelpox and taterapox of gerbils[5]. HIV diverged from a common ancestor with the simian immunodeficiency virus of chimpanzees a mere 75-100 years ago[6]. Measles, mumps, smallpox and HIV became exclusively human.

Polio and measles viruses could well be on the verge of eradication, like smallpox. We can use vaccine strategies to contain outbreaks and there is no animal reservoir from which they could re-emerge, though related viruses could do so. Monkey pox is a case in point. It is a misnomer because its reservoir is in African rodents. In 2003, it spread in the USA from imported 'pets' to native groundhogs and thence to humans, causing several deaths[7].

Thus human infections are frequemtly quite different from those of the great apes. Although we share 98% of our DNA sequences with chimpanzees, we share less than 25% of their infections because so many of our infections are the 'new acquisitions' due to horizontal transfer from animals that share our habitat. For instance, our helminth parasites are closer to pigs than to chimpanzees and gorillas, and our diet resembles that of pigs rather than the great apes.

GLOBALISATION AND INFECTIOUS DISEASE

Globalisation has greatly facilitated the export and spread of infectious diseases (Box 3). The Black Death came to Europe in 1347 came when traders opened the Central Asian Silk Road allowing a pathogen of marmots in the Gobi desert to spread to rats travelling with the caravans and thence to humans. It arrived at Messina via the Genoese trading port of Kaffa on the Crimean peninsula and over the next three years it killed about a third of the population of Western Europe. Syphilis was first noted in Spain in 1493 and it is still not certain whether it emerged from pinta in Hispaniola in the New World, or from yaws in sub-Saharan Africa – should we blame Christopher Columbus or Bartholomieu Dias? But we do know that once it took off, syphilis moved rapidly across Europe and Asia.

[Box 3]

Hernan Cortes and his conquistadors defeated the mighty Aztec civilisation in 1521 by inadvertently introducing smallpox. This lesson was not lost on Francisco Pizarro who encouraged the spread of smallpox among Incas in Peru. Indeed, measles, mumps and smallpox ravished the New World populations. Demographers estimate that the North American indigenous populations fell by 90% between 1520 and 1620 because adults and children alike

were totally naïve to these kinds of viruses. A similar pattern of fatal disease has continued whenever isolated populations became newly exposed to global infections. It happened when Captain Cook sailed around the Polynesian islands, and it happens among Amazon tribal peoples today.

What are the lessons for human values in response to these epidemics? In 1348 it was natural for people to imagine that the plague was God's retribution for our sinful ways; some walked the streets whipping themselves, in order to gain virtue and thus escape it. The Flagellants surmised that if their city was cleansed of 'non-believers' the Lord might spare the city. In August 1348 the entire population of over 8000 Jews in Strasbourg were burnt or drowned in the hope of preventing the advance of the Black Death. This ghastly remedy did not work – the plague arrived in September.

For the survivors, the plague was not an unmitigated disaster. Suddenly, there was a labour shortage, for the unaffected farm animals still needed to be husbanded. So the peasants now had bargaining power to escape serfdom. Before the plague, Europe was reaching its limit of sustainable population density and food supply; afterwards, living standards markedly improved. It took over 200 years for the European population to regain its pre-1348 size. The plague returned in 1665 with about 15% population death rate. But over the centuries smallpox was the greater source of mortality although it killed fewer people in any one year.

In the Columbian exchange, most diseases travelled from East to West, whereas many new crops (maize, potato, tomato, pimento, cassava, cocoa, etc) travelled from West to East. As so few indigenous Americans remained, the Europeans needed to import labour from West Africa in order to work on the plantations, driving the lucrative slave trade. Some ecologists would argue that a modern pandemic of the proportion witnessed in the New World in the 16th century is just what Planet Earth needs today. A pestilence which reduced the projected 21st century global population of 9 billion to less than 1 billion would at a stroke solve over-population, global warming, environmental erosion, and food and water supply.

The opposite of globalisation is isolation. In 1639 Japan shut itself off from the rest of the world, apart from strictly controlled trade with Korea, and two small Chinese and Dutch trading posts confined to an island in Nagasaki Bay. The Tokugawa Shoguns maintained Japan's isolation until Commander Perry blasted his way into Yokohama harbour in 1853. Was this quarantine imposed in order to prevent the import of disease? Syphilis had arrived in Japan a few years ahead of St. Francis Xavier and the Jesuits, sailing along the same route. Smallpox came from China and the Japanese learnt how to immunise with Variola minor, the less pathogenic strain. Most historians believe that the Japanese isolation had less to do with the fear of new infections than a cultural fear of the spread of Christianity. Technology continued to advance and the Japanese population almost doubled during the two centuries of 'seclusion'. But in today's global village, no country, not even an island nation, could establish such a strict quarantine.

TODAY'S EMERGING INFECTIONS

Is the incidence of emerging infections increasing today? Many commentators think so, but I am not so sure. We have better epidemiological surveillance than ever before, which means that small outbreaks of infection are more frequently noticed, whereas they might have gone

unrecorded in the past. It is likely that the number of primary transmission events from animals to humans decreased during the 20th century as exposure diminished through our changing lifestyle. However, when a modern outbreak occurs, the chances of onward transmission will be much higher, particularly in large cities or when humans travel for recreation or religious pilgrimage.

Today's emerging infections can arise anywhere: from SARS in China, Legionnaire's disease in North America, Hantavirus haemorrhagic fever in Brazil, Nipah virus in Malaysia and Bangladesh, HIV and Ebola in Africa, to home-grown vCJD in Britain. I remain sceptical of claims that the 'hotspots' are mainly in the tropics[8] because we have seen the recent emergence of infectious diseases in USA (West Nile virus), Canada (Lyme disease), Finland to Siberia (tick-borne encephalitis), Australia (Hendra virus) and Argentina (Machupo virus).

Environmental, behavioural and economic factors frequently conflate to increase the risk of emerging infection.   For example, several emerging viruses have reservoirs in fruit bats – SARS originated in bats but came to humans via small carnivores and emerged due to appetite in parts of China to eat civet cats. In Malaysia, Nipah virus came from bats via pigs, but in Bangladesh isolated cases (Cardosa's 'viral chatter') come directly from children eating fruit that has fallen to the ground after it has been sampled by the bats. Unfortunately there is a market in primates too; where logging trucks go deep into the forest, enterpreneurial poachers butcher monkeys and apes to sell for meat at market. It has been the cause of Ebola outbreaks in Africa and was probably the source of HIV. While domestic livestock was a major source of new human diseases in the past, bushmeat is a greater threat today.

HIV/AIDS

The one really massive and ongoing pandemic in recent times is HIV/AIDS. It is the only novel emerging disease to have made a genuine dent in human mortality tables[9]. For instance, over the past 25 years the mean expectation of life at birth in Botswana has fallen by 20 years to age 43. Although HIV-1 entered humans early in the 20th century, AIDS was not recognised in epidemic form until 1981. Since then AIDS is estimated to have killed 30 million people, with approximately 38 million people currently living with HIV infection.

Each year about three million people die of AIDS and two million of malaria; but AIDS is not merely that little bit worse. Of course, malaria is a tragedy and it is something we must strive to prevent, but because those malaria deaths occur largely in young children they have relatively little economic impact. In contrast, HIV mainly kills young adults. Society has invested heavily in their upbringing, and just as they are starting to make social and economical returns, they die from AIDS leaving their infants to be looked after by grandparents.

Despite the enormous toll of AIDS in southern Africa, there has not been a puritan backlash as seen with the plague in Europe. With HIV/AIDS, myths of denial became popular (that HIV does not exist, or that it is harmless), and conspiracy theories of the deliberate manufacture of HIV, yet oddly not of personal behavioural responsibility.

The emergence of HIV exemplifies both the frequency of viral chatter, and the difficulty of an infection becoming established in a new host. HIV-1 crossed to humans from great apes in

Central Africa on three occasions, and HIV-2 crossed at least six times from sooty mangabey monkeys in West Africa. Such is the power of modern 'forensic DNA' phylogenetics (see Holmes' Tanner Lecture) that we can pinpoint the emergence of the pandemic strain of HIV-1 (Group M) to a small region in Cameroon where chimpanzees carry viruses with similar genetic sequences[10]. What we don't understand is why the other cross-species HIV transfers were less successful in spreading in human populations. Clearly initial exposure is but the first step in a series of stochastic events leading to a pandemic strain.

Owing to its long incubation period before illness becomes manifest, HIV was able to spread worldwide before it was identified as a new disease. Thus another lesson is that acute infections like SARS and influenza are more likely to be pinpointed early, although that does not prevent global spread. We also need to worry about infections that insidiously sneak up on us, like HIV and E71 enterovirus discussed by Cardosa, although they won't be ones that generate headlines.

NOVEL DISEASES FROM ADVANCES IN TECHNOLOGY

As in the past, the development of technology provides new opportunities for the spread of diseases. The speed of modern travel allowed SARS to travel to Singapore and Toronto within days of reaching the international hub, Hong Kong. In addition to global travel, other changes in our life-style can have unexpected consequences and these include advances in medical technologies.

The Legionella pneumophilia bacterium that causes Legionnaire's disease is a free-living microbe with no animal host. It has learnt to become a parasite through our modern way of life which pre-adapted the microbe to colonise the human lung. Legionella found a new ecological niche in man-made, warm, moist, aerated environments such as air-conditioning plants, cooling towers and jacuzzis. It was first recognised in 1976 when guests attending a meeting of the American Legion caught severe pneumonia at a hotel in Philadelphia. Legionella infection does not spread from person to person but represents a primary infection from the modern, 'hi-tech' environment.

Hepatitis C virus is an example of an old human infection that was only identified in 1989. However, this virus and other blood-borne agents such as hepatitis B and C viruses and HIV appear to have gained a tremendous boost in the 20th century from the introduction of syringes and needles that were not adequately sterilised[11]. It is thought that the Bilharzia eradication campaign 50 years ago generated a massive increase in hepatitis C infection in Egypt. Bilharzia is a parasite that was treated with an inexpensive drug that had to be administered by injection. Whole villages along the Nile were treated using only a few syringes so that anyone harbouring the hepatitis C virus would unwittingly pass it to those injected later. Hepatitis C infection is an example of the iatrogenic expansion of infectious disease. Before diagnostic screening tests were introduced following their discovery, hepatitis C virus and HIV infected 35% or more persons with haemophilia who were treated with tainted clotting factors pooled from thousands of donors.

In the 1990s, transplant immunologists and biotech companies raised high hopes of tackling the shortage of human tissues and organs by developing modified pig tissues to transplant into

patients, a process called xenotransplantation. But scant attention was paid to the risk of transmission of viruses from pigs. Of course, pathogenic porcine viruses already known to veterinarians would be screened out, but agents harmless and therefore unrecognised in pigs might be pathogenic in other species (Figure 1). Human hepatitis E probably comes from pigs, which also carry endogenous retroviruses that cannot be eradicated by screening. As I have commented elsewhere[12], the genetic modifications introduced into pigs in order to prevent immunological rejection upon xenotransplantation would also predispose latent viruses to cross over more efficiently into humans.

[Fig 1]

Bovine spongiform encephalitis (mad cow disease) first arose through a novel policy of introducing carcase waste into animal feed forcing herbivores to become 'cannibals'. With the extraction of the last gram of protein from the nervous systems of affected cattle for hamburgers and other processed 'meats', this prion disease crossed into humans to become variant Creutzfeldt-Jakob Disease (vCJD). Owing to its long incubation period, vCJD first appeared 10 years after the bovine epidemic had peaked. Although the vast majority of vCJD cases are directly zoonotic arising through the consumption of cattle protein, there is evidence of a few cases arising in recipients of blood transfusions from people incubating vCJD.

TODAY'S RE-EMERGING INFECTIONS

In 1546, over 300 years before Louis Pasteur proved the germ theory of infectious disease, Girolamo Fracastoro wrote on syphilis in De Contagione "There will come yet other new and unusual ailments in the course of time; and this disease will pass away, but later it will be born again to torment our descendents".

In the 21st Century, a number of diseases are re-emerging or are spreading to new regions owing to global warming, eg the arrival of bluetongue in ruminants in the UK. Tuberculosis and malaria were in retreat 50 years ago but are resurgent once more, and have become resistant to yesterday's drugs. Dengue fever virus is spread by Aedes aegypti mosquitoes which breed in small, still pools of water such as collect in old rubber tyres or gutters; therefore the dengue vectors thrive in tropical cities. Another mosquito-borne human pathogen with a reservoir in birds, West Nile virus, has greatly extended its geographic range; it arrived in New York for the first time in 1999 and by 2003 had already reached the Pacific coast.

Cholera was first reported in the Ganges delta in 1815. This free-living bacterium had probably explored the human gut on several occasions before the first serious epidemics occurred. Then a cholera strain acquired extra 'pathogenicity islands' by horizontal transfer of genes from other bacteria. Thus a new strain emerged encoding cholera toxin and cell adhesion proteins, which made it both dangerous and highly transmissible for humans. British steamships transported it worldwide in the mid-19th century, and it became epidemic in Europe. John Snow and Robert Koch demonstrated the importance of control of infection through sanitation. The building of sewage systems and the separation of drinking water from effluent was a heroic achievement, greatly reducing the outbreaks of cholera.

Unfortunately, cholera is re-emerging in the 21st century. March 2008 marked the date when greater than 50% of the world's population was estimated to live in cities and megacities. In many parts of the world, however, the city centres are surrounded by an agglomeration of shantytowns and favelas with little sanitation. Since 1991 there has been a vast increase in cholera in Bangladesh and in South America. Notably, the collapse of social and economic infrastructure in Zimbabwe has led to thousands of cholera cases and deaths. Refugee populations are particularly vulnerable, and in November 2008 there was a cholera outbreak in Rwandan refugee camps around Goma in the Democratic Republic of the Congo.

Typhus is another re-emerging disease with an old history. The epidemic described by Thucidides during in the siege of Athens in 429 BC may well have been typhus, and it certainly ravaged the Spanish troops laying siege to the Moors in Granada in 1492. Typhus is a disease of rats, and like the plague, it can spread to humans via fleas. Epidemics occur when the disease spreads from human to human via lice. Typhus has caused huge epidemics in the past, and it thrives on human conflict. At the start of the 19th Century Napoleon proudly marched the Grande Armée into Russia with 400,000 men, but subsequently they succumbed to disease and Napoleon retreated with less than 10% of his original troops. Few of the deaths were due to injuries incurred in battle and typhus probably accounted for more than half the overall mortality. Typhus reappeared on the Eastern Front in World War I with massive mortality. In 1934, bacteriologist Hans Zinsser wrote, "Typhus is not dead. It will live on for centuries and will break into the open whenever human stupidity and brutality give it a chance"[13]. Sadly, he was proven right and millions of people died of typhus due to human brutality – in concentration camps such as Buchenwald in 1944, with smaller outbreaks among Rwandan refugees in Burundi in 1994, and among displaced people in Bosnia in 1995.

DID WE EXCHANGE PREHISTORIC INFECTIONS WITH OTHER HOMINIDS?

Lice are the vectors for typhus, and these ectoparasites themselves have something to teach us about human evolution and infection. Head lice and body lice are subspecies of Pediculus humanus. These are 'family heirloom' infestations that appear to have co-evolved with us from a common ancestor shared with chimpanzee lice. Head and body lice probably diverged from each other about 100,000 years ago, and this may indicate the point at which humans developed clothing' which body lice require to breed. Another intriguing observation is that there are two separate 'clades' or strains of head lice – one that is seen worldwide and one that is only found in the New World. Phylogenetic analysis of these two clades suggests that they diverged from each other around 1.2 million years ago (MYA). David Reed[14] has pointed out that this coincides with the likely time of divergence of Homo erectus from the hominid lineage leading to the modern humans. He postulates that the New World clade of lice co-speciated with H. erectus and that H. sapiens gained this clade via horizontal transfer from H. erectus shortly before they became extinct. It is an intriguing idea but difficult to obtain firm evidence for it.

Pubic lice or 'crabs' are quite distinct from head and body lice, belonging to a different genus. The nearest relative to the human pubic louse (Pthirus pubis) is the gorilla louse; although the most recent common ape ancestor of humans and gorillas is thought to have lived over 12 MYA, P. pubis and P. gorillae only diverged around 3 MYA. Thus there is strong evidence that pubic

lice were acquired horizontally from the gorilla, perhaps when humans developed coarse pubic hair[15].

This 'lousy tale' illustrates a general principle about studying the past history of human infection. While it is relatively easy to detect horizontal transmission across large taxa (for example, RNA influenza viruses switching from animals to humans), detecting a switch between closely related hosts such as proposed for lice is more tricky. Although co-speciation of parasite and host permits close adaptation, total fidelity by the parasite is not advantageous when the survival of the host becomes endangered[15]. HIV-1 was 'smart' to jump into humans from chimpanzees because it has acquired a much larger pool of new hosts. Likewise, if the head louse inference is correct, then lice were 'smart' to switch from Homo erectus to H. sapiens because the host became extinct while its parasites live on.

Switching to a closely related host can result in large changes in virulence. The myxomatosis virus of New World rabbits was devastating to European rabbits; a relatively harmless herpes virus of Indian elephants is lethal to African elephants when the two species are housed together in zoos. If lice were all we caught from other hominids (which I doubt), it is nonetheless possible that H. sapiens provided the pathogens that dealt the final death knell to Neanderthals, rather as Old World diseases decimated New World modern humans.

THE IMPACT OF PAST INFECTIONS ON HUMAN GENES

Another facet on severe infectious diseases is the extent to which they have affected human inheritance. The classic example is the severe form of malaria caused by the Plasmodium falciparum parasite carried by the Anopheles mosquito vector. Mutations conferring resistance to malaria were selected in our DNA which are sufficiently valuable in their heterozygous state that they are sustained in the human population even though they are highly deleterious when homozygous. In other words, for every child who dies because he or she inherited two genes predisposing to sickle cell anaemia, thalassaemia or G6PD deficiency there are likely to be two brothers or sisters who inherited only one gene and thus will survive malaria. Likewise there is evidence that the gene causing cystic fibrosis (which is prevalent in European populations) evolved because, when only one mutant allele was inherited, it afforded resistance to severe diarrhoea elicited by enteric infections.

A human gene variant called CCR5△32 confers resistance to most strains of HIV by preventing the virus gaining entry into its target cells. This variant (allele) is fairly common in northern Europeans but it is not found in Africans. HIV has not been present in humans long enough to account for the high frequency of this allele and there has been speculation whether it was selected to confer resistance to the plague or to smallpox[16]. In contrast, we have observed that a mutation in a related 'receptor' gene (encoding Duffy antigen receptor for chemokines which confers resistance to vivax malaria) appears to make carriers more likely to acquire HIV infection if exposed to the virus[17]. This Duffy mutation is present in the majority of sub-Saharan Africans and it might explain in part the high frequency of HIV infection in Africa. Our findings remain controversial, but if confirmed illustrate how the evolution of resistance to one infection, malaria, may have rendered Africans more susceptible to another, HIV.

CONCLUDING COMMENTS

Whilst novel infections have been emerging for millennia and will continue to appear, the news is not all bad! Globally, the death rate due to infections is on the wane. Vaccines against infectious diseases are proving to be successful weapons of mass protection. Humans have several 'family heirloom' infections (eg, chickenpox) that have co-evolved with us and are generally endemic; we have also acquired novel infections (eg, smallpox) that tend to be epidemic. Many of these have been horizontally acquired from other species such as domestic animals and increasingly in modern times from exotic species. The imprint of a long evolutionary history with infectious diseases is left in our genome. Infectious disease has also played a role in shaping the economic world and our culture. English nursery rhymes recall the plague ("Ring a ring of roses") and protection from smallpox by cowpox ("Where are you going my pretty maid?") which Edward Jenner converted from folklore to science. However, modern technologies and environmental change provide opportunities for the emergence of novel infections. William McNeill wrote that "If a transmission route is conceivable, some microbe will find it". Given what we have learnt from the past, the challenge of the 21st century is to prepare for the unexpected.

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Virology in the Jungle: The Global-Local Tension

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In 2007 Indonesia hit the international press because of the Government's refusal to supply avian influenza virus samples to the World Health Organisation (WHO), which coordinates global influenza surveillance. This surveillance activity is important to global public health because if we are to be able to avert or to mitigate pandemics of severe influenza it is necessary to keep track of how the virus is changing with time and to find out where these viruses are emerging. The global influenza surveillance programme is undertaken by a network of laboratories around the world and depends for its success on the commitment of countries to supply influenza virus samples for study. The research that is carried out in this way informs decisions about the choices of strains to be used in the next season's influenza vaccines – clearly a necessary activity that supports the public good. However, this is happening in a world where inequity of access to the products and instruments of public health is systemic and has not been adequately addressed.

Avian influenza H5N1 is an excellent example of how a virus might affect human communities by jumping from an animal host. This virus causes severe disease and death in a large proportion of humans who are infected and so far although H5N1 has been reported in many countries, the heaviest burden of illness has been in Asian countries such as China and Indonesia. In this regard, H5N1 is also an excellent example of the disconnect between the countries that supply the strains for research into developing products and those countries in which the products would be used: those countries which can afford to pay for them. The WHO has put huge effort into case-finding in poorer countries, but this has not translated into guarantees that the poor people from whom the H5N1 samples come are ever going to have affordable access to the drugs and vaccines that will ultimately be developed.

On the other hand, by refusing to share H5N1 samples, Indonesia risks jeopardizing the global effort in a way that would affect everyone. It is thus imperative that the problem of inequity in global health is resolved.

To put avian influenza in perspective in Indonesia – the country has a population of 220 million and about 300 million domestic birds. Chickens are food, savings, commodities to be traded – and in this highly populous country, since 2005 there have been 141 people infected with H5N1. One hundred and fifteen of these people have died. Certainly the case fatality rate is high, but Indonesian people know they are faced with even bigger problems. This is starkly seen when we the images showing the devastation which wrecked in one day at the end of 2004 – the Asian tsunami. Today there are still people who are living in temporary structures; today the health system in Aceh is still not adequate in many places.

This lecture series is about human values – and some of the human values we need to think about in the context of emerging diseases are equity and affordable access to healthcare. We have to think about the effect on the lives of poor people when we cull their animals to make the world a safer place for the rest of us. The internet today allows us a glimpse of the horrible nature of the measures we implement to prevent the spread of bird flu. We see bizarre images of poor villages clutching their cages with a few chickens in positions of supplication at the feet of men attired from head to toe in white or blue protective gowns, gloved and masked, stuffing their chickens into bags for the cull. One cannot but help thinking about the irony seen here - the loss of a protein source to people already hovering on the edges of inadequate nutrition – all for the larger public good. This is a dilemma that cannot be ignored.

And so it is no wonder that there is some sympathy for the position of the Indonesian Minister of Health as has been expressed in an editorial of the New Scientist (17 Feb 2007, magazine issue 2591) – where they say "Good for Indonesia".

ONE WORLD, ONE HEALTH

While it is becoming clear that the world is increasingly connected, with global travel and trade, putting huge pressures on natural resources – rainforests are being logged and decimated, fisheries depleted - the threat to biodiversity also inevitably leads to increased likelihood of new or unknown pathogens crossing species barriers. This is well illustrated in the work of Jones and colleagues (Jones KE, et al. Nature, 451:990-993) which describes three layers in the emergence of new infectious diseases. At the lowest level, there is localized "viral chatter" – often unrecognized and affecting only limited numbers of individuals, human or wildlife. Occasionally these local events flare up causing enough numbers of cases thus getting our attention. Depending on the ecology and transmission dynamics of these new pathogens, global spread is possible in a very short space of time, as we learnt from SARS in 2003. Indeed SARS underscored the necessity of implementing surveillance programmes and early warning systems – and it has been argued that much of this activity needs to be strengthened in areas of the world considered to be hotspots of disease emergence.

I shall draw on some recent examples in Asia to illustrate why there needs to be a better balance between the interests of the global community (read 'the West') and the needs of local communities where the early events of pathogen emergence are being played out.

PIGS, BATS, MOSQUITOES AND VIRUSES OLD AND NEW

Nipah virus is a paramyxovirus which emerged in Malaysia in 1998 and killed more than 100 people by mid 1999. It is now known that this virus was maintained by a bat reservoir feeding in fruit trees planted in pig farms. The virus infected domestic pigs in a farm in the state of Perak in Peninsular Malaysia in late 1998. When workers of the affected pig farms started getting ill with encephalitis it was thought that this was due to Japanese encephalitis virus, a known flavivirus transmitted by mosquitoes from pigs - the amplifying mammalian host - to humans. Intense vector control activities and vaccination of farm workers with a Japanese encephalitis virus vaccine had no effect on the outbreak which spread from Perak to other pig farms further south. Eventually a new paramyxovirus was found to be the causative agent – infecting pigs and

humans; and to stop the outbreak, a million pigs were culled – under conditions that were far from humane. Fear and panic bring out the worse in us. Malaysia went from being a pork exporting country to a pork importing country, suffering over a billion US$ in lost foreign revenue. One hundred and five people died and five thousand farm workers lost their jobs. Compensation was calculated on the basis of the number of head of pig culled and while this never compensated farmers fully for their loss, it is less known that workers were never compensated for their loss of livelihood.

Retrospective studies have shown that this Nipah virus outbreak was preceeded by characteristic "virus chatter" – with a few isolated cases seen in the two years prior to the explosive outbreak in 1999. It is important to remember that whilst emerging infection at one level is influenced by virus biology and evolution as well as ecology, in this example, the outbreak also had everything to do with human behaviour and human response. Despite the different epidemiology associated with the Nipah outbreak (adults rather than children, pig farm workers rather than the larger community) the Malaysian authorities assumed that this was Japanese encephalitis, and while they implemented all the correct vector control measures if this was indeed Japanese encephalitis, they did not question why the epidemiology was so unusual nor keep an open mind on what might be the reason for this. In fact, at some point in the early part of the outbreak, pigs were vaccinated against Japanese encephalitis virus – and as is the usual practice, large numbers of animals were injected with the same needle – thus helping to spread through the herds the virus which was in fact the causative agent.

ENTEROVIRUS 71, NOT SARS

While The SARS outbreak of 2003 spread fear across many continents, there were also cases in Hanoi in northern Vietnam – 63 SARS cases and 5 deaths early that year, and on April 28th 2003, Vietnam was declared free of SARS – a tribute to the hard work and dedication of their health professionals.

Elsewhere in southern Vietnam in early 2003, a cluster of unusual neurological infections of young children was seen, with children also dying. Doctors in Ho Chi Minh City were concerned. They knew that the clinical features of these cases and the epidemiology did not suggest Japanese encephalitis which is endemic there. Investigators from the WHO were interested and went to investigate. They quickly concluded that this was not SARS and declared that this was therefore not a priority – no resources were allocated to understand what was happening here.

At the same time, in Sarawak, Malaysia, where I work, we were trying to control an outbreak of Hand, Foot and Mouth Disease (HFMD) in children – this is a disease which is caused by a number of different enteroviruses and one of these - EV71 – can cause encephalitis and death. By undertaking prospective studies on encephalitis etiology and epidemiology in Sarawak we realized that we had Japanese encephalitis occurring every year and that every few years we saw huge spikes in neurological disease associated with HFMD and caused by EV71. Was this virus also circulating in Vietnam? We shared our diagnostic and surveillance tools with our Vietnamese colleagues and they found that indeed they were also seeing large spikes in EV71 activity – and on investigating an outbreak in 2005 they found that the EV71 strains circulating in Vietnam were different from those circulating in Sarawak.

This finding did not make headlines like SARS did. It was only in 2008 that EV71 reached the consciousness of the global public. As the Olympic games in China approached, an outbreak of an unusual disease of children hit the media. People were afraid that this disease would spread around the world because of the large numbers of visitors expected in China for the Olympics. More than 50,000 cases and 126 deaths of Chinese children finally brought this virus to the radar screens of international agencies – and cynically, I would say that this was as much due to worries about global spread as it was due to concern about the deaths of Chinese children.

Our studies on recent circulating strains of EV71 show that there are 2 different phylogenetic groups seen globally and that the viruses seen in Malaysia are genetically distinct from those circulating in China and Vietnam. What conditions could have led to the emergence of this virus separately in two different parts of Asia? This is an interesting question as this virus is a human virus and unlike the examples of avian influenza and Nipah virus, no animal reservoir is involved. Understanding the epidemiology of EV71 could provide more clues about virus emergence.

MORE THAN EMERGING ZOONOSES

I would like to point out that idea of "emerging diseases" has to be seen as relative to the community in which it emerges, and should not be seen only in the perspective of something coming out from the wild and causing risk to us. Let us turn now to Sarawak on the island of Borneo. Here logging roads criss-cross through the logged over rainforest. Logging activities and encroachment of logging companies on native land destroy the forest resources which native communities rely on – leading not only to a threat to the way of life of these communities but also to the introduction of diseases associated with changes in lifestyle and nutrition.

You can imagine that these logging roads do provide routes of communication between the communities who live in the forest and those who live in towns. You can also imagine that while it has become easier for pathogens to be shared between the forest dwellers and town dwellers, access to healthcare for the forest communities is still a major challenge.

It is in this context that I would like to bring you one final example of an emerging disease – measles! On December 27th 2004 – the day after the Asian tsunami struck the shores of Aceh, Thailand and India – a doctor in a small hospital in Bintulu, Sarawak noticed that they had been seeing an unusual number of adults who were very ill with what might have been measles. These patients were all from the Penan tribe and told of deaths of children in the village. Our laboratory received samples from the hospital and our public health department went into the village by helicopter to investigate and to fly out ill children. In our laboratory we confirmed that this was a measles outbreak. Our paediatrician colleagues went to Bintulu hospital to look after the children who were flown out and to study the clinical picture and epidemiology of the cases. It turns out that measles vaccination had not reached the Penan in this area and all it took was one infected visitor from town to spread the virus throughout the village. By the time we had flown in vaccine and flown out sick children, 20 adults had been ill enough to be admitted to hospital, 14 children had already died and another 14 made it out to hospital. This outbreak of a vaccine-preventable disease in a remote Penan community severely put at risk their next generation – a third of the children in the village had succumbed to the virus.

It is noteworthy that Malaysia has a very high vaccine coverage. Missing out a small cluster of Penan villages did nothing to affect our statistics but had a devastating effect on an already highly threatened community. And so here is an example where inequity is internal to a country.

It would be remiss of me as I talk about measles vaccination not to mention that in Britain measles vaccination coverage is appalling. It is only in situations of privilege that people have the luxury of questioning the value of vaccination – but it is important to remember that when vaccine coverage in a community is too low, the whole community is at risk and what is worse it is the poor and undernourished in the community who will have more severe disease.

I would like now to leave you with this image of a Penan man – with elongated earlobes and a traditional haircut – drinking happily from a can of commercial soda – manufactured by a multinational company and sold around the world. And so let us think about human values – think about how we cannot find the resources to vaccinate his people against diseases we know can be prevented; think about how we are so concerned about what diseases "they" might send out to us; think about why we are not concerned about what "we" might give to them – and this includes all the trappings of modern living which will bring to this community a completely different range of emerging diseases – the non-communicable diseases like hypertension, diabetes and heart disease. And remember that emerging diseases need not be confined to infectious diseases that come from us to you but also those diseases that come from you to us. And in this effort to put in place surveillance systems to provide early warning to the rest of the world of what new pathogens might spread around the world in one huge pandemic – we must ensure that the people who live their lives in these "zones of emergence" are protected too.

Photo credit : Khoo Khay Jin

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On The Origin of Epidemics

Eddie Holmes
Pennsylvania State University

We're here to celebrate five hundred years of Brasenose College. It's also, as I'm sure you well know, two hundred years since the birth of Charles Darwin, and a hundred and fifty years since he published *On The Origin Of Species*. So what I'm going to do today is to show you that Darwin's theory of evolution and natural selection applies as much to diseases and their origins as it does to humans, birds and other species.

INTRODUCTION TO EMERGING INFECTIONS

Human populations have been exposed to infectious diseases since we first left Africa over a hundred thousand years ago. They are a part of our past, and they will be a part of our future. In many cases it is hard to use historical records to work out what diseases affected us in the past, but in a few cases we have been left with 'signatures'. I have found an Egyptian heiroglyph, from 1500BC, which may be the oldest picture of somebody suggering from a viral infection. The person's leg is withered, and he is resting on a cane, which might suggest he is suffering from poliomyelitis, caused by the polio virus. I've also discovered a script from Mesopotamia, which shows a dog biting a person. The translation is a very distinctive description of rabies, with the characteristic madness and saliva.

Infectious diseases have been with us for very many years. Today I will talk about emerging infectious diseases: new pathogens that affect our species, or pathogens that are causing more infections that they used to. For many years, people who worked on infectious diseases would make lists of these emerging diseases. For instance, the diseases that were considered to be emerging fifteen years ago include HIV, Dengue and Yellow fever, which all tend to affect people in the Tropics. Importantly, these pathogens nearly all have a host population that is not human. They frequently come from primates, rodents and bats. Bats and rodents in particular tend to live in very large populations: a simple rule from ecology is that the bigger the host population is, the more pathogens that population carries. Since 1990, a few other emerging diseases have been identified, such as Hepatitis C, Sin Nombre Virus, Nipah virus, West Nile virus and SARS. There are two important factors that determine how emergence takes place. The first is to do with the rate of evolution. The genomes of almost all emerging viruses are made from RNA, which is slightly different to DNA: importantly it is error-prone when replicating. So RNA viruses evolve much more rapidly than organisms with a DNA genome. This allows them to produce the variability that they need to adapt to new species, rapidly. The second factor, as I have previously mentioned, is that they have animal reservoirs.

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CLASSES OF EMERGENCE

The term 'emerging' in the context of a disease covers a number of different relationships between that disease and the host population. There are characteristically three interactions that can occur between the pathogen and the host population. Most are 'spill-over' infections. An example of this is when a human is bitten by a dog and develops rabies: critically, there is no onward human to human transmission. The second class of emerging infections cause local outbreaks, where there's a limited spread between humans. Finally, the smallest class of all, are those that successfully jump host species and become established in a new host population, such as HIV, or flu. This is evidence that it is actually quite hard to adapt to replicate in a new host species, and the process of emergence is an evolutionary process: you can jump between species, but that's not enough. You actually have to adapt to a new host species to become an established pathogen in that species, and this is the evolutionary process.

One example of this, which captured much public attention, is Ebola. Ebola has jumped a number of times into humans, and caused localised outbreaks. There was a particularly famous one that took place in Kitwit in Congo in 1995. The first case was on April 10th, and was treated by a medical team, who then died of very serious Ebola-like symptoms themselves. The epidemic then took off, and by the 21st May it had peaked, causing 101 deaths. By June 24th it had 'burnt itself out'. That was actually quite a big local outbreak. Thus far there has been very little evidence of onward transmission in humans. Similarly the vast majority of avian flu cases are spill-overs, where one individual contracts the virus directly from a bird, and then there's no onward transmission. The only good evidence for onward transmission is from Indonesia, where there is a small number of family clusters of H5N1. So the challenge that emerging viruses have to face is to adapt to a new species.

EVOLUTIONARY BIOLOGY AND PHYLOGENETIC ANALYSIS

My talk today will concentrate on three aspects of emerging infections. I'm going to show you that emerging infections are a natural part of our past, our present and our future. Second, that most of these pathogens jump from other species into humans. Finally, I'm going to show you that evolutionary biology provides a powerful framework to understand this process.

The way I work with evolution, to try to understand emergence, is to reconstruct the evolutionary history of the pathogen using a phylogenetic tree. These are just like pedigrees or family trees. An example of a phylogenetic tree of a virus, and how they can be used, comes from a case in Florida in 1990, where a local dentist was accused of infecting some of his patients with HIV. The principle forensic evidence was a phylogenetic tree: each branch of the tree represented a sequence of the virus taken from the dentist, his patients (marked A to G on the figure), and local controls (LC) living in Florida who were infected with HIV, but had no relationship to the dentist (Figure 3.1). It can be seen that the sequences of patients A, B, C, E and G are closely related to those of the dentist, which strongly suggests that these individuals were infected by the dentist. In contrast, the sequences of patients D and F cluster with the local controls, indicating that they were not infected with HIV by the dentist. The phylogenetic tree is therefore a very simple way of reconstructing this evolutionary history.
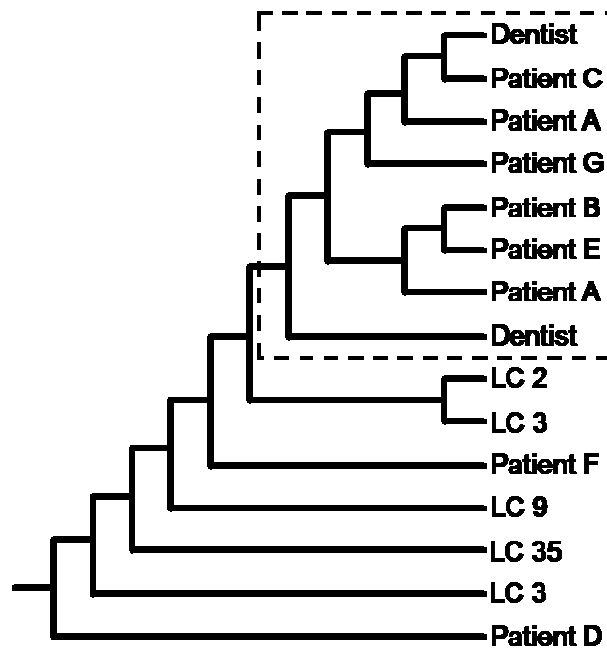
Figure 3.1

LC - local controls
(other HIV patients from Florida)

This framework can be used to see where viruses come from. A simple example is SARS. SARS started in southern China at the end of 2002, got to Hong Kong, and then spread globally, infecting about 8000 people, and resulting in 800 deaths. It's another example of a very serious epidemic that burnt itself out. So where did SARS come from? Initially the prime suspect was a palm civet, sold on the markets in southern China. More extensive work has shown that the natural host of coronaviruses, of which SARS is an example, are bats. Horseshoe bats, in particular, appear to be the natural host of SARS. In the case of SARS, it appears that the bat virus got into the palm civet, and that the civet virus then spread into humans. This is an example where the molecular forensics has told us very powerfully how this virus has jumped species barriers.

AN HISTORICAL PERSPECTIVE

Darwin was born in 1809, and in 1859 he wrote *On The Origin Of Species*. He was a remarkable man, but what he didn't have was a knowledge of genetics. Incidentally, Mendel was working at the same time, but unknown to Darwin. Mendel's work was rediscovered in 1909, and in the 1920s and 1930s there was a melding together of genetics and Darwin's theory, termed the 'Neo-Darwinian synthesis'.

The early history of virology occurs over a very similar time period. In 1798 Jenner used the cowpox virus to produce a vaccine against smallpox, but he had no concept of what a virus was. In 1885 Pasteur made a rabies vaccine, and again he didn't know what viruses were. The first viruses were discovered in 1898, sixteen years after Darwin died. In 1900, as Mendel's work was being rediscovered, there was a milestone in field of virology as they found the vector for Yellow fever. From the 1920s onwards, with better techniques, more viruses were found. So Darwin

could never have worked on viruses because they had not been discovered when he was living. If you read Darwin's work he mentions Yellow fever in *The Ascent Of Man*. This is no surprise, as during the nineteenth century Yellow fever was rife in America. There is an interesting passage where he remarks that people from West Africa tended not to die of Yellow fever compared to the caucasian people that were dying in large numbers. He speculated that this may have been because Yellow fever came from Africa, and that the local people had some form of evolved resistance to it. It's taken one hundred and thirty years to prove this, but Darwin was actually spot on: Yellow fever is an African virus.

The work behind the 1900 landmark, the discovery of the vector of Yellow fever, was done in Cuba. Walter Reed and Carlos Finlay established that Yellow fever was passed on by mosquitoes. Many years on, we've now been able to take sequences of these viruses to work out where the Yellow fever originally came from. The evolutionary tree shows that the oldest viruses are from East Africa, and it then spreads east to west: from east Africa to west Africa; from west Africa to the east of south America; and from there to the west of south America. We can also use other techniques to date how old these viruses are, and they correspond remarkably well with the history of the slave trade. So it's almost certain that Yellow fever has an African origin, and that it came to the Americas with the slave trade.

THE ORIGIN OF HUMAN IMMUNODEFICIENCY VIRUS

The UN AIDS data from 2007 show that 33 million people are living with HIV, and that two-thirds of those affected live in Sub-saharan Africa[1]. In some of those countries, adult prevalence can reach almost 40%, often taking out the workforce part of the population. So the compound economic cost of AIDS is quite horrendous. So where does this virus come from?

The disease was first recognised in 1981, and two years later the virus was identified. We discovered that it was mainly transmitted sexually, and had a high prevalence in parts of Africa. In terms of evolution, the most important observation was that viruses similar to HIV are very commonly found in other primate species in Africa. Chimpanzees, monkeys and gorillas carry viruses that look just like HIV, called the Simian Immunodeficiency Viruses (SIV). Using modern evolutionary techniques, we can work out where the viruses have come from, and which host species gave us HIV. The closest relatives of HIV-2, a strain that is mainly found in west Africa, are SIVs that infect sooty mangabeys. It appears that there have been at least two transfers of the virus from monkeys into humans. The closest relative of HIV-1 is a SIV that infects chimpanzees. It's now been very well documented that HIV-1, the main strain, has jumped at least three times from the chimpanzee reservoir to humans. The sensible answer as to why this happened is related to changes in human ecology. More specifically, the activities of logging, and the linked trade in bushmeat. For example, chimpanzees (and other primates) that are on sale in markets in Cameroon often test positive for the presence of SIV. So it's linked to the way we live today.

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[1] 2007 AIDS epidemic update, UNAIDS,
http://data.unaids.org/pub/EPISlides/2007/2007_epiupdate_en.pdf

EMERGENCE AND INFLUENZA

What about other diseases? We shouldn't be overly pessimistic, because public health has made tremendous progress over the past one hundred and fifty years, and we are, on average, reducing our burden of infectious disease. For instance, the incidences of measles, scarlet fever, typhoid, as well as their mortality, have dropped since the 1900s. This is in part because of improved living conditions, and also due to vaccinations and antibiotics. One disease, however, stands out: influenza. Influenza still has a much higher mortality than most other infectious diseases. In the United States, 36,000 deaths occur per year due to influenza, a remarkably large number. Putting it in context, only 250 people have died over the past five years because of the H5N1 avian flu virus. So can we use the techniques of evolutionary biology to understand where flu has emerged from?

For the past hundred years there have been three big pandemics of influenza in humans. The most famous of these was the 1918 flu. It's called the Spanish flu because the Spanish were the first to describe the symptoms. There's a debate about how many people it killed globally, but it is somewhere between twenty and fifty million. So it is responsible for the single biggest death toll in history of humans by an infectious disease. There are two things that are interesting about the 1918 flu. The first is that it was so virulent, that it killed so many people. The second interesting thing is that the people that died were not the normal people that flu kills. Normally with influenza, it's the very young and the very old that die, usually because of a secondary bacterial pneumonia. The 1918 flu virus also had a peak in death in young adults, which is very hard to explain. There was a second pandemic in 1957 known as the Asian flu, and a third one in 1968 called the Hong Kong flu.

The natural reservoir of the flu virus are wild water birds. The flu virus is very promiscuous, and it can spread to a variety of other bird and mammal species, particularly poultry. From them it can then infect mammals, including humans, pigs and horses. Poultry are a good intermediate host because they live in large, dense populations that allow viruses to get going, like bats and rodents. Very interestingly, sometimes mammals can pass it from one to another. As an example, in 2003 the virus jumped from horses to dogs, so there's now canine flu. Greyhounds at a racetrack in Florida were fed horsemeat, and the horses had been infected with the flu virus. Now the virus is slowly spreading throughout dog populations.

The outer shell of the flu virus interacts very intimately with the host cell. This envelope consists of two proteins, haemagglutinin and neuraminidase. These two proteins are remarkably variable, that is to say they have lots of genetic diversity. Flu researchers classify them into subtypes, or strains. There are sixteen known strains of haemagglutinin, and nine known strains of neuraminidase. So theoretically there are one hundred and forty-four possible combinations of these proteins. One hundred and five of these possibilities have been found in wild water birds, where they don't tend to cause any serious disease. Occasionally some of these combinations have jumped into humans. So the 1918 flu is termed a H1N1 virus: it has strain one of haemagglutinin paired with strain one of neuraminidase. It is important to note that the 1918 virus didn't die out in 1918, it just became less virulent, and it petered on until the 1950s. In 1957 it was replaced by a new strain, called H2N2. This had a completely new shell that our immune system didn't recognise, so it caused a big pandemic. And in 1968, H3N2 spread amongst the human population. In 1977 H1N1, the strain that gave us 1918 flu, came back again. This was almost certainly a lab escape.

The flu viruses jump from a big pool of avian viruses, occasionally getting to humans. The way they do it is not just by simply jumping over, but by often shuffling their genes together in a process called 'reassortment'. This involves the human virus and the bird virus coinfecting the same cell, and exchanging genes. So the progeny can be the same as the parent viruses, or they can be a mixture of the two parent viruses. In each of these three pandemics, the human strain probably picked up some avian genes, particularly the outer envelope proteins, and that is why it caused a pandemic.

So the billion dollar question is, what's next? The big panic over the past few years has been this H5N1 virus. Although the case numbers are low, the mortality rate is really quite appalling. Unlike other influenza viruses, the H5N1 is unusual in that it does kill wild birds. This is why a lot of flu researchers are very worried about it. Four hundred and four cases is really very little in the grand scheme of things, but there's a 63% mortality rate, which is quite awful. If you multiply that by the world's population, that's billions of people dead. There is currently some debate as to how the virus spreads. There is some evidence to say that wild birds are spreading the virus, why others say it is due to the illegal trade in poultry. Near Alaska, north American and Asian flyways for birds intersect. So if it is in wild birds, the virus could easily get to North America. This has happened before: if you look at flu viruses you can see that there are a number of cases where the virus has moved across hemispheres and from east to west. There is no reason why it can't happen again. The other bit of bad news is that the virus is very genetically diverse, and it has been shown that this virus is continually changing. So a vaccine made today may not work against the avian flu virus of tomorrow. The way they make a vaccine is to grow the virus in chicken eggs, and the whole process takes three to four months. This is too slow given the ongoing evolution of the virus. It would be a big challenge to vaccinate against virus that is changing so rapidly.

The good news is that viruses from birds don't usually spread very well in humans. A very simple rule from evolution is that the closer two species are, the greater the chance that a virus that works in one will work in the other. The more distant two species are, the less likely a virus is to jump between them. For example, viruses that work in chimpanzees, which we're closely related to, have a good chance of working in us. Birds are much more different genetically, meaning that bird cells are very different to human cells, so bird viruses are just less naturally able to work in humans. For example, if you were to go to the Covered Market and were to buy a cauliflower to make a salad tonight, there's a very good chance that it would contain viruses. But you would never get sick because plant viruses do not work in humans. There are a lot of exceptions, as this is a very general rule. This implies, generally, that it will take more mutations for a virus to jump further in 'evolutionary space'. As humans and chimps are very close, it may not have been much of an adaptive challenge for the SIV virus to jump into humans. In fact it is speculated that one mutation was sufficient to make the chimpanzee virus work in humans. The consensus now is that it may take about thirteen mutations across the viral genome to make an avian flu virus like H5N1 work in humans, to the extent that it becomes a human adapted pathogen; these viruses can replicate in humans, but they won't get passed on until they pick up these thirteen mutations. As was mentioned before, RNA viruses evolve very rapidly, but even with this speed, thirteen mutations is a challenge. That's why many researchers think that the most likely way for H5N1 to get established in human populations is to reassort with a co-circulating human influenza strain that we have now, such as H1N1 or H3N2. This means that it is not actually that easy for an avian flu virus to jump into humans.

CONCLUSION: AND THE POTENTIAL OF METAGENOMICS

So what does the future hold? Animal species carry a lot of potential pathogens that could jump into our species. They always have, and they always will. The way we live today is going to allow that to happen. We have to accept this. We cut down forests, and by doing that, we expose ourselves to new pathogens, like HIV. We live in mega-cities, and the denser the population, the easier it is for a pathogen to get going. Travel allows pathogens like SARS to move around the world more rapidly than ever before. Wars and unrest help pathogens to get going too. There are two ways we can ameliorate this situation. Firstly, we try to have good surveillance to actively spot when new pathogens are coming up in a population. It is possible to draw maps with hotspots for diseases, and we want to pay particular attention to those hotspots where disease has got going in the past. Also, we have modern techniques to very quickly establish what the new cause of disease is, and these are often called 'metagenomics'. It took two years to find the virus that caused AIDS, which did not seem long at the time. It seems now that we would be in horror if it took two years to find out what the cause of an infectious disease was. One rapid approach to this is metagenomics. Very recently there was a problem with bees in North America. The bees would leave the hive, and most likely die. The hive would then collapse because the bees had left. This is called colony collapse disorder. Along with Diana Cox-Foster from Penn State and Ian Lipkin from Columbia, I've been involved in work to find out what causes the bees to die. We're now able to take a beehive and sequence all the DNA and RNA in the hive. So we're able to sequence the genes of the bees and the genes of all the microbial pathogens of the bees. We sequence all the pathogens in hives that have the disease, and compare it to the distribution of pathogens in hives that don't have the disease. It then becomes a computational problem to work out what differs between the hives that don't have disease and the hives that do have disease. We did this and we found that bees naturally carry a lot of pathogens of very diverse types. Interestingly, only one of them, a virus called Israeli Acute Paralysis Virus, is found in all the disease hives, and not in any of the non-diseased hives. So this is the most likely culprit for this disease. It's not proven yet, but we haven't found any exceptions to this rule. A lot more work needs to be done to find out whether it is actually because of this virus. But potentially this could work for any system: you can sequence all the DNA and RNA out there and work out what the cause is for a disease.

4

Emerging Infection: Panel Discussion

Panellists:

WJ: Professor William James, Chair
HJ: Professor Harold Jaffe
EH: Professor Eddie Holmes
TP: Professor Tim Peto
RW: Professor Robin Weiss
JC: Professor Jane Cardosa
PK: Professor Paul Klenerman

WJ: For the final session of the day I would like to welcome the speakers back to the table, and to introduce some additional panellists. We are very lucky to have people in this field working in Oxford. Professor Harold Jaffe, alluded to by all three speakers, is a very distinguished epidemiologist, and the current Director of Public Health in Oxford. For many years he was at the Centre for Disease Control and Prevention and was instrumental in the early stages of indentifying AIDS. He is joined by Professors Tim Peto and Paul Klenerman, who are infectious disease physicians of great distinction, working in Oxford.

A number of questions have been put forward by members of the audience. The proposer of the question should state their question, which will then be put to a relevant member of the panel, before being opened up to the rest of the panel for discussion. The first question has been written by Zara Dyar.

Zara Dyar: Should global health issues be covered in the school curriculum?

HJ: Well, I'm obviously biased as I run an MSc in global health. It's true that reading the newspaper and watching the news introduces you to global health concepts. But to be able to put some of these issues into context, in the way that the speakers have done today, to determine which are the big problems, would be very valuable in the school curriculum.

EH: I agree completely.

TP: The answer's 'Yes', but with a warning which is that a lot of global health issues are still being actively researched. I think the issue that arises is making it clear in schools which concepts are definitely established and true, and which are still research issues which might turn out to be wrong. That's my only caveat for that.

Judith Hockaday (retired paediatric neurologist): What age would you like to start?

TP: About twelve to thirteen.

RW: We recently ran an event in a school with some primary school children. We had a session on poo and flu, and they liked it. We gave them a phosphorescent handwash, and they all shook hands down a chain, and the last person had it on their hands from the first. So they got some ideas, and perhaps for a couple of days they washed their hands.

WJ: Should we do this in hospitals as well?

RW: Yes, experienced medical staff could have a revision day.

Eric Albone: I thought that Professor Peto's comment about not approaching pupils in school until you know what the answers are is actually wrong. In fact, I think the way to do things is actually to present pupils with uncertainties as well, and actually to get people to think about what the issues are, and to debate and discuss them.

TP: I agree with you at that level, my fear is that schools – all of us – teach things as certain facts when in fact they're not certain. So you then get false truths being taught. That's my anxiety.

RW: I think that's absolutely right, uncertainty is a really important part of education.

Mary Gregory (economist): How far do the panel see a tension between the intellectual excitement of the sorts of things that we've been talking about this morning, which drive and motivate researchers, as against the effort of some very well known diseases with enormous social costs, such as the treatment of the elderly and Alzheimer's?

HJ: I think that there is a natural tension in funding agencies because there is competition between dieases. It sounds awful, but it's true. So, is my disease more important than yours? And clearly a number of the decisions that have been made in terms of priority funding are based on a small group of academics sitting down, and they're often driven by politics, they're driven by public perception, they're driven by advocacy, and sometimes there's a backlash to it. There are people right now who would say we're spending too much money on AIDS, and we should spend more of it on Alzheimer's. So I think that tension is there almost by definition. It would be desirable to frame it in a more rational way, but I don't think that's the way it actually works.

Sasha Zueva: In light of the global burden of disease in developing countries, where infectious diseases are contributing to the death toll as well as chronic diseases, what do you think the public health priorities should be in the developing world versus the developed world? And what is the role of the international public health community versus national governments?

JC: Thank you for that question. I think it's very difficult to think of it as an either or situation, and that's always where the difficulty is when the resources are limited. In many situations the funding that comes for public health interventions, whether for chronic diseases or infectious diseases, is driven by the agendas of the West. And for some reason it seems to be the case that it's infectious diseases that you think we need to deal with, rather than obesity or any of the other problems that you are facing. And so the funding allocations that are coming from the

international agencies tend to be for the infectious diseases, particularly those that you heard about today which have a direct impact on you.

RW: I was going to add that the Wellcome Trust, which is a major funder for medical research, particularly in the United Kingdom, promotes health and disease research in developing countries, and they've started a new programme on mental health in developing countries. We tend to think that because there are lots of infectious diseases out there, there aren't mental health problems. There are colleagues, like Vikrum Patel at the London School of Hygiene and Tropical Medicine, who are setting up research areas which are very important. Even natural disasters like the tsunami that Jane mentioned have consequences, such as psychological trauma. So there are calls on all sorts of health questions, and perhaps as Jane says we need to be more forward-minded about it, and to seek funding. If I could come back to this question, I would actually stick up for basic science, and the research councils, which are the United Kingdom government's funding for scientific research. They are being increasingly pushed by the government that is providing the funding that all research projects should have a practical outcome. But if we go back over a century and we look at what key scientific discoveries were made because the funding was put in that specific direction, it's actually very few. It's 'short-term-ism'. So we have big charities like Cancer Research UK and so on, very wisely targeting particular diseases, and we have the government telling us what we ought to work on: the Medical Research Council. I won a great victory, I managed to get the order reversed on the electronic form about wealth implications and health implications: wealth used to be top. But it's still in there, and if you can't include something about wealth implications, you are not going to get your grant. And of course we're lying when we fill it out. These big discoveries are usually coming from different areas of science or from the interfaces between different disciplines, which it's very difficult to get funding for. We don't know what discoveries made in 2009 will turn out to have a practical use to human values in the longer term. Splitting the atom has been great, but it has lead to some difficulties too, but what did Rutherford say when it happened? Well, he couldn't possibly see any use for it. And he also said, "Well we haven't the money so we've got to think". But we need both, we need to think, and we need a little bit of research support. So I'd be much more liberal and say that scientists should do curiosity-led research. Gregor Mendel was just curious about his peas. And as Eddie told us, it was the synthesis of genetics with evolution that has given us our modern view of how these things are working. But Mendel wouldn't have got a grant.

Mike Gill (BNC old member, previous Regional Director of Public Health in the South East): I've got a question which is trying to locate the brilliant presentations we've had back into the field of human values. We heard from Robin that surveillance is improving, and we heard from Jane that surveillance is not an ethics-free activity, and Eddie's contribution showed us the huge importance of rapid response in the face of threatened or real disease. How do you think we should balance this whole question of some of the population-driven imperatives of proper surveillance on the one hand with the rights of the individual on the other? And do you think we've got that balance right at the moment in the United Kingdom?

RW: I should mention a colleague, Julian Peto, who says how difficult it is to do epidemiological research in the United Kingdom today because of what he regards as false ethical dilemmas about the use of information. It is actually quite easy to anonymise individuals, and still get the data on surveillance. But if you're going to use that data effectively, you're going to need to get

back to the samples you've attained and that's where the difficulty comes. So I think there is a tension there. I think it can probably be regulated and controlled so that both the rights of the individual are protected and we get better medical information from a public health perspective. But that may be expanded upon in the later session on human rights. But it's going to require a lot of careful thought, there are lots of other ways that modern society is prying into our lives, it's not just medical statistics and medical information.

TP: I think there is a huge problem about to what extent ethics interferes with research. Clearly one wants to be ethical and to not hurt people, it's an important thing to say, but I don't think that anybody disputes that. This question is illustrated in a recent example from our work. We were interested in *Clostridium difficile* diarrhoea and wanted to know if there it might be in newborn babies. So somebody went to the bins and picked up nappies from the newborn ward, but it is unethical to look at the thrown away nappies for the particular bugs in there because that is using someone's stool, which belongs to them, without consent. So if you did that it would be really bad, and it wouldn't get published. There's a very curious set of rules which have been created by a group of people who aren't really thinking about the particular, and the question you need to ask is how somebody is going to be hurt by doing this? As Robin just alluded to, we can't do look-backs. If you wanted to know what has happened to people who had meningitis ten years ago, we just can't any more find out. It would be unethical to know who had those diseases ten years ago because it would mean that you had kept a list, and that is not allowed. So you can't do look-backs. So there's a real problem which is all to be re-explored by the European Union.

PK: I'm not sure I can answer the ethics part of it, but there is a massive opportunity now in the way we can do science, as was alluded to by Eddie. The experiments to understand the evolution of the disease and the immune responses can now be scaled up by orders of magnitude. As an example, the work we have done here in Oxford on HIV was generally done on one or two individuals studied in an enormous amnount of detail. That gave us some information, but you can now do exactly the same sorts of experiments on thousands of people, and learn enormous amounts more. So unless this ethical issue is actually solved, we're going to miss out on huge opportunities to really get to the bottom of these major illnesses.

JC: I'd like to go back to the question of surveillance. In our part of the world, it's not the case that we don't want to do surveillance, but that the resources are generally allocated for surveillance that is focussed on single pathogens. So you have polio surveillance and avian influenza surveillance programmes. But the training and the technical inputs that are required for surveillance for any kind of infectious disease would likely involve generic approaches. However, we're not allowed to do the generic approach for various reasons to do with the organisations that are providing the funding, and the limits of what you are allowed to do with the funds that are allocated for polio. There is in fact no funding allocation for surveillance of diseases that are of a more local interest. You can imagine that if all of these were to be done together, in a co-ordinated fashion, it wouldn't require much more resources. So that's a big problem for us.

Hilda Rapp (Centre for International Peace Building): A lot of this discussion has been about putting epidemiology in the context of human security, environmental challenges, and human rights. All three lectures this morning, on the background of the speakers' very solid scientific

research, have contended that we should look at these interfaces. I'm hoping that throughout these meetings that you will be able to provide these links, to amplify some of the things you've given as the seeds of what happens when we deforest, when we bring diseases to populations that have previously been protected, what happens in conflicts when people die more from communicable diseases than from the effects of direct warfare. I just hope that the lectures as a whole will help to put that kind of political story more firmly on the map, particularly if it's supported by people who are very talented researchers. It's not so much a question as a big thank you.

Mary Judge: Thank you very much for an interesting morning. Can I just ask a question, I think started by Professor Cardosa, about who should be the people making these huge decisions that your work is forcing us all to take? And is there any way in which the decision-makers can be widened from the scientists and the politicians?

PK: It's an interesting question, it brings us back to the question of resource allocation and I think it does need input from all parts of society. Clearly there's an economic issue which is probably represented to some extent by the politicians, and then there are the scientists who tend to polarise to the other extreme where they prefer curiosity-led research. I imagine that average person, who might be represented by all sorts of groups, would have some kind of intermediate position where they can see both sides. So it would be hard to say how the panel of people who are judging how we spend our money and how we invest our time should really be made up. But I think it's a good idea to try to involve as wide a group: we're all stakeholders in it, essentially, because everybody's health is involved, so I can imagine that you could construct panels of grant-giving bodies that would be a bit broader than they currently are. But I'm not sure I could necessarily imagine how that would be created. To a certain extent the politicians are supposed to be democratically elected. so in this context they are representing the public.

EH: One of the tensions that we have is that if we over-respond the public don't like that, and if we under-respond we get a pandemic. The avian flu is a good example: the US government spent billions of dollars research into trying to contol avian flu and it hasn't happened. So some people think it was hype, it was over-played, and is just a way of scientists trying to get some money, and drug companies making Tamiflu getting funded. So paradoxically, we look kind of bad for it not causing a pandemic. So this is a kind of tension. SARS was another example, but I really think we dodged the bullet with SARS. The world acted very rapidly in a coherent manner and stopped what could have been a very serious pandemic. So we're in a kind of no-win situation. If we are blasé, we don't spend the money, and we get a pandemic then everyone blames us for not acting quickly enough. If we over-react, and nothing happens, we're blamed for over-reacting; it's a very difficult situation. I think we need barriers to be broken down between governments so that information can flow easier.

WJ: It's probably better to be blamed for having not allowed it to happen than vice versa.

EH: You do hear a lot of conspiracy theorists saying that the avian flu has just been made up.

Kenny Moore: What do you think the end point of the HIV epidemic is, will it become endogenous, and if so, how long will that take?

HJ: I think there are two parts to your question. One is what is the likely course of the epidemic over the foreseeable future, and then what is the likelyhood in many hundreds of thousands of years that we'll 'come to terms' with the virus genetically. In the relatively short run, say over the next twenty to fifty years, I think most projections are that the overall prevalence of the virus in the world will probably stay about the same, or perhaps go up. And the reason for part of that is the paradoxical good news that now that we're doing a reasonably good job in making therapy available in the developing world, people with HIV are not dying from it. But at the same time it means that the number of infected people continues to go up. So for example in the United States there are more than a million people now living with HIV/AIDS. If we can't do a better job at reducing incidence of new infections, which we've not managed to so far, the number will keep going up.The current estimate is between fifty and sixty thousand americans get infected every year, but fortunately they're not dying, so the number of infected people keeps going up. I would think that that is going to start having an effect on the epidemic worldwide as people in developing countries get the benefits of treatment.

PK: There is some recent work from Philip Goulder, who is a fellow at Brasenose. He studied in large groups of different outbreaks around the world how the virus was adapting to different populations. So if you take genetically distinct populations with essentially the same virus, in Japan, Barbados, South Africa you can see that the virus is clearly adapting to the host. It's doing it in a way that means that some of the resistance genes that were pointed out earlier, those genes that have a big impact on how the virus is contained, have had their effects, to some extent, abrogated. We don't know what the real effect of this is, but it really does mean that even over the short pediod that it's been in humans, the virus has managed to explore a lot of the niches that it really needs to explore in order to survive. So I think that the actual course of the infection could continue to give quite an interesting set of surprises in the future. We don't know what the clinical impact of this is, but certainly at the genetic level you can see it quite easily.

RW: I think as Paul just said the virus is evolving faster than we are, so we might get slightly more resistant humans in future generations but that will take a long time and the virus is finding a way around it. What we need is a vaccine against HIV just to stop people getting infected in the first place. And we're just nowhere near that. It partly comes back to this question about what we should be spending our money on. There was a lot of debate in the late 80s and through the 90s about whether we should be using our AIDS funding for research into treatment or for research into vaccines. The pressure from the activist groups, the people living with HIV, was that we were putting too much effort into vaccines: that was to protect future generations. "Hey I've got HIV on board now, if you did you research into therapeutics, I might live". And there was quite a tension for a time, but two fortunate things happened. More money came in so we could adequately fund both, and our lack of research success in vaccines is not due to lack of funding at the moment, but a lack of scientific breakthroughs; it's not a conventional virus, we tried all the things that worked for smallpox and yellow fever, and they're not working. The second development is, as Harold says, that the therapeutics have really come through. So we have a larger population of HIV infected people because they're not dying. But if we're going to overcome this pandemic we're going to need a vaccine to prevent infection. I don't envisage HIV becoming just so naturally attenuated that all it gives you is

something like a cold, and you can live with it quite happily without being on treatment. I'm afraid I'm a pessimist on that.

WJ: I'm going to push Eddie to answer a slight variant on this question, picking up on what Robin was saying there. In a couple of hundred thousand years if we don't have a vaccine, is it more likely that HIV will have attenuated and we'll live with it, or that all humans will be Baltic descendents with CCR5Δ32 mutation?

EH: The evolution of virulence, how bugs change their nastiness through time, is one of the most vexed questions in evolutionary biology, and there is no simple answer. You can run the model any way, and it could be that nothing will change, it could be that it will get worse or it could be that it will get better. The one thing you learn about evolution is not to make predictions. I'm not going to answer your question because we just do not know. To me that isn't the key thing, the key thing is for us to have surveillance and to be able to respond quickly. And the tools we have to identify and characterise new pathogens would have taken a phenomenal amount of work ten or twenty years ago. So I'm actually quite hopeful that scientifically we've made great breakthroughs. A HIV vaccine is way off, but in terms of finding the causes of diseases and reacting quickly, we've made terrific advances.

RW: Is your new virus in beehives a virus in bees or a virus in their mites?

EH: It's a virus of bees.

RW: Because if we don't sort pollination, if we don't save bees, don't worry about AIDS in a hundred thousand years.

EH: Just to follow that up, the bee situation is very controversial, nobody really understands. As we know bees carry lots of infections and mites, and what I think this virus does is it acts as one too many, it pushes them over with this extra stress. I don't think it's going to be that the bees die of the illness of the virus itself, it's just one more pathogen load over the threshold.

WJ: We have a supplementary question from the audience.

Rebecca Harrisson (currently studying for the MSc in Global Health on Professor Jaffe's course): I had two questions, the first one is you've been talking a lot about allocation of funding and how a lot of it is currently going to HIV so even within HIV you were mentioning how funding is being allocated to different places. One of them for example is PETFAR, where the funding is restricted as to where it can be spent, so the first question is: is all funding in HIV good funding? And then the second one is that the current economic downturn is probably going to affect spending in global health quite significantly, so how do you see that impacting on the current situation in global health spending and priority setting?

RW: A quick one on PETFAR, which is the American President's Fund for Aids. We have a new President with a different attitude about restrictions on spending, so let's see how that pans out.

WJ: What about the economic downturn and its effect on emerging infections?

HJ: I think there is a series of questions, ranging from the very immediate to those a bit further off. The immediate question is can the obligations to treat patients that have been started on treatment through programmes such as PETFAR be maintained? And it seems to me they have to be, I mean that's the absolute requirement for these programmes, because if you stop treating all these people they're going to die. So three million people have been put on treatment as a result of PETFAR, the Global Fund, and various other efforts. If you stop treating them, those three million people are going to die in the next year or two. So I think we've got to think about it in terms of immediate priorities versus priorities that apply over the next five to ten years. We've got to meet the immediate priorities, and beyond that we have to start thinking hard about what's the second, third, fourth most important thing to do.

RW: That means thirty million people are not on treatment, if only three million are?

HJ: Well the current estimate from WHO is that about nine million people would meet the criteria that they've set, of whom about three million are on treatment. Now I'm sure a panel of ethicists would debate whether it's more important to meet the commitment of those you started on treatment versus starting new people. But as a non-ethicist, just a practical doctor, I would think you would need to meet the commitment of the people you started on treatment already.

TP: I think that the global downturn has a very interesting impact on global health and on the first world view about whether we will be able to give aid or not. One of the challenges about HIV treatment is that the generic drugs are cheap if you get them in India, and the question is whether they're allowed to be used or not, around the world. And the second point is that of delivery in local populations. They can be taught and take it upon themselves to do it for themselves, but the question is how much do we impose our values and views on how local people do it? Do you have to have professional doctors and pharmacists to give out the drugs? That sort of issue is political, social and not particularly scientific. But I think those things are getting in the way of delivery. I also think that if there's no money in the West, it is possible that clever, motivated people will stay in their local countries because there's no money to get here. So it might actually help poor countries. So I don't know, I think it's actually quite complicated.

HJ: I also think you have to look at it in terms of how much money we're talking about. The 2007 estimate from the UN AIDS was that about ten billion dollars was being spent HIV/AIDS in developing countries which is a lot of money, but General Motors just asked for more than that. So I think somebody has to step back a little bit and say "Well wait a minute, where are our priorities?".

Derek Hockaday (Fellow, BNC): How long is 'the future'? Because coming up is fossil fuel pollution and exhaustion. And to go back to Darwinian principles, with the RNA viruses, if they're mutating fast, are they liable to lose their virulence? So presumambly what they would conserve by selection is infectibility and reproducibility in the host, and if the virulence isn't driven entirely by reproducibility in the host, then won't it gradually fade out?

EH: There are two points there. The reason why predicting whether viruses become more or less benign is to understand the relationship between virulence and how they transmit, that's

the crucial problem. And you can argue it either way, so you're absolutely right. You mentioned fossil fuels, and so at the moment there is lots of talk in the United States about biofuels, and whether they're a way of making us reduce our carbon emissions. Let me assure you right now that biofuels are a very good way of causing movement of diseases. What's going to happen is that we're going to deforest large parts of the world to grow the plants to make the biofuels, and we're going to expose ourselves to new pathogens. That is an absolute dead certainty. So you can hear it here first, biofuels are not the answer in many ways, and I think they will definitely lead to infections.

WJ: That's a great way to round up our session. I'd like to thank all the speakers and the panellists for a really stimulating session: thank you very much.

Part 2:

TERRORISM AND INTERNATIONAL SECURITY:
What have we learned from Afghanistan and Iraq?

Section1: Introduction

Llewelyn Morgan:

The explicit aim of this session is obvious, I would hope: it is to hear experts in the field talk and argue creatively about the various decisions that have been made in relation to Iraq and Afghanistan since 2001, and also to think and argue creatively about future directions which could be followed in those two areas. The implicit aim, which I hope is not *too* implicit, is to illustrate precisely how the intelligent discussion and consideration of this afternoon's issues – which is the kind of thing that should happen in an Oxford college – can help us make those decisions more sensibly in the future. Such a claim is not exactly what one might call rocket science, or even some of the technical medical science that we were hearing about this morning. Simply: these are essential things to think about; and an Oxford college is a very good place to think. I appreciate that in saying this I have delivered a truth situated at the rather obvious end of the spectrum, but it remains an obvious truth which can be neglected, even in a 500th year.

One of our scheduled speakers, Tanvir Ahmed Khan of the Institute of Strategic Studies in Islamabad, has not been able to join us for medical reasons. That is very sad, particularly in the light of very interesting things happening in Pakistan at present. Nevertheless, I think you will find the speakers that we do have fascinating and thought-provoking. Our chair for the first part of the session, Paddy Docherty, will introduce the first two speakers.

Paddy Docherty:

It is my pleasure to introduce two speakers whom I think we can say are both from the T.E. Lawrence school of soldiering, in that they combine the practices of the hard-nosed military art with a leaven of scholarship, and an interest in counter-insurgency, or irregular, warfare.

Our first speaker today is Dr. John Nagl. Formerly a Lieutenant Colonel in the US Army, he is now one of the foremost experts in Counter-Insurgency warfare. In his academic career he was a Rhodes Scholar at St. John's College, where he completed a doctoral thesis on counter-insurgency lessons from Malaya and Vietnam, which was later published as *Learning to Eat Soup with a Knife*. In his military career, he commanded a tank platoon in operation Desert Storm, and also served for a year in Iraq in 2003-4, and his most recent command was of the 1st Battalion 34th Armour at Fort Riley in Kansas, where he was training transition teams for Iraq and Afghanistan. Having left the military he is now the president of the Center for a New American Security.

Our second speaker is Leo Docherty. A soldier, adventurer, linguist and author, he was formerly a Captain in the Household Division of the British Army. He served in Iraq in 2004-5, before deploying to Afghanistan in April 2006 with 16 Air Assault Brigade; he was initially in the Headquarters of the Helmand Task Force, and then became attached to the Operational and Mentoring Liaison Team. In these capacities he was, incidentally, one of the first British soldiers into Sangin in May 2006 – the town that was in the news constantly that summer. He resigned from the army following his tour of duty in Afghanistan, and subsequently wrote his own account of his service, in Afghanistan and also in Iraq, which is entitled *Desert of Death*. He is currently writing a second book, in the Oxfordshire countryside, which is about his recent overland journey from Istanbul to Kabul.

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Learning to Eat Soup with a Knife:
Counterinsurgency Lessons from Iraq for Afghanistan and Beyond

John Nagl,
Center for a New American Security

It is an enormous pleasure for me to be here on the 500th anniversary of the College, a college that is near and dear to my heart – my supervisor at Oxford, for both my MPhil and my DPhil was a product of Brasenose, Prof. Robert O'Neill – so I've had both a father-figure and - as it happens - a wife as a result of Brasenose College! Sincerely: It would be hard for any man to have been given more.

I'm going to talk about counter-insurgency since that's what I do. My interest in the subject started as the result of a very conventional war: Operation Desert Storm. The air-land battle doctrine deployed in that war, with the aeroplanes working in close co-ordination with the tanks, was an extremely effective one. Following that operation it was perhaps very natural that my army decided this air-land battle doctrine which we had developed ought to be pursued further, and we focused yet more on this skill in which we were already the best in the world. But my thought, based on my experience of what I'd seen from the top of my tank, was a little different, it was 'Boy, this air-land battle stuff works really, really well. Nobody is ever going to fight us this way again!' America has such an overwhelming conventional superiority, in the tank-on-tank, fighter plane-on-fighter plane kind of war, that our very superiority drives our enemy to the edges of the spectrum of conflict. On a simple diagram from peace, through unstable peace, insurgency, general war, and at the end of the line, global thermonuclear war (which is something we try to avoid), America's conventional superiority drives our enemies to the edges. So North Korea *has* acquired nuclear weapons, as sort of an invasion insurance, Iran is *trying* to, we *thought* Iraq was (sorry about that!). Or alternatively, our enemies are driven to the low end of the spectrum of conflict, toward insurgency or terrorism.

So after Desert Storm, when the army decided to send me back to Oxford to get my DPhil (because we all make sacrifices for national security!), I decided to look there, at the low end of the spectrum of conflict and insurgency, and terror. And obviously if you're reading about insurgency at Oxford you absolutely have to read the works of T. E. Lawrence. I had been for a run on Port Meadow, and I was reading Lawrence in the bathtub (I guess that's what you do at Oxford) and I hit this phrase, from chapter 17, as I recall: 'to make war upon rebellion is messy and slow, like eating soup with a knife.' And I was so excited, it was an eureka moment. I came out of the tub and I said, 'Eureka, eureka, I've found it, I've found it, I have the title of my dissertation!' And my wife, a stunningly practical Brasenose woman, said, 'That's nice dear; go put some clothes on, please!' So I did; and then I had ten words: I had the title of the

dissertation: 10 down, 99,990 to go. And to come up with those 99,990 words I looked at the cases of the British army in Malaya and the American army in Vietnam.

The Brits fought a counter-insurgency campaign in Malaya (what is now called Malaysia) from 1948-1960, and they started badly. Western, conventional armies tend to start badly when they're fighting insurgency – that's why the insurgents fight them that way! But the Brits adapted, they learned, and they ultimately defeated their rural communist insurgent enemies in what is today widely viewed to be the classic case of successful Western counter insurgency in the 20th Century; and it only took them 12 years. So when Lawrence said these wars were messy and slow, he wasn't kidding. And I compared that case with the American army in Vietnam, which also started badly, as we would expect; which also adapted and learned; but which didn't learn fast enough. And ultimately the United States was defeated in Vietnam at an enormous cost to the people of that country; to the entire region, which was destabilised for decades; and to the American army, which suffered for a generation recovering from the trauma of Vietnam. So that's what I looked at for my doctoral dissertation.

Professor O'Neill taught me many things; and one of the things he taught me was that in general you should do the research first and then write your book. In my case I did it the other way around: after having written this book, I went to Iraq and practised counter-insurgency for the first time in 2003-4; and what I found was an army – my army – that was not ready to conduct this kind of war; and I came back from that experience determined to do something about it, to help my army, my nation, be more effective in the kind of war it was fighting today. And so my argument today is that we did in fact, finally, in the nick of time, figure out how to conduct counter insurgency more effectively and we adopted effective counter-insurgency principles in Iraq in 2007-8 to pretty good effect. We have not yet done so in Afghanistan. I am hopeful that we are going to. I think this is a critical year for Afghanistan, with the new administration making very important decisions about that war; and very importantly, we have to institutionalise this in my army, in your army, across NATO, across the world, so that we never again struggle so badly as we did in Iraq 2003-6 and as we have in Afghanistan, I would argue, during 2001-9. So that's what I'm going to talk about today.

Secretary of Defense Robert Gates has been enormously helpful in the process by which the US army has learned and adapted. He gave a speech to the Association of the United States Army. At these Association of the United States Army talks, the Secretary of Defense usually comes in and says: you guys are great, we love you all. This time he was a little harsh, frankly, he said some mean things to my army. He said:

"In the years following the Vietnam War, the Army relegated unconventional war to the margins of training, doctrine, and budget priorities….[This] left the service *unprepared* to deal with the operations that followed: Somalia, Haiti, the Balkans, and more recently Afghanistan and Iraq – the consequences and costs of which we are still struggling with today."

I am confident there are many former members of Her Majesty's Armed Forces in the room. In general I am confident that, like me, you try to avoid the word 'unprepared' as an evaluation of your performance. That smarts. When the minister says 'unprepared', that leaves a mark. That's the bad news. The good news is that armies can in fact adapt and learn. Here I'm drawing on the work of Richard Downey, a retired US Army Colonel with a PhD from the University of Southern

California. At USC, Downey wrote a dissertation which became a book called *The US Army as Learning Institution*. That is not in fact an oxymoron. He defined organisational learning as:

"A process by which an organization uses new knowledge or understanding gained from experience or study to adjust institutional norms, doctrine and procedures in ways designed to minimize previous gaps in performance and maximize future successes."

In the auditorium of the Saïd Business School, where we are gathered today, I will use the terms of business. You 'benchmark best practices', you find out what works, and then you ensure that the whole organisation does those things: that's organisational learning. I give this talk often: I gave it at Quantico a couple of months ago to a wonderful room of 93 Second Lieutenants of Marine Infantry, bless their hearts. And these young eager Lieutenants of the United States Marines – I asked them: what's better, guys, experience or study? And as you would expect, a room full of 23 year olds, hungry to see the elephant, universally said 'experience', 'we all want experience'; and I said: No, guys, what you want right now is study. Absolutely none of my friends have been killed studying (some of them have had horrible accidents maybe – falling asleep on pens, eye accidents, that sort of thing, usually reading my book) but way too many of my friends have been killed in gaining experience in counter-insurgency warfare, so open the books, guys!

There is an American fighter pilot named John Boyd – in my eyes one of the great intellectual leaders of the American military of the Twentieth Century. John Boyd fought over MIG alley in Korea, during the Korean War, that horrible, forgotten war. And over MIG alley in Korea we were flying F-86 Sabre jets, they were flying MIG-15s; and to quote *Top Gun*, 'the enemy you're flying against is lighter, faster and more manoeuvrable'. And one would expect that given that we were flying over their home turf, and they had the better planes, that we would lose; and in fact the kill ratio was about 9:1 – we shot them down at a ratio of 9:1; and John Boyd tried to figure out why that was. He came up with an idea he called the OODA Loop: the pilot who Observes what's going on, Orientates himself in relation to the enemy, Decides what he wants to do and Acts faster, gets inside the enemy's OODA Loop, or decision cycle: That guy wins 9 times out of 10. A very important idea.

Richard Downey applied that idea to ordinary organisations, because whilst it's wonderful that fighter pilots fight bravely at 30,000ft as individuals, armies fight as *organisations*. How do organisations learn and adapt, how do they get inside the enemy's decision cycle? Consider: if a situation changes, if an army which was organised, designed, trained and equipped to fight conventional warfare, suddenly finds itself waging war in the shadows against an enemy who won't show his face, then there are going to be individuals within the organisation who pay attention to what's going on. They will identify organisational performance gaps: typically the way that happens is that somebody says, 'Man, this isn't working!' They will figure out alternative organisational actions: 'Right, let's try it this way'. That's when it gets hard: the organisation has to come to a sustained consensus that the old ways of doing business are no longer sufficient, that something new has to happen. If that's achieved, it is then comparatively easy to transmit this new interpretation by publishing doctrine that should change the way the organisation acts on the ground. In a healthy organisation that cycle repeats endlessly; in a successful organisation, that cycle repeats faster than the enemy.

It is my firm contention that in Iraq until the end of 2006/start of 2007, the enemy was inside our decision cycle. It is my contention that in Afghanistan *today* the enemy is inside our decision cycle: he is adapting faster than we are. We changed in late 2006. Many things changed in late 2006, early 2007, among them the publication of Field Manual 3-24, the Army Marine Corps Counter-Insurgency Field Manual let me talk about that book a little bit.

In any counter-insurgency campaign the actual number of people you're fighting is very small – the fight I know best was in a place called Khaldiya, a lovely little town between the also lovely (slightly larger) towns of Ramadi and Fallujah, of which you may have heard. So Khaldiya's a pretty nice neighbourhood (I actually bought some property there: I was thinking about retiring there, but Susi said the schools were better outside Washington, so that's where we live!). In the sector I was responsible for were about 60,000 souls; of those 60,000, as near as we could tell, about 300 were actively trying to kill me and my guys, that's about one half of 1%. In a straight fight against my tank battalion task force (800 soldiers, tanks, artillery, helicopters) the fight would have taken somewhere between 3 and 5 minutes. But it wasn't a fair fight: they were, to use Mao's phrase, fish swimming in the sea of the people: the population of Al Anbar in 2004, neutral, passive or, frankly, actively supporting the insurgency at that point. While the number of insurgents was small, the proportion of people who actually supported the government and the coalition in Al Anbar was also very small, however. If I could have snapped my fingers and magically killed or captured all 300 of the guys who were trying to kill me - successfully, unfortunately, killing too many of my soldiers - their brothers would literally have risen up to fight some more; and we saw that happen over and over again. So the *only* way to defeat an insurgency is to change the conditions that support it, that enable it and empower it.

To provide less room for the insurgents to swim, you've got to drain the swamp; and to do that you've got to increase support for the government or coalition. We came up with a number of logical lines of operation to do that. i) Combat operations against identified insurgents, obviously. Certainly: never turn down the opportunity to take an enemy off the battlefield. That is necessary but it's not sufficient; it's not even necessarily the priority of operations. ii) Train and employ host-nation security forces, something I worked on for my last two years of active duty and an issue I continue to work pretty hard on. iii) Provide essential services to the population (sewers, water, electricity, academics, trash collection, those sorts of thing), which also helps with iv) economic development. In Al Anbar in 2004, unemployment was 70%. On a list of the good places to conduct counter insurgency I recommend Malaya: a peninsula, no significant external support, not a lot of weapons laying around, the insurgents readily visually identifiable (an ethnic minority in the country) and CNN hadn't yet been invented! On a list of the bad places to fight an insurgency, Al Anbar 2004: 70% unemployment, weapons lying everywhere – literally to be had for the taking – an extraordinary surplus of angry, unemployed young men. Ultimately you're trying to create a government that meets the needs of all of the people. All of these lines of operation I've mentioned are subordinate to and tied into, interwoven with (hopefully) a comprehensive information-operations campaign. I believe that's decisive; I believe it's the part of this war we are fighting least well. We've done a good job, I think, of adapting under fire to the demands of counter insurgency: I've been giving this talk for a long time and initially I had to say we've done a very good job of adapting from the bottom up (that's a polite way, of course, of saying we had done a lousy job of adapting from the top down!). We are now doing a better job of adapting from the top down as well. We figured out over time that the essence of success in a counter-insurgency campaign is providing security to

the population. First, this was the critical mistake in Iraq in 2005-6. I would argue that it remains the critical error we are making in Afghanistan. Without security, without that base of Maslow's Hierarchy of Needs, you simply cannot do the building and the creation of a government that meets the needs of, and has the support of, the population. If the government cannot provide security, somebody will, and it will probably be insurgents.

Intelligence. The hard part of conventional war is killing your enemy: he tends to make himself hard to kill, he puts on armour, and arrays himself in battle and tries to kill you. That's quite sporting really. In an unconventional war the hard part isn't killing your enemy, it's *finding* him – he is that fish swimming in the sea of the people. Developing the intelligence on the enemy requires a close relationship with the population that we simply haven't been able to develop yet. In most of Afghanistan we weren't able to produce an Iraq until we changed our strategy, pushed out of our big Forward Operating Bases (FOBs) and lived among the people. Ultimately we were trying to create a government that could meet the needs of all of the people: doing that may require, distasteful as it is, dealing with people who have killed your soldiers, and one of the keys to success in Iraq in 2007 was tribal accommodation with the Sunni tribes, many of whom had been killing us. In what became called the Sunni Awakening - and then the Sons of Iraq - the Sons of Iraq had previously been Sunni insurgents, and through strategic jujitsu and lots of negotiation and lots of cups of tea, and some very good work by Petraeus and his team, we were able to get them to stop fighting us and start fighting against al-Qaeda in Iraq – an extraordinary story in which the enemy of my enemy is my friend.

Success. Our exit strategy both in Iraq and in Afghanistan has to be via host nation security forces: Iraqis providing security to Iraq, Afghans providing security to Afghanistan. We are frankly there in Iraq, increasingly, with the Iraqi army now north of 250,000 – reasonably well equipped, reasonably competent – still some vestiges of sectarianism, but moving in the right direction pretty strongly. We are very much *not* there in Afghanistan: the Afghan National Army is 70,000 strong, about one quarter of the size of the Iraqi army despite the fact that Afghanistan is a bigger country and has a larger population than Iraq. We simply have not put the resources into building the Afghan National Army that are going to be necessary to succeed for our countries to depart there with honour intact and with security established. So: I believe very strongly there are at least four reviews of Afghan strategy going on right now in Washington where I live. I am confident that the one thing they will all agree on is a vastly expanded effort to train and equip the Afghan National Army. If I were a member of the British armed forces, I would expect to be asked to provide additional trainers and mentors and advisors to the Afghan National Army and perhaps to run additional training sites for the ANA. I will tell you that the Afghan National Army soldiers I worked with are willing to fight, confident, loyal to their government; but there simply aren't enough of them.

Finally, the best book on counter insurgency was written not by an American and not by a Brit, but by a Frenchman. That book is by David Galula, the 1963 book *Counterinsurgency Warfare: Theory and Practice.* Fascinatingly, it was not published in French until 2008 (so it isn't just the American army that's had some amnesia about counter insurgency – the French had some bad experiences in places called Algeria and Indo-China, you may have heard) so the French have not been particularly interested in learning about counter insurgency. They are now, with Galula published in French, with a preface by a guy named Petraeus, they are now interested in doing better at counter insurgency. As a matter of fact, I would argue they are performing very well on

the ground in Afghanistan. Galula says counter insurgency is only 20% military and 80% political: I will tell you that in my country, at least, we have short-changed the 80% of the fight that is not military. And I'm hopeful that our new Secretary of State, Secretary Clinton, will provide additional resources to the State Department to build the non-military elements of power that we need to fight this kind of war more successfully.

Afghanistan is a very different fight from Iraq, and I've talked about some of the reasons why. It is, I believe, possible for us to drive a wedge between the Pashtun insurgents and al-Qaeda, in a way similar to the way were able to drive a wedge between al-Qaeda in Iraq and the Sunni insurgence of Al Anbar, and then throughout the rest of Iraq in 2006-7. The single most important thing to recognise in Afghanistan – the words of the Chairman of our Joint Chiefs of Staff, Admiral Mike Mullen, said in September before the US congress – 'We are not winning!' And it is essential, if one is going to perform *better*, to recognise that one is not performing *well*. The first step towards winning a war is to recognise that you are not, thus the incredibly important admission of Admiral Mullen, in open testimony: 'We are not winning' in Iraq. That allowed the American military and diplomatic establishment to proceed forward from that, and start pouring additional resources into that fight, something that I've watched with great interest over the past 6 months; something I think you can expect to continue to see, because I don't think we're going to be winning in Afghanistan until 2010. I think a whole lot more resources are going to flow from my country into that war, and I think President Obama will ask you for more as well.

Some of the things we need: a common understanding of the problem, an appreciation of the fact that the war in Afghanistan includes the war in Pakistan, and that success in both of those countries is going to require a different understanding with India. We talked a little about a tribal engagement strategy, about the need to 'resource the fight': the book says that we need 20-25 counter-insurgents for every thousand people in the population. For Afghanistan that would be a total of about 600,000 counter-insurgents; today we're at about 200,000 counter-insurgents, counting all of the Afghan security forces and all of the internationals – one third of the number required. It should be no surprise that we're not doing spectacularly well when we're resourcing the fight at one third of the identified requirement. We can do better.

Finally, roads: I was in a helicopter with an American General Officer flying over Afghanistan in November, who pointed with great pride to a road building project that he was overseeing. The road stopped, and he said 'where the road stops, the Taleban begins'. The Romans knew how to conduct counter insurgency: the first thing they did when they had a rebellious province (usually in Germany where I come from) they would build a road there, create strategic mobility, allow the government to extend its writ and reach to the furthest corners of the province. That is something we have not succeeded in doing in Afghanistan: roads are how we win this war.

Counter insurgency is enormously difficult: despite that fact, armies can in fact learn how to do it more effectively. Winston Churchill said of my country, 'America will always do the right thing – after it has exhausted all possible alternatives!' It is my contention that the United States army had exhausted all possible alternatives in Iraq in 2007, and simply had no choice but to adopt more effective counter-insurgency strategies there. I would contend that we are in the same position in Afghanistan in 2009: we have no choice, we have to do this better. And although we've come a long way, in my country and in my army, we still have a long, long way to go. I like

to think of the so-called Global War on Terror (a phrase of which I am not fond) as a global counter-insurgency campaign: a war against insurgents of many different stripes, in many different countries around the globe, but a war that will be won only 20% by military means, and 80% by non-military means. And so if that is the kind of war we are fighting, globally, we have to get better at this counter-insurgency problem.

Finally, I'd like to quote from a speech I was privileged to attend. Secretary of Defense Gates again, at the National Defense University in Washington, on September 29th. Gates said to a group of American military officers:

"In Iraq, we've seen how an army that was basically a smaller version of the Cold War force can, over time, become an effective instrument of counterinsurgency. But that came at a frightful human, financial, and political cost. For every heroic and resourceful innovation by troops and commanders on the battlefield, there was some institutional shortcoming at the Pentagon they had to overcome. Your task… is to support the institutional changes necessary so the next set of colonels, captains, and sergeants will not have to be quite so heroic or quite so resourceful."

And I am now at this point going to turn the microphone over to a man who has been, in my eyes at least, both heroic and resourceful on the ground, both in Iraq and in Afghanistan. Thank you very much.

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Desert of Death:
British Military Intervention in Helmand Province and the Comprehensive Approach

Leo Docherty

Ladies and Gentlemen, it is my great pleasure to be here. As our chairman has mentioned I'm going to talk today specifically about Helmand Province, discuss the 'comprehensive approach' that has been tried there, talk about the subsequent military conflict; and ask the question – is it too late to win hearts and minds?

Before deploying to Helmand province (in the Southern half of Afghanistan) in the spring of 2006 my colleagues and I in 16 Air Assault Brigade considered our mission to be one of "Nation Building". We didn't know a great deal about Helmand but we did know that it was Afghanistan's largest province, that it lacked any real governance, was populated by roughly a million Pashtun tribesmen, was painfully under-developed and was at the centre of Afghanistan's opium industry. Despite being largely arid, Helmand is extremely productive. The Helmand River flows the length of the province from the mountainous north (where Helmand meets the Hindu Kush) to the deserts of the south and the Pakistan border; through centuries-old systems of irrigation, the land is made fertile.

The title I have chosen today, *Desert of Death,* is the local name for the desert that swallows the southern half of Helmand Province and runs through the southern half of Afghanistan. Before deploying we thought this name rather amusing, but sadly it has reasserted its literal meaning for British troops.

Our intent was Nation Building; we wanted to help the people of Afghanistan build a sustainable, peaceful future; and our tool to achieve this was to be called the "Comprehensive Approach" – this was our doctrinal tool. This doctrine was normally represented in our training as a triangle, with each side representing a "line of operation". Our lines of operation in Helmand were to be:

- Security;
- Development;
- Governance, twinned with counter-narcotics.

Security would be provided by the Army, Development would be implemented by the Department for International Development (DfID) and Governance - running in tandem with counter-narcotics - would be nurtured by the Foreign Office (FCO). Clearly this was not to be a purely military operation; we the Army were to be equal partners with two other arms of government. Furthermore, all of this was to be undertaken alongside the Afghans themselves.

We anticipated, as our Brigadier often said to us, an "Afghan solution to an Afghan problem". In practical terms, the most pressing tasks we faced were alleviating rural poverty, stemming opium production and training the Afghan National Army (ANA). If we got the balance right in this "Comprehensive Approach", hearts and minds would be ours and the Taliban wouldn't have a look-in.

So before deploying no one expected what we call a "kinetic" or war-fighting operation. Indeed, at the time of our deployment, having read all about previous British historical exploits in Afghanistan, we considered ourselves both sensibly aware of the dangers of military intervention in Afghanistan (after all, this was to be the fourth British intervention in 150 years) and we were very keen, this time round, to get it right. So we were hugely optimistic and there was everything to play for.

After deploying to Afghanistan, I managed to get out of Head Quarters and, since I had done a Pashtu course, to join a unit called the Operational Mentoring and Liaison Team (OMLT), a unit created to enhance the Afghan National Army (ANA) through training in barracks and mentoring while out on the ground on joint operations. This embodied the "Capacity Building" approach I believed in: in training the ANA we really were, in the words of the old proverb, teaching a man to fish. We were responsible for training an Afghan battalion of four hundred men. This was a mixed body of men, of all ethnicities, from all parts of Afghanistan. They had done six months in the Kabul Military Training Centre, and we then conducted continuation training in basic infantry tactics and were then deployed to a Forward Operating Base (FOB) in the Sangin Valley, replacing an American special forces unit.

This base was some miles out of the town itself, but only hours after arriving we had word from our Headquarters that the town was under attack from the Taliban and we were to seize and occupy the town in support of the Government. So we launched in a combined operation together with the Afghan National Army and occupied Sangin town itself. We did not meet the anticipated resistance, but there was some shooting and at least one casualty: an eleven year old boy was shot, in the crossfire, by the Afghan National Army.

During this operation we realised we were working in an intelligence vacuum. We had been told to aim for the District Centre, which was the seat of local government, but we didn't know where it was or even the name of the District Chief, who was politically the man in charge. However, we eventually found it and my unit (of six Afghan National Army and three British colleagues) established it as a "platoon house". A day later, a British platoon joined us and we started to patrol the town. Over the next few days of patrolling when we spoke to local people the first question they asked us was, "What are you doing here?", followed by, "Will you eradicate the Poppy?" We replied that we were here to support the Government, bring development, and provide an alternative to poppy. To this they asked more difficult questions, such as "What is development?" and "What is your alternative to poppy?"

Frankly, we had no answers, at least nothing other than rather bland assurances of good intent. We realised that while it had looked excellent on paper our "Comprehensive Approach" amounted to nothing in practical terms and at this point was fatally unbalanced. The few Department for International Development (DfID) and Foreign Office personnel that were in Helmand were stuck in our Headquarters at Lashkar Gah. In effect, we had occupied Sangin as a

purely military force, had killed an eleven year old boy in doing so and had nothing concrete to offer as a means of placating the local population and winning hearts and minds. Increasingly, as we patrolled the town, we began to feel like a rather large target. Quite simply our presence was seen as a threat to the economic life of the district, which was of course poppy.

Our naiveté is now shocking. How we thought that dozens of foreign soldiers patrolling in full combat kit could be seen by the local population as anything other than an appalling interference and an occupation is now baffling. Perhaps unsurprisingly, Sangin was not peaceful for very long. Shortly after our occupation of the district centre, a British patrol was attacked near the district centre, the first British soldier was killed and the town exploded into violence, as did other towns in Northern Helmand which had been occupied by British troops. The Sangin district centre was besieged and has since seen some of the fiercest fighting that the British Army has experienced since the Korean War. By the end of the summer, troops in that region had expended a million rounds. Now more than 140 British troops have been killed and many scores of Afghan civilians have died in the crossfire.

The decision to scatter these small groups of soldiers across the north of Helmand, in isolation, in an intelligence vacuum and with complete disregard for the most basic tenets of our own counter-insurgency doctrine was, quite simply, a gross military blunder. Its exact provenance is uncertain, but it was probably the result of political pressure from Kabul to "get going with things", requests from the Provincial Governor who was keen to extend his authority, and an impatient over-confidence within the British military command. That aside, the most worrying aspect of the fall-out has been the collateral death of civilians. Over-exposed and often out-gunned on the ground, reliance is made by British troops on close air support in the form of attack helicopters, fighter jets and artillery. Sudden, overwhelming firepower is their primary means of survival. But these weapons are not the surgical tools best used by the counter-insurgent; they are blunt-edged, indiscriminate and inevitably kill civilians.

After the event, the violent reaction to our occupation of towns across northern Helmand was described by the command element of 16 Air Assault Brigade (AAB) as "drawing out the Taliban"; facing them down in a clash of arms, which would create the space for us to get on with development (i.e., the "Comprehensive Approach"). War-fighting operations were often described as "creating the conditions to allow development"; but of course, this is illogical nonsense. Violence begets violence, as hordes of new local recruits, revenge-hungry after civilian deaths from British firepower, are drawn to the Taliban cause. As Pashtuns, the inhabitants of Helmand hold *Badal*, the pursuit of revenge, as one of the central concepts of their social code - the *Pashtunwal* - which is adhered to with a ferocious devotion. So we were a gift to our enemy. Contrary to every tenet of counter-insurgency, we gave the population every reason to hate us. With our unthinking but well-meaning clumsiness we *generated* a conflict; and tragically, today we are perceived in Helmand as no better than the Russians before us.

When 16 Air Assault Brigade was replaced by the incoming brigade in October 2006, the "Platoon House" strategy was followed by a "Manoeuvre Strike Group" approach (again, "kinetic" war-fighting operations) and again this was followed by similar military approaches designed to deal a "fatal blow" to the enemy. So in essence, this war-fighting aspect of the campaign in Helmand remains unchanged, but there is now a growing realisation in the military that the conflict is unwinnable in purely military terms. In October last year (2008), Brigadier

Mark Carleton Smith – then the UK's commander in Helmand – declared, "We are not going to win this war," and added that we should not expect a "decisive military victory" in Afghanistan.

Unsurprisingly, the aspects of the "Comprehensive Approach" which failed to materialise in 2006 have since then, because of the violence, struggled to make any real impact. The Provincial Reconstruction Team (PRT) which comprises the DfID, the Foreign Office and the new cross-department "Stabilisation Unit" are, in concert with the Army, carrying out courageous - but inevitably limited - work from their base in Lashkar Gah. The basis of DfID's stabilisation programme is the provision of clean water, irrigation and hard-surfaced roads. These activities are complemented by the provision of humanitarian aid. £46 million has been committed towards these reconstructive efforts between 2006 and 2009 – with £23.6 million allocated for 2008–09.

In terms of nurturing long term development, DfID helps to fund micro-finance loans to encourage small business enterprises and has established locally elected community development councils (CDCs) designed to allow ordinary Afghans to decide their own development priorities and bid for the funds to achieve them. CDCs in the provincial capital Lashkar Gah have, according to DfID, been responsible for bringing cleaner water and better sanitation to approximately 1,500 families.

In terms of counter-narcotics, an alternative to poppy cultivation has been encouraged. In autumn last year, around Lashkar Gah, £2 million was channelled into a Food Zones programme run by the Provincial Governor, Mangal, allowing wheat seed, fertiliser and expert advice to be distributed to some 32,000 farmers in an effort to encourage them to turn away from poppy cultivation. Despite this, of course, poppy has thrived since 2006 and has seen record harvests. Afghanistan produces around 90% of the world's opium and Helmand is now responsible for 40% of that figure. 2008 did see a 6% national decrease in production, but this a result probably of bad weather and increasingly attractive wheat prices rather than counter-narcotics.

Sadly, nothing which the Provincial Reconstruction Team can do can resolve the central contradiction of the British campaign in Helmand, which is that fighting towards development is a self-defeating exercise. The developmental, hearts-and-minds line of operation is made hopelessly irrelevant by the ongoing fighting and consequent civilian deaths. According to the UN, in 2008 2,118 civilians were killed In Afghanistan as a whole, with NATO troops responsible for 39% of those deaths, mostly in air strikes. In Helmand it is not possible to specify correctly the numbers of civilians killed by British or NATO troops but the total figure since 2006 is now definitely into the hundreds. And, of course, for a "Hearts and Minds" campaign to have killed scores of civilians is an appalling and irreversible blunder. But such deaths are tragically common, and occur every couple of months: most recently In September last year a British soldier shot and killed a civilian on a motorbike at a checkpoint in the Sangin district and in October, 18 civilians were killed by an air strike in the Nad Ali district at the very centre of Helmand.

All of this begs the question "What next"? What do we do now? Firstly, we need to be realistic and clear about what we're trying to achieve. Probably the best we can hope for in Helmand is a de-escalation of violence and slow progress in development, governance and counter-narcotics measured over a period of decades, not months or years. A Western democracy should *not* be

our model. Such realism is increasingly accepted in the Military. In November last year Brigadier Gordon Messenger, the current UK Commander of the Helmand Task Force, said a situation that is "good enough" should be what we look for; not something recognisable as a democracy by Western European standards. "It's not second best," he said, "it's realistic."

How then might something realistic be achieved? All our effort and resources should now go into rebuilding the Afghan security forces and provincial government and enabling them, not us, to create the conditions for development and counter-narcotics. Our military effort should therefore be in favour of special forces, development experts and advisors. Our conventional military presence should, as a matter of urgency, be replaced by Afghan National Army mentored by our special forces and training teams. Quite simply, the moment for an occupational-style "war among the people" is over in Helmand.

Some might argue that exactly the reverse approach is required: that we must surge and create a "security window" and indeed 5,000 US troops are now headed for Helmand to act in support of British troops. The British Army however, exhausted by years of counter-insurgency warfare on two fronts, is totally incapable of any significant surge. And even if it could surge, it *should not*. There are crucial differences between Helmand and Iraq: Helmand is vast, rural, mountainous and utterly beyond central governmental control; the challenge is one of state-building, from the most basic foundations upwards, not one of creating a security window for quick impact development projects. More troops will mean more violence and more civilian casualties. We must facilitate, advise, train and fund the people of Helmand. But the task of state-building will take a generation and the people of Helmand must do it themselves.

In addition to this, it is time for negotiation. Firstly with Pakistan about the Federally-Administered Tribal Areas (FATA) – that's the Pashtun Belt which sweeps down across the South-West along the border between Pakistan and Afghanistan - of course not really a border! The Pakistanis need to tackle the Taliban insurgency with a development-led approach which has the improvement of local lives at its heart. Poverty and contempt for the Pakistani government have fuelled the growth of Islamic extremism in the FATA.

Secondly in terms of negotiation, it is now time to talk to the opposition and try to co-opt those on the periphery of the Taliban. The British Ambassador Sherard Cowper-Coles said at the end of last year something that would have been unthinkable in 2006: "It is time to signal to those not linked to al-Qaeda that there's a place for them in an Afghan political settlement…It is time to dismantle the insurgency by opening up a dialogue."

So in conclusion, we must understand the profound and irrevocable effect that our military intervention is having in Helmand Province. And to answer my own question, we have lost Hearts and Minds and it is too late to win them back. As the Pashtun proverb goes, "A Pashtun waited a hundred years for revenge, and was pleased with such quick work."

7

General Discussion

PD: Paddy Docherty
JN: John Nagl
LD: Leo Docherty

PD: I'm going to jump in and ask our two speakers the first question, which really follows on from what Leo has just said about the dangers of increasing the commitment of ground forces.

Q1. *This week,* [16-22 February 2009] *as I'm sure everybody knows, the White House announced a new commitment of 17,000 soldiers and marines to Afghanistan. So I would like to ask both the speakers whether you expect that to improve things, or to make it worse?*

JN: As I mentioned in my talk, the total number of troops required to secure Afghanistan is closer to 600,000 than it is to the 200,000 we have now. The additional 17,000 troops that president Obama announced the deployment of this week are obviously but a drop in the bucket. It's going to be a long hard slog: I think casualty figures are going to increase in 2009 (among American forces, certainly); I think just as happened in Iraq in 2007, casualties increased steadily as surge units were deployed, as we moved in to population centres which we, quite frankly, ceded to the enemy. There are large areas of Afghanistan which are currently bereft of coalition forces, and of Afghan forces, and as a result the Taleban effectively control them. Clearing those areas out will be a long-term effort, and it will take casualties. The essence of military success in a counter-insurgency campaign, overall, comes from *clearing*, *holding* and *building*: you *clear* enemy forces out of an area, you *hold* what you've cleared, generally with local security forces, and within that security bubble you *build* and create oil-spots of security that spread over time, slowly, slowly. In Afghanistan we have not had sufficient forces to hold, and so we have cleared and left. 'Sweep and clear,' it's called. And the troops call it 'mowing the lawn', 'cutting the grass', because a month later, two months later, three months later you have to come and clear again; unfortunately when you come back to clear for the second time or the third time, the brave Afghans you worked with, the ones who supported you, the ones who provided you with intelligence, tend not to be there anymore. So sweeping and clearing is not an effective counter-insurgency strategy. So my estimate is that the strategic reviews being conducted are going to result in a vast increase in resources to go to the Afghan National Army, which are the right forces to hold. I believe that an additional brigade at least of American forces, 5,000 plus, will be committed simply to advise the Afghan military later this year. That will more than double the number of advisors to the Afghan military. And we will start an intensive effort to build the bigger Afghan national army that we should have started building in 2002. In other words, you are not going to see 2009 being the beginning of the end, but it may be the end of the beginning and the start of a new phase of what I hope is going to be a smarter and more effective counter-insurgency campaign. I wish I could be more cheerful!

LD: Following on from what Dr. Nagl has said, I think the most important thing is the method. Obviously, I've just been arguing against a surge because of the natural friction which inevitably

occurs when conventional troops are, in a very high-profile manner, charging around, for example, Helmand province. But of course, if additional troops are being used to make a surge of effort in terms of training and adding capacity either to the Afghan National Army or the arms of government on the ground, then that is positive. But what I don't think should happen is an increased conventional presence throughout provinces as a whole, because I think that is counter-productive.

Q2. Robert Williams [BNC undergraduate]: *Someone said that a better phrase for the War on Terror would be a global form of counter-insurgency, and I was just wondering how the panel would comment on Israel's ongoing efforts at counter-insurgency against the Palestinians, and the invasion of Gaza. I was wondering whether they think that was successful?*

JN: I was actually in Jerusalem, in Tel Aviv, in December, giving some talks on counter-insurgency to the Israeli government: Gaza was, I think, a tactical palliative to a strategic problem. I don't think it had particularly effective long-term results. The Israeli government is to a certain extent, practising the 'clear' part of counter insurgency – essentially Gaza was a sweep-and-clear; it was not a clear, hold and build. The better model for counter-insurgency, I believe, in Israel, is actually happening on the other front, on the West Bank, where an American General Officer, Easton, is training Palestinian security forces. And the long-term answer in Israel, as in Afghanistan, has to be the people themselves providing security for their own country. We have made some efforts in that direction; I believe those should be built upon and expanded. I would not view Gaza as a model for an effective counter-insurgency operation.

LD: No, neither would I. It's interesting, when you're serving abroad, either in Afghanistan or Iraq, the powerful anger that people feel about the Arab-Israeli conflict, and they do regard it very much as the bleeding wound of the Middle East. So as Dr. Nagl referred to about CNN, earlier on, the images of Palestinian civilians killed in Gaza and elsewhere, beamed around the world on CNN, are losing the hearts-and-minds battle for us, actually. So, it's a key component of the global War on Terrorism, and we're definitely not getting that bit right; and until it's resolved in a more joined-up way, it's always going to be losing ground for us.

Q3. Michael Pike [BNC old member, former diplomat]: *One of the things I was interested in when you were talking about both Iraq and Afghanistan is that you didn't mention the police in anything you said; and yet the lesson in Malaya was (in so far as there is one single lesson) that the Malayan colonial police were actually the basis of the defeat of the MCP. One would like to hear that the United States and ourselves are putting much greater effort into creating first-class police forces – I know how difficult it would be – but it seems to be the absolute essential basis of any future Afghanistan, in many was as important as creating a good Afghan National Army.*

JN: Yes, that's a fair criticism. In partial defence I do talk about that point in my dissertation – I certainly wouldn't have passed Oxford had I not! I did not talk about the police in my talk today for the simple reason that there is no consensus in my country on whose job it is to build an effective Police force. I was critical in my talk of my army's performance in training the Afghan National Army. I will tell you that our efforts to train the Afghan National Police have been far worse. It is not something that my army has accepted particularly willingly or with great gusto. It is, I believe, one of the great challenges of this global counter-insurgency campaign: building

security forces at the most basic level – and you're right, those should be police. The question of whether that is going to remain a military responsibility or become a Department of State responsibility is an interesting one. That is a hot potato that nobody wants to hold on to.

LD: If I may jump in there and ask you: in Afghanistan, I think surely the responsibility lay with the Germans after the Bonn Agreement...

JN: It did initially. That did not go well, to be as diplomatic about it as I can. So the international community lacks the ability to create, build, train, equip effective police forces, which are the front lines of security throughout the world, and in any counter-insurgency campaign. We have not covered ourselves with glory, either my country or as an international community, and if I could ask graduate students in the room who don't have their DPhil topic selected yet, that would be a wonderful subject on which to write. There are a number of failures and very few successes and the Malayan case is clearly one of the successes.

PD: Leo, did you have much experience of the police in Afghanistan?

LD: Yes, and it wasn't positive, in fact. In Helmand, the police were regarded, correctly, as largely corrupt and implicated in the production and smuggling of opium. And they were detested by the population, in fact. So we considered ourselves fairly lucky to be working with the Afghan National Army; the good thing about the Afghan National Army, in contradistinction from the police, is that because they were recruited nationally, you had men from other provinces working with us in Helmand, so I think that certainly made them much less corrupt. But of course we didn't work with the police in Helmand because it simply wasn't practicable, so we were in no way able to enhance their standing, increase their credibility or support them, because we simply didn't trust them. So yes, I think it is crucial we address that; but the bottom line is that on the ground you work with those people you trust, and that you *can* work with, and that's not the Afghan National Police. But I think obviously it's one to work on.

Q4. The reason for the fight against the Taleban is that the Taleban once gave al-Qaeda the possibility of having training camps. Now, the fight now against the Taleban is not really the fight against the real danger of terrorism, it is really just the regime which is very close to the terrorists. Question: *within the Taleban are there perhaps people you could talk to who are tired of the war, who don't like to continue this nonsense of war, and maybe there is an arrangement that the Taleban will be a more acceptable regime in the future?*

LD: On an individual basis, some rapprochement has been made, for example in Musa Qala a town in the north of Helmand province, a former Taleban commander, Mullah Salaam, is now in charge of the town. So I think increasingly we are willing to do deals with those on the periphery. As I quoted the British ambassador as saying: those on the periphery, if they are willing to come on board, are going to be taken on. And we have reached the stage where we are acknowledging the absolute necessity of that.

PD: John, is there not quite a difference with the American attitude towards that?

JN: No, I think that's fair. I draw a distinction between the 'capital-T Taleban' and the 'small-t taleban', so that the big-T Taleban are the committed ideologues – these are people who throw acid in the faces of girls for daring to go to school! I don't see Americans negotiating with those guys any time soon. Small t-taleban are driven largely by nationalism, some tribalism, in some cases economic insurgents like the Sunni insurgence I fought in Al-Anbar, those are the people whom we can negotiate with, and increasingly we are. And so when I think of an insurgency I think of an onion: there are many, many layers in an onion: the hard core are these committed ideologues, who have to be killed or captured, but as you get further away from the core you find people who are in many cases driven not by ideology but by economic self-interest. A friend of mine lost a soldier to an improvised explosive device. He did the math, did the social network analysis, figured out who the bad guy was, kicked in the door (the right door) at 2 o'clock in the morning, and brought him in, and asked the man why it was he had set the bomb. (He admitted that he had done so.) And he said, 'I did it because they gave me $200'. So we can negotiate with the ones who are doing this for $200. We can't negotiate with the ones who are throwing acid in the faces of girls.

Q5. Hilde Rapp: Thank you both very much. You've both mentioned, as have many serving generals who have spoken out about this, that the military success depends on 80% non-military, ie. civilian, engagement. And just to follow up on the issue about the police, we all know there has been severe criticism of the way the police have been chosen and trained, and issues of illiteracy have been very much an obstacle to their becoming effective. Question: *What kind of message do you think would be important to give to our politicians, both in Europe and in Afghanistan/Pakistan, that would get them really to put the political will and the money and the energy behind supporting the civilian part of the deal that would allow your soldiers to secure the space within which political solutions can be developed?*

LD: Well, I think probably the best way of informing them of the situation would be for them to actually spend some time in a forward operating base, probably in Sangin. They make various visits, which don't get much further than Kandahar or Lashkar Gah, but I think if John Hutton or David Miliband actually spent some time in FOB Robinson or FOB Inkerman in the Sangin Valley they'd probably get a thorough knowledge of the overwhelming pointlessness of exchanging a large number of munitions every day with the enemy. So really, I think it's a more detailed knowledge, and a courage to make bold decisions about what is actually so obviously true to anyone who's been there on the ground, but may not be popular politically.

JN: The challenge of reconstructing governance and reconstructing economic development in both Iraq and Afghanistan suffers from a deplorable lack of resources in my own country. I am fond of the observation that there are more members of military bands than there are foreign-service officers in my State Department. And while I am a huge fan of John Philip Sousa, and I always found a stirring march quite a morale booster in Al-Anbar in 2004, honestly I would give all of those faces and spaces and all of the money associated with them to the US Department of State to cause them to double – literally *double* – the number of diplomats and aid workers that they could provide; and then I'd just go with an iPod – it's wonderful technology these days! The good news is – and I've got a piece on this in the current *Wilson Quarterly* (which has been read by dozens of people!), called 'The Expeditionary Imperative', arguing that we need to build expeditionary capability and expeditionary culture and mindset, not just in our military but

also in our State Department, our Agency for International Development, the Department of Justice, the Department of Agriculture, the Federal Bureau of Investigation, all the agencies of my Government that have a role to play in post-conflict reconstruction or during-conflict reconstruction, as it is today. The good news is that Secretary of State Clinton has appointed someone to a position that has long been vacant, the Deputy Secretary of State for Resources. The State Department culture, as near as I can tell, rather than actually to talk to members of Congress about what they need to do their jobs more effectively, has been to whine in corners that they don't have the resources to do what they need to do. I believe that Secretary of State Clinton is going to push hard to increase the budget of the US State Department, which is frankly a rounding error for the Department of Defense; Secretary of Defense Gates has been clear on the need to devote more resources; Admiral Mullen, the Chairman of the Joint Chiefs of Staff has said that he would be willing to send dollars to the State Department if he could be sure that they were going to be applied to some of the programmes that he most needs, which is deployable foreign-service officers. So there is an increasing understanding in the executive branch and in the foreign policy world of this need, but that realisation has not sunk in to the Members of Congress yet, and that is actually one of the areas I'm working on.

PD: I think I read recently that the State Department budget is 6% of the Defence budget?

JN: That's probably the right order of magnitude, yes; it's about 1/20th.

Q6. Derek Hockaday [Fellow, BNC]: *What are the motives of the US and UK governments for the Afghan campaign?* Please remember that a lot that's nasty and wrong about Afghanistan happens elsewhere.

JN: There has been a deplorable lack of clarity from my Government on what it is that we're trying to accomplish, and there have been some rather grand pronouncements about our objectives that have not been resourced appropriately to accomplish those objectives. I have argued in a recently published paper – the paper was called 'Tell me why we're there: American objectives in Afghanistan' – that there were two objectives, I thought, and only two: one is to prevent Afghanistan from again becoming a home base for terror; second is to prevent Afghanistan from further increasing instability in the region. In my eyes the central front of this global counter-insurgency campaign is not Afghanistan but is Pakistan. The professionals I know in this area are enormously concerned about Pakistan, a fragile democracy afflicted by two different insurgencies, and in possession of a substantial and not spectacularly secure nuclear arsenal. So what keeps my community up at night is Pakistan: there is no guarantee that if we succeed in Afghanistan, if we create an Afghanistan that is able to secure itself over the next five-ten years, (which I believe is a reasonable objective: I think a decade from now we could be in the position we're in in Iraq today, that is a country that is broadly-speaking able to provide its own security), there is no guarantee that if we in fact achieve that that Pakistan will be stable. There is, I think, a guarantee that if we do not succeed at achieving that minimal objective in Afghanistan then Pakistan *will* be unstable, and I'm willing to do an awful lot to prevent Pakistan from getting more unstable.

LD: I think I, like a lot of soldiers, both in Iraq and Afghanistan, had moments when I did say, 'What are we doing here?', and asked that question, but I think, despite the initial confusion, if

you asked most soldiers on the ground today in Helmand and elsewhere what they were doing, I think they'd probably say: we're here in support of the Government, to enable the Afghan people, or the Helmandi people, to develop themselves and to achieve a sustainable and peaceful future. The issue now is just about how to go about doing that, but I think they'd be pretty clear on that.

PD: Do you think they feel they have a sufficiently clear understanding of their overall goal?

LD: Well yes, I think we're getting it wrong, but the army would argue we're here to fight the whole thing to a stand-still, and allow the Comprehensive Approach, which was a pretty good piece of doctrine, to then kick in. But of course what I've been arguing today is that we've got it back-to-front. I think the overall intent is clear that the bottom line is: we are there to improve the lives of average people on the ground, because nothing breeds Islamic fundamentalism and extremism like poverty and deprivation. That's the bottom line.

Q7. Victoria Hutton [BNC old member] Mr Docherty, you spoke a lot about hearts and minds, but *the hearts and minds of the British people are fairly against war in Iraq and Afghanistan, and I wondered what had been the practical result of that as someone who has served out there; and if that result is detrimental, perhaps, to the feeling of soldiers on the ground, how could that be rectified?*

LD: Do you mean in terms of it not being popular here?

VH: Not being popular here, yes.

LD: Well I think we're all quite sensitive – I mean, we're not a bunch of thugs in the army...

JN: Speak for yourself!

LD: ... I think interestingly the army has an incredible capacity to accommodate contradiction. It's really quite willing to engage in an operation, and I speak to individuals, my own friends, who are still engaged in these theatres, and you discuss it and conclude that, Crikey, what we're doing, it's really pointless, isn't it, in terms of the whole war-fighting side of the operation; and yet they're perfectly happy to crack on because it's their job. So I think in terms of individual people and their morale, I don't think they actually care that it's represented in a truthful manner in the British press, they simply don't mind – they're there because they've joined the army to have an adventure, preferably overseas, and that's what they're doing, they're 'cracking on' as they would probably say.

PD: Leo, did you have any sense of how it was being perceived at home when you were in Helmand?

LD: You get the papers, and you're aware of it, you really are. But I think the most important thing is the morale of those around you. And clearly people are sensitive to what they read in the newspapers, but generally it's not an issue: your loyalty to your platoon and to your battalion and the excitement or otherwise of what you're doing is the prime emotional factor.

PD: John, what about the popular perception in the States?

JN: I think my country frankly squandered a great deal of international good-will after the September 11 attacks. I think we failed to explain to our own people and to the world what we were trying to accomplish, particularly in Afghanistan. And I believe that international support for Afghanistan suffered as a result. President Obama campaigned quite openly on the promise that he would devote more resources to Afghanistan, and that he would draw down forces from Iraq. He has in fact already taken steps to deliver on his promises. I believe that his primary foreign policy challenge over the course of 2009 is going to be finding a balance between drawing down in Iraq while maintaining stability there through a year in which we've got three sets of elections (one down two to go). The first one went far better than could have been expected, lots and lots of very promising signs in Iraq, I'm enormously heartened by what I hear and see. I was there in August, and literally couldn't believe my eyes: the progress that had been made. But still, we're going to be drawing down from Iraq over the next several years, we're going to be putting more resources into Afghanistan, and President Obama has been clear that he intends to accomplish those base objectives in Afghanistan that I think are the ones I just mentioned, that is an Afghanistan that is not a safe haven for terror, that does not destabilise the region, that is able to govern itself and provide security for itself with some basic level of human rights. I believe that he is committed to that goal, that he will remain committed to that goal, that my nation will increasingly commit itself to that goal, as we have a president who I hope talks to the American people more often and more clearly about its foreign policy objectives and what we're trying to accomplish and why. And I believe that we are going to ask our international friends for more help in that effort. And frankly I think it's going to be hard to say no.

Q8. Roger Massey [BNC contemporary of Prof. Bob O'Neill]: I was a child of the Raj, who grew up speaking a few words of Pashtu, I believe! I'm not accepting any responsibility because of that, but from my recent reading an earlier servant of the Raj has a lot to answer for: I am of course talking about Sir Mortimer Durand, who drew the line between the British Raj and the then Kingdom of Afghanistan. Question: *I would just like to hear what the panel have to say about the responsibility of the Raj, and perhaps what they think Tanvir Khan might have said had he been here.*

PD: A very interesting question: Leo, as a student of Indian history, what is your view?

LD: Well, I know what you mean about learning Pashtu and its connections with the Raj; in fact, the only resources that were printed to enable us to study Pashtu in 2006 had been published in 1880, but we made very good use of them. You're absolutely right, it is a case of assessing what's going on in Pashtun areas, and of course the Durand Line is a figment of our imagination. The Pashtuns are, if you like, a nation without a state, and that's why I mention that it's absolutely crucial that Pakistan is dealing with the growing insurgency in the Federally Administered Tribal Areas in a similar manner to our approach in Afghanistan, which is that it should be development-led, because for too long the Pashtun areas in Pakistan have been totally neglected and allowed to foment. And as I said, it's poverty and deprivation that breeds

Islamic fundamentalism. So we absolutely have to deal with the Pakistanis and deal with Pashtun belt as a whole.

PD: I think you neatly avoided according responsibility – I mean, are we taking the blame?

LD: Of course it's not our fault; but we were there at the time.

JN: I would take a rather different tack, Roger, and I think it's quite good of you to point out that in fact the United Kingdom did not always fulfil all of its responsibilities in its administration of its colonies in various countries, resulting in some cases in some quite righteous indignation from the colonials, which in some cases rebounded not always to Britain's interests...The Durand Line, of course, was drawn as part of the Great Game between Russia and India, and not necessarily the line that one would draw today: as Leo has said, the photos of the Durand Line, the photos of the border between Afghanistan and Pakistan which you've seen , and my own experience of them, make it an absolutely ludicrous place to draw a line. The broader problem that Leo has spoken of well, of Pakistan and the Federally Administered Tribal Areas, a horrible suicide bombing today in the FATA with at least 30 dead, leading to riots there, all point to this problem of Pashtun nationalism, which is a challenge that I think we're going to deal with for decades.

Q9. PD: Just a follow-up question on this: we were obviously talking about Pakistan. Given the cross-border nature of the threat, *would you say in broad terms you are more worried about Afghanistan or Pakistan, given some of the issues to do with Pakistan you alluded to earlier?*

JN: I'm far more concerned about Pakistan. My friend and colleague David Sanger has recently written a book called *The Inheritance*, which is a best-seller in my country. It essentially says - leaving aside Iraq - what are the other disasters that President Obama's administration is going to have to deal with around the globe? It's a very cheery book! One of the things David, who writes for the *New York Times*, got to do was visit some of the Pakistani nuclear weapons storage facilities. If you're having problems sleeping, I wouldn't encourage reading his description of those facilities; if you don't think that it's worth trying to stabilise Afghanistan and Pakistan, I would strongly encourage you to read those parts of that particular book. Pakistan is ground zero, and the stakes couldn't be more serious.

LD: Well, I would agree with that.

Q10. Eric Albone [BNC old member]: The business of the aims: I think John said to start with, aims should be realistic, and talked about slow progress over decades and Western democracy not being a model. Another aim, which was mentioned just now, is to improve the average life of a person on the ground (as it were) in Afghanistan. Whereas the initiative for the change must come from, I would think, the people in Afghanistan, *how far do you think that outside forces should actually be involved in Afghanistan politics, and actually changing what happens there? You've got the situation of apparently lots of corruption – is it the objective to get rid of that, or is that something they should do? And you've got the business of the lack of control, if you like, from Kabul over the country: let's think about realistic objectives – how far is political intervention into what the Afghans do acceptable?*

LD: I think we've absolutely got to mentor and improve the situation in terms of what you mention regarding corruption, but I think in terms of actually affecting it, we need to have a bottom-up approach, so it's all about making the Government accountable at a district level, then a provincial level, and then a national level. It's hopelessly unrealistic to imagine that we're going to be able to capacity-build the Afghan national Government to be able to run all its provinces without corruption and very efficiently in the short-term, so I would start at the absolute bottom. What it's all about – the key ground here – is giving Afghan people faith in their governance, and that starts at a local level from the head of the village to the members of the Shura at a district level, moving up to the members of the Government and the members of the Police and the Army at the provincial level. It's absolutely got to be bottom-up. That might beg the question of perhaps we should have ignored the central government to start with, because of course all our money has been channelled through the government in Kabul, a great deal of which has been embezzled in the last eight years. So there is an argument for running the whole thing on a kind of federalist scheme, but whatever you reckon, the bottom line is that it has to be slow, incremental agreement at a very local level: you've got to start bottom-up; you can't do it top-down.

JN: I absolutely agree with the importance of work from the bottom up, I also agree that a federal system might have been a better decision. That said, we have to go forward from where we are, and the good news in my eyes – and there is a little bit of good news – is that there are in fact national elections scheduled for later this summer in Afghanistan, and those national elections are exerting pressure on President Karzai, who will either have to dramatically improve his performance, his personal performance – he's derisively called the Mayor of Kabul, he rarely leaves his national capital - he's either going to have to do a whole lot better or he's not going to be the president of that country very soon. The Obama administration has not embraced president Karzai with open arms, I think it's fair to say: he and President Obama have not yet spoken by telephone, a huge change: President Bush had biweekly phone conversations with President Karzai. So I think there are some clear expressions of less than the warmest regard for his Government's performance to date. I assume that that message is getting through, as well as the polling figures he's receiving: he's currently polling about 7% in Afghanistan. The good news is that the Taleban is also only polling about 7%. International forces: the last numbers I saw were about 50% approval rating. So 50% isn't great, but it's seven times better than the president or the enemy. That tends to win! I think that either Karzai is going to improve his performance or there will be a new president of Afghanistan by September, and the new president of Afghanistan will have his work cut out for him or her. But I think democracy is in fact going to do its job here over the course of the next six months, in improving Government performance one way or another.

Q11. *Do you think that there is a connection between Somalia and Afghanistan and Iraq?*

PD: John – given the American experience in Somalia back in the old days...?

JN: Yes! The United States, of course, has struggled to help in Somalia; I have friends who have recently deployed to that region. The connections are real, I think: the instability is unhelpful, and the humanitarian tragedy continues. So for both reasons of national interest and for

international humanitarian concerns, I believe there is more we could do and should do. Frankly, to use a wonderful Americanism, we're running out of Schlitz (Schlitz is a really bad American beer). The American military, the American army in particular, is not big enough to continue to provide security in Iraq, to continue to provide the security that is needed in Afghanistan, and to meet the demands for building, and helping to build, host-nation security forces in Somalia and around the globe. I have argued for a bigger US Army as well as a bigger State Department, as well as a re-created US Information Agency – I'm sort of wacko that way, in believing that my country has both the ability and the responsibility to help set the conditions in which democracy and development can happen around the globe. I am hopeful that with my friends now in positions of power in the State Department and the Department of Defense that we will move in that direction. But there is a whole lot of work still to be done.

LD: If you just let us get Helmand cracked, we'll move on to Somalia. But it may be decades; don't hold your breath.

Q12. PD: Well I want to wrap up by asking both of our speakers just one very short question, and I'm springing this on them slightly. But if they could keep their answers very brief given the time that we have, and also because we want concision, because we want to leave here with some understanding of what we can do to try and make things better. *If you were granted God-like powers to effect one big change in how we – as in the outside world – were doing things in Afghanistan, what would it be?*

JN: The Afghan National Army in-state was doubled last year by Secretary of Defense Gates from 70,000 to 135,000; I would double it again to 250,000, build an Afghan National Army of 250,000, and I would fully man it with American advisors and trainers.

LD: I would wind the clock back to September 12th 2001, and ensure that we didn't miss the golden opportunity that we had in the years immediately following that date to effect positive change.

JN: Mine was hard, but that's harder!

Section 2: Introduction

Llewelyn Morgan:

It is striking, regarding those issues with which we are concerned how, certainly as a country, perhaps as a Western world involved in Iraq and Afghanistan, the focus is closing in upon Afghanistan at all times. So obviously, for our country, for our country's military involvement, the country that we are in, Afghanistan has become the centre and so I think I can justify the closer focus we are going to see in this session.

The people before you for this panel discussion - with the very significant exception of the person who is talking at the moment - are all people who have, in various ways, been involved in the issues that we're concerned with today, mainly in Afghanistan. So what I had in mind when collecting them together was, in addition to a connection to Brasenose, their capacity to offer a novel and diverse set of perspectives on the topic of this session.

This section will be driven mainly by questions from the floor. But first, each member of our panel will explain the nature of their involvement: That seems to me as interesting as anything: to discover what they have been doing and why they have been doing it. With this question answered, each will present their perspectives: How they have experienced things, how they see things going, what directions they might suggest, what mistakes they may feel have been made. I haven't really narrowed this question down for any of them; it would be presumptuous of me to do so.

8

Panel Discussion

Panellists:

LM: Llewelyn Morgan (Chair)
JBM: John Bingham,
JBY: Joanna Buckley,
AM: Alan Macdonald,
GNC: George Noel Clarke,
ARG: Ana Rodriguez Garcia,
SVN: Suzan Varga Nagl

LM: I shall start off by asking our panel to talk about what their involvement is. So let us start with George Noel Clarke.

GNC: I spent the last three years in Afghanistan. I spent the first year in the East in the Pashtun areas where, among other things, I set up an office in Kunar Province. As some of you may know, the East is where Operation Enduring Freedom, the American counter-terror effort, is based. I then spent fifteen months in Helmand for the British Foreign and Commonwealth Office where I was doing political and governance work and I am now based in Kabul where I am responsible for counter-narcotics security work, predominantly in the Pashtun areas.

SVN: The first time John went to the Gulf I was still at Brasenose. The second time I found myself with a two-year-old little boy living in the middle of America in Kansas, down the road from a field of bison. We have just got - and it's a 'we' because the whole family is always involved in the military - we have just got out of the army. John was in for twenty years and we are adjusting to civilian life. He was a battalion commander and had two companies deployed. When we got there, they were already out there and dealing with stuff.

So when I say that I am pleased to be here again, I mean it. As John would say when he was wooing me, he said, 'Kid, stick with me and I'll take you places.' I certainly didn't think when I was a young thing matriculating that I would be here, seeing Brasenose in the full bloom of maturity.

AM: My name is Alan Macdonald. I am the Chief of Staff of the Mine Action Programme in Afghanistan. I first went to Kabul in 1995 before the arrival of the Taliban and then worked again in Afghanistan in 2003/2004 surveying all of the known minefields in the country. And I returned to Kabul in Afghanistan in September 2007. So I have a sort of fairly lengthy association with the country and the different regimes that have been in control.

ARG: My name is Ana Rodriguez Garcia. I am an art historian. My involvement with Afghanistan started in 2001 when I moved to Pakistan to study the illegal trade of antiquities from Afghanistan to Pakistan. I became involved with the Society for the Preservation of Afghanistan's Cultural Heritage and I moved into Kabul with the Society's headquarters in 2002 where I lived until August. Now I am studying at the University of Cambridge.

JBY: My name is Joanna Buckley. I first moved to work in Afghanistan in November 2005 when I worked with a non-governmental organisation called the Aga Khan Foundation based in Bamiyan Province which is in the centre of the country. After that I worked as a political advisor for eighteen months with the Office of the Special Representative for the EU and I currently work with the United Nations Assistance Mission in Afghanistan. I read PPE at Brasenose, so I am very pleased to be back here today with the College.

LM: George, do you have something to add?

GNC: Yes, I do. Thank you, Llewelyn. Llewelyn is my old don, so thank you very much for inviting me.

JBM: My name is John Bingham. I was at Brasenose from 1997 until 2000. Unlike most of the people sitting here, I haven't spent years living in Afghanistan to give you a perspective from the inside looking out. I am a journalist so my perspective is very much somebody from the outside looking in. I first went to Afghanistan in 2007 as an 'embed', which is a reporter who is literally embedded with a group of British forces, living where they live, eating what they eat, sleeping where they sleep and occasionally feeling the terror of things flying over your head as you are crawling through a ditch with them. A few months later I was asked to go back to Afghanistan in very mysterious circumstances. We were told we were going to be visiting a young officer, watching him as he got on in his posting. It turned out to be Prince Harry. Obviously his deployment was cut slightly short but we made a couple of visits out there to see Prince Harry. And all the acres of coverage of everything from his views on the food to what he thinks of the postal service and everything in between, you have largely me to blame for it.

LM: Thank you all very much indeed. Now to the perspectives, described at slightly greater length by each person and I will run through in the same order, I think. So: George.

GNC: I think the first thing to say is something rather obvious: the perspective that we may all get in this country is very different from the perspective that we get in Kabul and I can tell you that the perspective that I have got in Kabul is very different from what I've seen on the ground. That is the first thing. To win this war will require a complete change of mentality. Now, before I offer you my own points of view, I think it would be better if I offer you some Afghan points of view, which have been told to me in the last three years. The first is from General Khodaidad who is a former paratrooper and a Brigade Commander for the Russian-backed communist regime and the current Minister for Counter-Narcotics. I quote: 'To fight in the South of Afghanistan you have to know the politics of every single individual village. You have to treat every village as a separate entity and know the personalities with influence there. You have to know how that village connects to the provincial centre. Every village is a separate military campaign.'

I would then like to read a second quote, also from an Afghan: 'You are going to lose this war and the main reason is because you do not know the country. How can you learn the country when you change all your soldiers every six months? Look at the Pakistani ISI - they have had the same people here for the past twenty years.'

Now, the third is not from an Afghan; it's a declassified KGB document: 'Little remains of the friendly feelings in Afghanistan towards the Soviet Union which existed for decades. A great many people have died and not all of them were bandits. Not one problem has been solved to the peasantry's advantage. The government bureaucracy is functioning poorly. Our advisors' aid is ineffective. President Najibullah complains of the narrow-minded tutelage of our advisors. I won't discuss right now whether we did the right thing by going in there. But we did go in there absolutely without knowing the psychology of the people and the real state of affairs in the country. That is a fact. And everything that we have done, and are doing, in Afghanistan is incompatible with the moral character of our country.'

Now, I don't think that it is as bad as that, but it is pretty bad. That was spoken by Eduard Shevardnadze, the then Foreign Minister following his appointment by the Politburo as Chair of the Afghanistan Commission, in an oral report to the Politburo in January 1987, criticising the distortion of information passed to Moscow.

If I may, I would just like to say a few things extra, concerning what is happening now and what I have learnt from three years on the ground. The first thing is perception. Here with Western eyes we see distinct categories of groups operating in Afghanistan: we see the Taliban as an organised unit, we see Al Qaeda, we see criminals and we see narcotics traffickers as distinct categories in themselves. And then on the other hand we have the Government. And the assumption that this leads us to is the Taliban, Al Qaeda, the criminals and the narcos are the baddies. So we send the military to go off and deal with them. But the Government are the good guys and therefore we support them.

Well, let me tell you that that is not the case. From dealing with Government figures, I can tell you that they have complex links to the insurgency. There are people inside Government who are linked to the Taliban. In Helmand many of the Government figures have been appointed precisely because of their interests in the narcotics business. Equally there are people in the Taliban who don't want to be part of the Taliban, who are essentially pro-government but for one reason or another they are by their circumstances forced to fight. So you will see then the ridiculousness of a counter-insurgency strategy which depends on bashing the bad guy and supporting the Government. It is not as simple as that.

Now, I would like to thank Dr. Nagl for his book, which is a very good contribution to counter-insurgency thought. But it depends on the one idea, which is a very important idea, which is that the key to counter-insurgency is governance. Getting an Afghan government to do the work for you, to get its credibility. How do you get credibility for that government when the government itself are implicated in the insurgency? And this is what many of us are not prepared to admit and it is only just coming out now. The fact of the matter is that many of these people for one reason or another are creating instability, whether it is to allow their own narcotics trafficking to go on or whether it is to have one more other grip on power. There are people in the administration who are undermining it from within on behalf of the Taliban. That is what we

have to deal with. So even before we make a military effort, even before we do development, we have to look at the nature of the Government we are trying to support. And I can tell you many stories about the moral dilemmas that that raises.

I can also say that we don't necessarily understand the insurgency; and if I may say, even from the first session, there are lots of assumptions being made and I would just like to pick up on a couple of points that were made. One was of course acid in the faces of the girls. You may have remembered this story, that there was acid thrown in the faces of some girls in Kandahar and it was: 'These people you can't negotiate with, because they are fundamentalist.' Well, there is a good reason for thinking that that action was fundamentalist-based: it was designed to have all the appearances of a Hekmatyar (who is a former commander) effort on an Islamist agenda to separate men and women. The truth is that these were four boys from Pakistan who were paid a sum of money by the Pakistani Taliban and I know that because I interviewed the CID commander who caught them three weeks ago. So I am just saying: that is an assumption. We have to probe underneath the surface.

The other one of course is that poverty breeds fundamentalism. Well, I think certainly that is one factor but I refer to a recent study by the Pakistan expert Christine Fair on suicide bombers and she noted that in fact many suicide bombers, a disproportionate amount more than commonly thought, were actually from fairly well-to-do, prosperous middle class families in Pakistan. So the mere point that I am making is that we can't use conventional thought, we can't make the assumptions that we have been making. We have to probe under the surface if we really want to understand the nature of the insurgency that we are dealing with.

I think, just to give you another instance of this before I wrap up, just to sum this up, a week ago a provincial director of a department in Helmand, Abdul Sattar Mazhari, Director of Refugees and Repatriation, now we think of him as a government official - he was beheaded in his house by people who came in inviting themselves as guests. In the media were lots of stories, one was that it was a Taliban assassination because it had all the hallmarks of a Taliban assassination. The other view was that this was some local dispute: that the man guilty was in fact a former employee who had been fired. The truth was that this was a local dispute over a boy and the other party who did the murder was not a Taliban commander himself, he was vaguely tribally aligned with the Taliban and with members in the Taliban. But what happened was that he went in, he murdered Abdul Sattar Mazhari out of tribal revenge and to get hold of the boy, and then he did a deal with the Taliban for protection money. He gave all the arms and the money and the loot from the house to the Taliban. In so doing he got the tribal protection of the Taliban from any tribal reprisal. Now the reason why I mention the story is just once again to illustrate to you that the insurgency is not always what it seems. There are many, many complex reasons behind it. And it is one thing to say that there is a broad schematic: We need to have a governance effort, we need to have a military effort here, we need to have development effort; but unless we understand the nature of the insurgency itself, which is far more complicated than many people would like to give it credence, we will not defeat it. Thank you.

SVN: I have been asked to step back into the family zone and talk about the home front and deployment and, what I think is important: the aftermath. Saying the word 'deployment' makes it sound very simple, like it is a box that you step in and out of. But it actually has three distinct phases, starting with notification and preparation, when the military member is already

removed from the family by long work hours on the job and his mind is quite elsewhere already then.

It has not been since Vietnam that the military in the States has had to deal with such length and frequency of deployment. At least twelve months, sometimes longer. Sometimes the news comes down just as you think they are coming home that they are going to stay a month, two, three months longer. And for some people it's their fourth deployment. The stress on a military family is exacerbated by the frequency also of moves, on average every three years, which uproots the whole family from supportive friends and surroundings grown familiar. As one wife succinctly put it, 'The army changes everything, it changes where you live, it changes the way you look at the news.' Families of enlisted ranks contend with additional problems due to the low wages and poor living conditions, while the improficiency of coping abilities due to their youth, lack of experience and education will compound many problems and increase substance abuse, spousal abuse and depression.

The army is very aware that such family problems impact directly on the job performance of the military service member and has mandated that every company commander put in place a family-readiness or support group. These are run by volunteers. The volunteers are the officers' wives and some of the senior enlisted wives. They maintain chains of contact, publish newsletters, organise family events and fundraising for those events. They will jump in the breach when a baby is born and the service member is away and can't get back, if a wife or a child falls seriously ill or emergency childcare is needed, or if the word comes that the service member has been injured or killed in action. These wives, the volunteers, are under additional demands on their time, energy and emotional resources while they too are trying to maintain the normalcy of their own families. The repeated exposure to the stresses of others can result in what is abruptly termed 'burn-out'. This is too neatly put because how do you deal with wives who might resent you because of your husband's rank? Or the wife of your husband's commander, who may be too controlling, or totally unavailable to give advice and steerage? Or your peers, who may find that making disagreements into personal issues is a way for them to let off stream? Or as one wife found herself doing, going to seventy-nine memorial services in one year? And she found that as she attended them, she said, 'Nothing you do is right. If you cry you're labelled an attention seeker. If you don't, you're a cold bitch.'

To counteract the pressures and loneliness, the Army Wives Forum website counsels, 'Be active in forums. Grow as a person while he is away. Cherish the moment you are in.' And perhaps a little more pragmatically, 'Count down by Sundays or trash days even, not every day. Fifty-six is a much smaller number that three-hundred-and-sixty-five.' How do these women cope? Several girls I knew watched CNN's repeated twenty-minute news loop all day, every day. My left-hand neighbour started giving parties several times a week that ran to two, three o'clock in the morning to non-deployed personnel. The girl on my right-hand side bought lots of bird feeders and was shortly hospitalised with a severe nervous breakdown. The girl across the way planted flowers everywhere frenziedly and tied yellow ribbons round the trees; and within a week the flowers wilted, her blinds were drawn and she refused to answer the door.

These are women who also have to take care, most of the time, of children. And this is perhaps one of the most pressing problems - how do you explain to the children the absence of the other parent? How do you explain the loss of the other parent? Fifty percent of all the children

are under the age of five. They are susceptible to separation anxiety, depression and anger. A few wives got together to try and address this problem and formed Operation Give-A-Hug and came up with the idea of Daddy Dolls. Over 75,000 Daddy Dolls have been sent out for children to hug in bed, talk to during the day and vent their anger on. Older children too are affected. They are more media aware. They have much the same problems, in that they will slip into self-harming, substance abuse and many other risky forms of behaviour. School performance will suffer and with it the prospects for further education, job opportunities and consequently the health of their own families: the mental and financial health of families in future years. So much for deployment itself.

As for the third stage, the military health system website matter-of-factly states that upon the return of the military service member, having problems is normal. It also notes that only half, it reckons, seek help; and that thirty-six percent of those who seek help are not only depressed or have post-traumatic stress disorder (PTSD) but are depressed *and* suffer from PTSD. The health care system struggles to respond to the needs that are a direct result of these long, frequent deployments, such as this co-morbidity of depression and PSTD, which increases the severity of depression while decreasing the efficacy of the treatment and prognosis for long-term physical and mental health. Such veterans maintain a greater risk of substance abuse, cardiovascular disease and suicide. The army itself reported, this January, alarm at the spike in the suicide rate. In 2008 it confirmed 128 suicides and thought that there were maybe fifteen that had gone under the radar. However, such numbers do not include suicides taking place 128 days after discharge, nor do they include non-deployed National Guard or reserve members. In the last two years the number of families seeking support after the suicide of a serving family member has risen by 300 percent. These are invisible wounds. To these are added the effects of physical injuries.

Now the irony of the Kevlar body armour is that, as it succeeds in reducing the fatalities, it creates survivors with injuries of hitherto unmet severity. The wounded and their families both suffer the effects of chronic pain, loss of sight and limb and traumatic brain injury. The home front turns into a battleground as shell-shocked families try to navigate over-burdened health care systems for compensation and therapeutic treatments. The extent and nature of the injuries renders some personnel not only unfit for further military service but for civilian jobs. The family suffers the consequences of the financial and emotional drain. The military casualty numbers neglect the extent of the cost of deployment, the human cost. Divorce rates are rising - the army itself counted 5,600 in 2001, 7,500 in 2003 and 10,477 in 2006. Disruption of family life impacts military members' performance and retention. This can be of national significance as we are trying to build armies up and make sure we have enough people to do the job.

The damage ripples beyond military boundaries, as society has to absorb the aftershock of homelessness and suicide of veterans and the depression and behavioural problems passed on to the children. The home front is a victim of battles that continue after the fight in foreign fields is done. As a serving veteran Lieutenant Colonel pointed out only yesterday, 'We do not know the real extent of the heartache yet.'

LM: Thank you very much, Susanne. Alan, can I turn to you?

AM: I think I would like to pose the question: should Britain engage in Afghanistan? And I would like to answer that by saying, yes it should. I work for a man called Dr. Haider Reza, who is the former Deputy Foreign Minister of Afghanistan and also a surgeon with Commander Massoud in the Mujahideen war against the Russians. And he describes his country as one with two broken legs.   And he says, 'Don't walk past us. Don't walk past us again because it has been done in the past.' He is a proud man and he doesn't like to have to ask for help but he believes that this is an opportunity that mustn't be squandered. Afghanistan can stand again on its two legs.

Do I think that we should be fighting a war in Afghanistan? No, I don't. I don't and never have believed that the deployment of soldiers creates the space for development. I think it is a fundamental misunderstanding and a fundamental problem in the Afghan context that is just going to drag us further into the mire. In the short term an American military surge may have set the conditions for an election to take place, but beyond that I don't see the military as creating the space for development. In fact they are a negative process.

I think we just need to re-evaluate what it is that we are doing. I think that one of the first things that we need to do is to get over our sense of fear. You would be absolutely horrified by the levels of funk in Kabul being displayed by your own Government and other people's Governments in fortresses, which they call embassies, behind massive concrete barriers and barbed-wire emplacements, with absolutely minimal contact with the Afghan people. It is quite extraordinary the number of people who are employed in the UK embassy in Kabul who, I suspect, have never ever been anywhere near an Afghan village, let alone really walked through the streets of Kabul. It is amazing. It really is amazing the fear that has gripped the international community, which somehow thinks that five million people in Kabul are the enemy when they are not. I don't believe the process is unwinnable, to use that word, I think that in the long-term we can help the Afghans to become a stable nation. But the way we are doing it now is quite extraordinary.

ARG: I would just like to explain the nature of my involvement so that you can understand my position better. I have been working as an adviser for the Ministry of Information and Culture from 2003 to 2005. I have been a lecturer at the University of Kabul, teaching History, Art and Literature. I had one hundred students and in my position as program co-ordinator of the Society for the Preservation of Afghanistan's Cultural Heritage, I have been travelling extensively throughout the country, trying to document monuments and archaeological sites. And I have come across a very dedicated civil service which suffers from an acute lack of qualified human resources, faulty recruitment procedures, corruption and salaries that are shamefully low.

I wonder why in 2002 we didn't engage more with these nation-building exercises, with giving this Government the means to succeed by themselves, with a bit of our help if requested. This is why I think we are missing a golden opportunity to lead the country to good governance. They need experts and we could provide help if requested. Another point is accountability. We are taxpayers in Europe, we want our money to be well spent in Afghanistan, we go to Afghanistan, we see that the money disappears. We should keep all these politicians accountable; and this is something that makes my students angry, the fact that this is a chance that Afghanistan is missing and the problems are not well addressed, despite the billions spent.

Another point to address is that the Afghan government really has to tackle the problem of corruption. I have found myself as a mediator between donors, international bodies and the communities willing to restore a monument or protect a site from looting. I have seen myself many times, under very difficult circumstance, trying to advocate the protection of a site that the community really engages with. I have been trying to convince donors to provide the money, but they were not interested; I have been trying to defend the politician's position and it has been pretty difficult.

There is a whole class of intellectuals at the University of Kabul at the Faculty of Social Science. They have now not received training for twenty-five years. There are historians, philosophers: they are eager to catch up with training; they are eager to contribute to their nation-building exercise. There have been very few projects supporting this intellectual class. Embarrassingly, one day I faced a European Ambassador who was floating some money for the Faculty and he said, 'Hah, they don't even have any intellectuals.' Excuse me! I have to start even with my own tribe, I mean with the Europeans. It has been really difficult. We cannot leave a society without intellectuals that have credibility. They have been requesting formal training for themselves since 2001 and we have let them down. They are a voice of wisdom and principle. I think that we should really engage with all layers of society. And who are we after all to exclude the Taliban who are a real part of Afghan society, from this nation-building process? I think that we should be very careful and very inclusive. After all, we are trying to impose democracy - and democracy is about inclusion.

LM: Thank you very much. Joanna?

JBY: I wanted to address the subject of today's talk by focusing specifically on the role of the international community in Afghanistan post-2001. With the rise of Islamic extremism, governments have grappled with the question of how to provide security for their citizens while facing the threat of international terrorism, and this dilemma has been central in shaping the role of the international community in Afghanistan. And to go back to one of the questions that was posed earlier, what are we actually doing there? I would answer that there are two mandates, basically, upon which the international community has been acting. When I say the international community, I mean the numerous multi-lateral and bi-lateral missions that are operating in the country at the moment, including the United Nations, the World Bank, the European Union and so on. So these mandates - I would say firstly that the international community is mandated to support the government of Afghanistan and the development of a democratic state, which respects the rule of law and human rights. At the same time Afghanistan is a key component in the so-called 'War on Terror'. National interests dictate that the goal of any intervention in Afghanistan is to ensure that the country is not used as a sanctuary for terrorists, from which to plan and conduct attacks.

Now, while theoretically it should have been possible to adopt a single strategy to pursue both these goals, in practice these two mandates have often led to conflicting policies, and the latter has frequently taken precedence. As a result, the intervention in Afghanistan post-2001 was based on certain assumptions that have proved to be wrong - although it is worth mentioning that there were key members of the international community who did make this point at the time. To repeat some of what George said earlier, one of these assumptions was that the collapse of the Taliban regime meant that the Taliban was no longer a threat and that the defeat

of Al Qaeda was an overriding priority, that nation-building (there is not time really to explain what that term means at this point) was neither desirable nor necessary in Afghanistan. And thirdly to come back to key counter-insurgency strategy, that justice and the rule of law are luxuries that are achieved only after the establishment of security and stability.

These are the assumptions that provided the framework within which the international community defined its strategy within Afghanistan. Driven primarily by US domestic political considerations, the international community adopted a very limited interpretation of what has been termed the 'light footprint'. The repercussions of this strategy are now well known and widely discussed but just to name a few: i) lack of attention to institution building of the government, specifically with respect to security institutions and the justice sector. And I would at this point mention the Afghan national police as absolutely key to this, and I have to say I disagree somewhat with Dr. Nagl on the attention to the Afghan national army, but maybe we can talk about that afterwards; ii) an inability to develop unified and co-ordinated approaches amongst the numerous actors in the international community, resulting in duplicative and counter-productive policies; iii) a failure to expand the military forces of the International Military Assistance Force (ISAF) beyond Kabul until 2003; and the adoption of restrictive national caveats by these forces. At the same time, a parallel - primarily US-led - military operation referred to as Operation Enduring Freedom was conducted under a separate command and control structure; iv) a reluctance to address the security situation in Afghanistan regionally, especially in relation to Pakistan; and v) most importantly in my opinion, a willingness to make deals with commanders and warlords who were perceived as supportive in the fight against Al Qaeda, while tolerating warlordism, corruption and links to the narcotics industry amongst government officials. As a consequence the international community failed to support moderate and democratic political forces in the country.

I think that this relationship that the international community has fostered with the Government remains the biggest challenge that it faces today. Afghan public disaffection with the Government is growing, fostered by corruption, a lack of services and civilian casualties from the Government, and from international military and insurgent activities. The international community's apparent indifference to the Government's use of power has significantly damaged its reputation as an objective and impartial actor in Afghanistan. Balancing issues of national sovereignty, in this case Afghanistan's, and upholding the mandates and principles of the international community is at the core of all debates on nation-building or state-building or whatever we should term it. But in Afghanistan terms such as 'Afghan ownership' or 'Afghanisation' were employed without clear definition and often based on considerations of pragmatism rather than principle.

The international community therefore reneged on its responsibility to hold the Government to account while failing to provide it with the tools that it needed to tackle the growing crisis in its country. As an example, the international community shied away from insisting on the implementation of appropriate vetting mechanisms for senior appointments, but at the same time did not provide the Government with the military backing it needed to tackle corrupt officials and commanders who had weapons at their disposal.

So just to conclude, it is easy for us to sit here and list the mistakes that have been made and the lessons that should be learnt, and in many respects the lessons that we are drawing from

the most recent intervention in Afghanistan could well have been learnt from previous engagements in the country. The real true test of whether or not the international community has learnt any lessons in Afghanistan is whether or not it can now utilise these to agree on a way forward. The new US administration has signalled its intention to have a strategic review of its policy in Afghanistan and to deploy additional troops. But the success of this will really depend on its ability to build consensus among the various actors of the international community. Not easy at the best of times, this is becoming increasingly difficult as several troop-contributing states, namely Canada and several European member-states, are facing mounting domestic political pressure to develop an exit strategy from Afghanistan, as it has been perceived domestically as a progressively protracted conflict.

JBM: On my first visit to Afghanistan I have to admit to a certain amount of naivety. I was sent out on an 'embed' with a platoon from what was the Worcestershire and Sherwood Foresters Regiment, who are now the Mercians. I spent about a week to ten days with these guys, sitting around. By the end of it, I was getting quite bored and was chomping at the bit to get out and see a bit of action. The phrase, 'be careful what you wish for' is something that we all ought to have applied in this situation. Despite the best efforts of battalions of Ministry of Defence press offices back in London and at places like Camp Bastion, Phil, a good friend, and myself managed to get out on a small foot operation, a company-size operation to clear a network of compounds in a section of the Green Zone not far from Gareshk. After a couple of hours we were really quite disappointed. The Taliban seemed to have turned and scarpered and there was much laughter about how they must have seen us coming and, discretion being the better part of valour, had hoofed it. Turned out that they had only hoofed it across the field and we found ourselves caught in a classic Taliban ambush. What struck me about that experience from someone of my generation and my pretty unremarkable background was the fact that there are thousands of young lads, the same age as Oxford undergraduates, in Afghanistan at the moment facing extraordinary situations every day and we almost never hear about it. The kind of discussions that we are having about the geo-politics that led to those soldiers being in that field that day seemed particularly abstract in the face of a twenty-year-old from Nottingham screaming in agony because he has got a bullet lodged in his intestine.

It seemed to me, covering operations in Afghanistan on a few occasions, that what people in Britain know about what is going on there is largely limited to a map image. You are all familiar with the diagram that comes up on the Ten O'Clock news when Fiona Bruce puts on a more sombre tone and for a fleeting twenty seconds there is a little map of Helmand province and we hear that one or maybe two British soldiers have been killed. There is very little human dimension to that. From my perspective, what I find astonishing about my own profession is that the coverage of this story, which has been going on particularly since 2006 but obviously really since late 2001, has been so sketchy. I think that there are really three reasons for that and when we talk about questions of hearts and minds back in the UK and other NATO countries and when we talk about the background to the kind of debates about the rights and wrongs of whether the British forces should be there, I think that we sometimes forget that most people in this country have very little idea of the daily reality of what ordinary people from this country are doing in Afghanistan.

I think that the first reason for that is perhaps, unlike Iraq, there hasn't been a great burst of controversy about it. There is a fair amount of simmering opposition to it but some of that is

based on the fact that people see Afghanistan as a bit of a sideshow to the war in Iraq, which was obviously hugely controversial because it started with a ground invasion and you had 1-2 million people out in the streets of London opposing it. So it was hard to ignore Iraq as a story. Afghanistan started more quietly and has been simmering on; and since 2006 has been a very serious, ongoing, at times high-intensity war. But because we have been there for so long, there wasn't a grand entrance like there was in Iraq, I think that people are sometimes unaware of it. The second reason, and this is probably more fundamental, is that very often the media simply aren't there. There is obviously a permanent press core based in Kabul but amongst the forces, British, America, Canadian, Dutch, whatever country, there isn't that presence that you might expect to be there.

For better or worse, I think that a huge proportion of the coverage of what is happening in Afghanistan is filtered to the audience back at home through the prism of the 'embed' system - which I mentioned earlier, where you have journalists who are sent usually for a very short period of time and get to spend a bit of time with the forces. They may or may not see something fundamental happening; it may be that they are there only for a week or two weeks and come back with a few tales of camp life, a bit of colour, probably for the local paper. But it doesn't make much of a splash. And yet during the last couple of years there have been some pretty major military operations in Afghanistan. If you think of the operation to retake Musa Qala at Christmas 2007 just over a year ago, probably if you asked someone in the street in Britain had they heard about Operation Musa Qala, other than in the few days it was in the news at the time, people would say no. Equally other people in this country might be aware of Johnson Beharry, the British soldier who received the Victoria Cross in Iraq. Very few people are aware of the case of Bryan Budd who posthumously received the Victoria Cross in Afghanistan. There are different reasons for that, but very often what I think is different in the ongoing war in Afghanistan now and the war phase of the operation in Iraq, the invasion stage, is that there isn't this permanent media presence.

Whatever you say about the media - we distort things, we get things wrong, we miss the point and sometimes we deliberately miss the point - if there is no media you simply don't hear these stories. One of the beneficial aspects of covering Prince Harry's story is that, although it was a story about a prince, and an officer - so in many ways he wasn't a typical soldier - when it came down to it, for a few days at least in the media in this country, people were seeing images of people having to dig a hole to use as a toilet, or cracking open their 24-hour ration packs, were hearing a bit of discussion about what kind of things people eat, what kind of things people wear, where they sleep, how much sleep they get. Those kinds of issues probably weren't covered and won't be covered without a permanent media presence in Afghanistan. How this might be achieved is anyone's question, particularly in the current economic situation. Resources in the media are particularly scarce. I think that there is an assumption that the media has bags of money and that they can fly off to these places at the drop of a hat, but the reality is that our advertising budget is hit because every company which needs to cut its own budget will cut advertising first. The media's resources are fewer and fewer.

And the third reason for the reduced coverage, or the one-sided coverage, is something that I think most people wouldn't expect to exist in the twenty-first century: and that is military censorship. There are very sound reasons not to report certain details or certain plans, or to delay reporting - not to report positions, that sort of thing - for military and operational reasons.

But what has always amazed me about British officialdom, in even the most austere settings, is its capacity to take a phrase like 'operational security' and apply it to all manner of issues. I remember having debates with Ministry of Defence censors - if that is the right term - about the correct title with which to refer to a Lieutenant-Colonel in second reference. This debate went on for about ten minutes. It had clearly nothing to do with operational security and nothing really to do with the operation at all. But there is a sort of unwitting obstruction from that side which does play into the coverage which we have there.

So in summary, I think that when we have these discussions about the rights and wrongs of being in Afghanistan, the rights and wrongs of different aspects of it, different operations, different facets, if you are trying to engage the public in it and if you are trying to engage the public's interest, that cannot take place in a vacuum. I think that the situation that we have at the moment is pretty close to a vacuum in terms of ordinary people's knowledge of the day-to-day reality of what is taking place in Afghanistan.

QUESTIONS AND ANSWERS

LM: Thank you very much indeed. As if by plan, we have exactly half an hour for questions. I hope that you all share my feelings of being moved after hearing our panel so far: the diversity of views of things; the diversity of experiences, passionately expressed. I feel extremely honoured to be sitting at this table. Whilst the audience gathers its thoughts for a moment to consider its questions, I exert my prerogative as chairman to begin as follows:

Joanna, you rather pointedly pushed this very important concept of nation-building to one side. This is an expression that floats around our involvement in Afghanistan and floated around the earlier part of the session as well. Could I actually ask you what you mean by nation-building and what we should mean by nation-building in Afghanistan?

JBY: Thank you for putting me on the hot seat with that one. That's a question, I think, that people write theses on. I didn't mean to put it aside, it was more that I thought dwelling on it would distract from what I was trying to say. In the definition, in terms of what I think we should have been aiming for in Afghanistan, nation building would have been some of the repercussions of the 'light footprint' strategy which I listed: concentrating on building the capacity of government institutions. This is quite well known in terms of improving governance; improving security sector institutions; improving justice sector institutions; allowing the Afghan Government to have the capacity and the capability to act as a proper government in terms of having control over the means of violence, being able to provide public services and a whole host of other issues.

And to deviate from your question, because I am probably not qualified to answer it entirely, I think the key, really, is not whether there was a misunderstanding of what 'nation-building' meant. There were two things: one was, I think, that particularly because the former US administration was so opposed to becoming involved in a nation-building exercise, it was never really discussed. Second, I think (and this is really where I tried to direct the second half of my comments) the crux has really been the relationship between the sovereignty of the country in which we are nation-building and the mandate of the international community to act in that country. And I think that this is a question which is not just key to Afghanistan, but key to the

international community as a whole and specifically the United Nations. At what point do we have the authority, as the international community, to intervene in government processes; to publicly disagree with governments that are hosting us?

I brought up the example of appointments, which I think is key. We have seen increasing numbers of appointments of corrupt officials, of officials linked to the narcotics industry, and there has been really heated debate about what our roles and what our responsibility are in terms of our position regarding the Government, when our mandate says that we are there specifically to support it. I don't really have the answer for you now, but I think that I will perhaps just leave the question open again. I think when talking about nation-building that this is really the crux of the whole process and is something which affects missions globally, not just in Afghanistan.

LM: I throw things open to the floor.

Sandy Anderson [BNC old member]: My grandfather spent his entire career in the Indian political service, working his way up as a political officer and ending up as the Resident at Hyderabad, the most senior of the political officers at the time of Independence. And I would ask (obviously Afghanistan is a totally different situation) *what does it take to be a political officer in Afghanistan, what are the qualities that are required? Where are we going to get all these people we need to go out into the field and how do we train them?*

LM: That would most naturally be addressed to George.

GNC: It's a very good question and to be perfectly honest I am not quite sure how to answer it. In terms of qualities, I could talk in generic terms but I think the most important thing to understand about the Southern and Eastern areas and the Pashtun areas is an understanding that the country is, and I generalise, not so much about bureaucratic process and procedure (certainly along Whitehall lines), but the country is more about politics, power, personalities and networks. And therefore for you to be effective in any country it will take you probably a year before you have got those in place. In Afghanistan, in a counter-insurgency environment where people don't talk and they don't want to know you, it takes a lot longer. So your basic quality is commitment.

Atif Ansar [BNC graduate student]: My question is for George Noel Clarke as well. Two questions: *what efforts are being made to work with the tribal system rather than against it? And secondly is there any merit to restoring monarchies in Afghanistan and Iraq?*

GNC: I can't talk on Iraq because I have never been there. To answer your first question: I think that about a year ago, a year and a half ago, it became part of the political debate in Kabul and in embassy circles that actually all this democracy stuff was nice but we were forcing our own Western approaches on a country which was, quite frankly, going to resist them. This produced a number of debates or initiatives, particularly in the security sector, about, given the short-comings or the short numbers or amounts of foreign troops, how one could use tribal systems to guarantee security. There were many ideas. The first, I believe, was an idea about community defence volunteers about a year ago, which was basically about raising militias. There are lots and lots of problems with this. There are certain areas in Afghanistan where it is possible to

raise militias and they have a long history, and one of the reasons why it is possible is because the tribal solidarity groupings are still quite strong. For example in the East you have the Shinwari, or the Pashai, who still have a strong tribal identity. The problem about the South is - and I think it is generally commonly acknowledged - that thirty years of war, of insurgency, of tribes moving around attracted by incentives such as the narcotics industry or by forced re-settlement, all this means that you have a very fractured tribal picture. And if you start arming one tribe, it's going to make another tribe jealous, it's going to create a whole problem. That has all been factored in.

What we now have are two processes going on - one in Wardak, which is a Ministry of Interior-led pilot initiative which is effectively about raising tribal militias. The second is the Afghan Social Outreach Programme, which is taking place in Helmand, under the auspices of the Independent Directorate of Local Government. Now, these developments are changing, they are in flux, but the thinking has now moved on, that actually what you do, given the fact that there have been no formal elections of district councils, is that you have an informal process of choosing tribal elders for a certain area, who will then put forward proposals on a number of matters, one of which might be security, another might be governance, another, the rule of law. It remains to be seen how effective these will be, how the plans will change, but it is one example of trying to work with tribal elders.

My direct experience of tribal elders goes back really to what I was saying, that we all think tribal elders are great. You know, we all think, 'He is a tribal elder, he can do it.' Unfortunately Taliban assassination, the various problems I have already alluded to, have meant that the tribal system has been weakened, so you can't just look to tribal solutions. That is the hard truth of it. You can try to empower them and try and empower a bottom-up local-governance approach but it depends on the area, it depends on the village, it depends on the tribal background. The level of detail required to understand whether something will work or not in a certain area is quite considerable. So the jury is open on that one.

In terms of the monarchy, that is not for me to say, it's for Afghans to say. I think broadly that is part of the problem, in that in terms of governance (I am slightly going round the subject here) in terms of governance, we think we have the power to make decisions. In fact if you speak to many Afghans they actually think the international community is rather a bit player. The fact of the matter is - and again this has implications for counter-insurgency - the Afghan Government is a sovereign government whether we like it or not. And to what degree should we be trying to get what we want out of the Afghan Government and to what degree should we give them the space to decide their own identity and their own decisions? And that is part of a wider debate.

But to answer your question more specifically, well, from what I know just from basic conversations, the monarchy was a long time ago, fifty years ago. Yes, it was seen as a period of relative calm, but in the South particularly they didn't view Zahir Shah's reign as giving them any form of development whatsoever, or any benefits. There are certain monarchist groups in Kabul who still have political power, but they are generally aligning themselves with some of the larger Jihadi groups. So I wouldn't see strong political support for restoration of the monarchy at the moment.

Sara Fazlali [Director of the Areté Club]: My question is directed to John Bingham. NATO tried to set up a communications centre in Kabul and they asked for thirty-one people to work for them and they got seven. As a result a lot of the journalists would write to them and say: I have heard about this story breaking out, what can you tell me? and they would get redirected to the website which would give them a paragraph, not really a news release. The access to the stories really isn't there in Afghanistan. *What would you like to see done in order to try to allow you access to stories you would need, that would then in some way help us with we are trying to do out there?*

JBM: Well, it is almost a bit like the security question. I think that until there is a large-scale Afghan media which understands the country a hundred times better than outsiders could possibly do, then I think that coverage is going to be sketchy like that. I think it depends whether you are talking about a domestic audience in Afghanistan or a domestic audience in the various countries which have interests there. From my perspective, going back to the question of covering the military side of things, one thing that Canadians do is that they have a permanent press corps based in Kandahar on a rotating basis and essentially they never leave it unmanned. So you have rival organisations cooperating on a pool basis a few months at a time, or maybe six months or a year at a time, and then passing over to someone else. I think that there could be scope for that. It wouldn't be a particularly expensive thing to set up in Helmand from the British side.

David Williams: A question to Alan Macdonald - there are quite a few countries in the world that have broken legs, two broken legs, especially in Sub-Saharan Africa and so on; and we tend to just leave them with broken legs. Whereas Afghanistan has got China, India, Iran all around. *Is there any relevance to that and what is your comment on it?*

AM: Well, obviously Afghanistan is one of those countries that suffers from poor neighbours and perhaps if we have a role in this and our long involvement in Afghanistan is to try and deal with that process of facilitating a change for the better. I think that Afghanistan isn't a lost cause. I think that it can be turned around. I think that it's a shame that over the last six years the international community has been so weak in holding government to account. I think we all know how to do all of these institutional state-building processes, of how to improve the judiciary and so on and so forth.

Afghanistan sits in one of these crossroads in the world. It can be and should be encouraged to become a normal state. If we leave it as a blank on the map then it will be filled by madness. So that is why I think that we should continue to be engaged but I don't believe we should be doing it with our armed forces because I think that we have got better models than that to use, and I think in our own history: we just need to have a different approach.

Ross Beaton [Balliol College]: I wanted to ask (to Joanna and possibly George as well) about warlords. You talked about wanting to marginalise warlords, putting them outside of the government; and obviously I have Rashid Dostum in mind here as a hard case. *How do you decide whom you marginalise and whom you bring on board? Is it based on how many atrocities they have committed in the past, or is it based on how many men they have under arms? And given that dichotomy, how do you then do it? How do you marginalise them?*

GNC: That is a very good question.

JBY: Yes, thank you, that is a fantastic question and one that is grappled with a lot on the ground, I can assure you. I think that in answer to your question: how do you do it, how do you do it *now* is the question. I think as much as it is unhelpful to say this, we missed the boat a lot in actually marginalising the warlords, specifically with the emergency Loya Jirga that was held when direct permission was given for them to attend. I think that that was a grave error that was made specifically by the international community. And as Alan said I think that the problem we are facing now is that we have actually allowed government to be captured by many of the people who were responsible for the civil war of the early nineties in Afghanistan. I think that it is a period that we sometimes forget as a time of complete horror and terror in Afghanistan. What we do now, in terms of the question of criteria which you mentioned? I think importantly, something that has been mentioned is the whole question of whether you can have transitional justice in Afghanistan. The question is focusing very much post-2001, there is some desire among the Afghans to have a sort of blank cheque before that but after that to really say, from 2001 this is where it starts to count and this is where you do get in trouble if you violate the laws of this country. Unfortunately that is not happening at the moment.

The other thing that you mentioned (you mentioned specifically General Dostum): I think that it is enormously important to ensure that you actually have an ethnic balance in the commanders that you go after. Now I know that might sound trivial but it is really not. If you went after General Dostum alone it would be perceived as a target against the Uzbek community in Afghanistan. So I think that what is key, if we are supporting the Government in going after certain warlords who are violating the national laws of Afghanistan and the constitution as they stand, is ensuring that we allow the Government to pursue a variety of warlords and there is not seen to be favouritism towards commanders who may be seen as closer to certain powerful figures than others.

GNC: I think that Dostum is a very good example and the answer is on a case-by-case basis and some warlords make it easier for you than others. Dostum, first of all, as you may know, he is now in Turkey on medical treatment. Who knows when he is coming back. Dostum, you may remember, first of all, has serious alcohol problems, he is probably suffering from tertiary syphilis, he has extremely aggressive outbreaks, most recently over a fellow Junbish politician Akbar Bai whom he did a rather nasty thing to with a broom handle. This promoted a lot of outrage and shock and internal abuse. The other factor which played into the hands of the international community was that of course Junbish, his political party, has a strong democratic and reformist element to it. So all that was needed really was the precise conditions for him to go and 'seek medical treatment' in Turkey and this allowed certain other elements to take control of the party.

Now it ain't always as easy as that; and certainly one country which shall remain nameless tried to block this because they wanted their man in control in the North. I think that the other point of course is that the politics of personality in Afghan politics is very strong and I think that Joanne made an important point, that even if in your own party, if you are a warlord, you may have reformist elements which may have been encouraged by certain other countries, you can still get your power from large-scale popular support. I remember for example - and this is just

sort of a little vignette - when Dostum was running in the 2005 campaigns, his election poster was a large poster full of graves with his face superimposed on it; and what that said is, 'I have killed all these people, that's how powerful I am.' Now that may shock you and me but I can tell you in the Afghan context if you have killed a lot of people you are very powerful and people vote for power.

Ed Bird [newly commissioned officer in the British Army]: My question is for Susanne. There has been talk recently - and it has been brought up today - that our six-month tours of Afghanistan are too short a period and we should extend them. *I was wondering if you had noticed any difference on the home front between our six-month tours and the American twelve-ish-month tours and the affect that lengthening the tour would have back home on families?*

SVN: Well, President Obama certainly wants to limit tours definitely to twelve months. There was a period when twelve months sometimes was not enough and there were not enough people to send there to switch people out; and then tours were extended and extended; and of course that caused its own problems in accruing stress and distress.

What I think the problem will be is the continuing deployments. As I said, some families are on their fourth deployment. They might have weathered the first one or two but what does it do to someone? Imagine when you come back and you know that in a year's time you'll be going out again; and your family as they are welcoming you back know that this is just a period of time before you go out again? And each time you are potentially not coming back. And you are preparing, every time you come back, you are already preparing mentally. And your family is trying to be a normal family, with that hanging over their head the whole time.

In the meantime your children are growing up with periods where you are not there. A child's development can be so rapid and so amazing in a year's time. A four year old is not the same as a five year old, an eight year old is not the same as a nine year old. And we talk about the children, they are out there, they have personalities, they have needs. My little boy is seven and he is having his first huge testosterone push. I read that little boys have these throughout, even before adolescence, and they become very emotional, very aggressive, very uncertain and it is the mothers alone who have to deal with things. For instance the boys are lacking their role models and when the role models return they are worn out.

I spoke to a veterinarian's assistant and she said she had a whole lot of animals brought to her at the beginning of the tour when people found that they had no one to pass their pets on to; they hadn't thought about it; it was a last minute thing. Then a few people during the deployment, the wives couldn't deal with the big manly dogs that some soldiers like to keep. She said it was amazing, at the end of the deployment when the service members came back, they had another spate of animals dumped on their doors. They did not expect it. The family member comes back and is dealing with all sorts of things that you have no idea about and sometimes they don't really want to formulate it and things keep welling up in them, keep surprising them, it isn't over in a week, in two weeks, in two months, in two years. And then the family presents them with all sorts of emotional needs. And the children need to bond again and the animals want to bond again. And she said it was just too much for these guys to have all these people needing them emotionally, including the animals, and something had to give; and the animal was the weakest link so they were left with all these creatures because the guys are

just totally, totally drained. And you are asking these people to do it again and again and again and their families as well. This is going to be the problem, not necessarily whether it is six months or twelve months. It is the frequency, it's the continuation and it's going to go on for at least a decade.

Hilde Rapp [Centre for International Peace Building]: We have just heard again from Susanne about the human suffering that comes with these kinds of tours and we have heard from everybody else in the panel about the suffering in Afghanistan, where it is magnified. And you may know that on the 21st of September last year there was a one-day cessation in all hostilities supported by the Taliban High Command and by all the Allied forces in order to allow 1.5 million children to be vaccinated against common diseases, the ones we were talking about earlier today in the session on Emerging Infection. And I just wondered whether, if one took something like the Millennium Development Goals as the end that we are actually fighting for when we send out people, as you were talking about, Alan, to protect a country, whether one could have agreements again for an intervention that is simply focused on a basic humanitarian issue like that, where again there could be an alliance, a second day of peace, as it were, and a third and a fourth. Because that way we can turn the means/ends debate that you have had all throughout the afternoon on its head and say, actually the means are an outcome of the ends one wants to achieve, and say who needs to participate in whatever way is relevant and possible to achieve those. And I just wondered particularly, I suppose, Joanne and George, whether you thought there might be any mileage for the UN to kind of tell some such story. Thank you.

GNC: First of all, yes; and yet no. First of all, there are lots of examples in the South and the East where Taliban groups have negotiated with civil society to let (particularly) health clinics open but also oddly sometimes even in the case of schools. The problem is, who are you dealing with? As I (sort of) mentioned before, we talk about the Taliban, yet it is not one organisation. Second, what we have seen, unfortunately, in the South is destabilisation whereby two things have happened: we have knocked out a lot of the mid-level Taliban commanders, thus creating a power vacuum. Who has come in? Radicalised Pakistani-trained madrassa students; but also the Taliban have had to recruit more and more criminals. OK. Plus the command and control from the Quetta Shura has unfortunately declined. So on a wider note who do you deal with these days, who do you negotiate with? Now the point is, you question whether nationwide it would be possible. I strongly doubt it but I think that certainly there is scope within individual areas to come to individual agreements with commanders. Now they may be Taliban, they may be criminal, who knows. I think that is the point.

AM: I would just like to add to this: In 1995 it was possible to jump on a bus from Kabul down to Peshawar and it was possible in my line of business, in de-mining, to actually negotiate your way across most of the country, in fact all of it by going to these power bases. Now what has changed in the last fifteen years of my experience in the country is that those power bases don't exist any more. The insurgency has changed the dynamic because basically now in the South it becomes very difficult to deal with one particular group. From the mine clearance point of view, the old modality we used to use of mobile teams moving into Kandahar, or wherever it was, doesn't work anymore. Because the levels of mistrust are so high now that communities don't like that. Also the insurgency has, in many places, simply broken down the rule of law. So is it actually the Taliban who are attacking your de-miners? Probably not, it's probably just a bandit group who need some income.

So with all of these problems, what we have managed to do in the mine clearance sector is to go deeper than that and just deal at a community-based level, which isn't a community in terms of a village but is a community in terms, perhaps, of an entire district, or in terms of an entire valley, or whatever grouping makes that community. We work with them to develop a process whereby mine clearance can actually take place. But mine clearance is a very benign activity and it has a common good, so we can probably get into places where other people can't. But it is becoming increasingly difficult in many parts of country to do that; and to get our community-based de-mining working in Southern Afghanistan took us about eight months to negotiate.

JB: Can I just add to that quickly? I agree with everything that has been said. I think that the key is the outreach that you need to allow that to happen, and the misunderstanding at capitals is how long that takes. This is something Dr. Nagl talked about - in providing roads you need the same kind of outreach so that these roads can actually get through these areas. The work that that takes is extensive and with the security situation deteriorating it is becoming increasingly difficult. And with things such as, or especially, medical programmes there are a lot of misunderstandings about what these programmes actually entail. So for example there have been attacks on teams vaccinating for polio. Afghanistan is one of the only countries that still has polio. It sort of boggles the mind why a polio team would be attacked, but there was a belief - there was an attack a few years ago in the tribal areas in Pakistan based on the belief - that actually these teams were coming out to sterilise the children; and this was a popular misunderstanding of what was going on. So I think the key is the time that it takes actually to have this kind of outreach; and that's why this is going to take such a long time in terms of a political outreach programmes.

GNC: If I can just say: hear! hear! A lot of this basic work is not rocket science - it's about trust building. In an insurgency atmosphere where quite frankly Afghans are totally fed up with ignorant foreigners coming in and trying to thrust their own opinions on them, it takes a long time to build that trust first of all. Certainly the kinds of information that I got after a year in Helmand were very different to what I got in the first six months. And this is the sort of psychological aspect of counter-insurgency that not many people talk about. I think in terms of roads, absolutely right, if you do the process right, if you involve the community you have a chance, if you just build the road, this was mentioned before, where the road stops the insurgents start. Well, actually if you look at a lot of the roads in the South and the East, a lot of the insurgents are already controlling them. We built the road, they control it. So it is about the process; it's about that.

LM: On that eloquent note (he's one of mine, you know), it is with great regret that we really have to call the session to a close. But I'm sure you would like to join me in thanking the people who have told us – and taught us - so much about these important matters, in both parts of the session. Thank you very much, all of you.

Part 3

Human Rights in the 21st Century

Part 3

Human Rights in the 21st Century

Section 1: Introduction

Lord Justice Scott Baker

The Human Rights Act is the most significant piece of legislation in my lifetime in the law. True, we had been a party to the European Convention on Human Rights for half a century, but with the Human Rights Act (1998), for the first time the courts began enforcing rights rather than just remedying wrongs. We're too far down the road of human rights now to put the clock back. Indeed, the Act may be an important step toward a British constitution.

In this session, Professor Bogdanor will speak on democracy and human rights and Kate Allen will speak on terror, security and human rights. Both are individuals of enormous distinction. Vernon Bogdanor has been Professor of Government at this University since 1996. And Kate Allen has been director of Amnesty International since 2000 and before that was Deputy Chief Executive of the Refugee Council for 12 years.

Their perspective on some of the issues and the solutions to them will necessarily be different. As the world has become a smaller place with the increase in speed of travel and the advances in communication and technology, so the threat of the terrorist has become more international and global. How is society to protect the rights of individuals and at the same time make the population secure against attacks by terrorists? Hardly a day passes without an issue hitting the media that involves the clash of these two objectives. To what extent should surveillance be allowed, and under what safeguards? For how long should individuals be allowed to be detained without charge? I don't think anyone has been detained for more than 14 days without charge over the last 18 months, and so where does that leave the 42 day rule? The bottom line is that these issues involve real people, something that Kate Allen may be able to tell us more about.

Are all terrorists evil people? Does history show that today's terrorist becomes tomorrow's respected member of society? And if so, should we be doing more about tackling the underlying causes of terrorism, rather than chipping away at the basic human rights of individuals? These questions and others are some of those that we will be thinking about this morning, and I ask Vernon to lead the way with his address to you.

9

Democracy and Human Rights[2]

Vernon Bogdanor
Brasenose College, Oxford

I

One of the dominant intellectual trends of our time is the transformation of political questions into legal questions, the transformation of questions in political thought, political philosophy and the historical questions of political philosophy into jurisprudential questions. A central role in that transformation was played by H.L.A. Hart, the philosopher who re-founded the study of jurisprudence in the 20th Century. In 1955 he published a seminal article in `The Philosophical Review' entitled 'Are there any natural rights?' thereby starting what became a trend towards the transformation of questions of political philosophy into questions of jurisprudence. Hart's lead was followed by many leading contemporary political philosophers, John Rawls, Ronald Dworkin, and Robert Nozick to mention just three.

This trend corresponds, I believe, with an alteration in the character of liberalism in modern times. Traditional liberal philosophers, such as John Stuart Mill, were concerned primarily with the balancing of interests, a balancing to be secured through processes of parliamentary debate and discussion. Rights were seen by the utilitarians as devices to protect the powerful. In his `Anarchical Fallacies', Jeremy Bentham famously called discussion of rights 'nonsense', and imprescriptible rights `nonsense on stilts'. Mill, and his leading modern disciple, Isaiah Berlin, wrote of an irreducible pluralism of values, and claimed that for liberals there are no right answers. Rights, however, purport to provide final answers, and these answers are to be given not by elected leaders, following a process of democratic debate and discussion, but by judges. When someone says 'I have a right' that really ends the argument. It takes the argument out of politics so that no balancing of interests seems to be needed.

It may be that liberals have become more accustomed to the agenda of rights because they feel that they have lost the public debate; they have been unable to persuade politicians or people, and therefore they have to rely on the judges. Bentham used to argue that rights were the child of law. What he meant by this was that the only meaning one could attach to the notion of a right was of something embedded in a legal system. To speak of a moral right was to speak of something that *ought* to be embedded in a legal system. In the modern world, however, rights are as much the parent of law as its child. The Human Rights Act, for example, translates into law a certain conception of human rights, a conception that is of course heavily influenced by the European Convention on Human Rights. The Human Rights Act is the corner stone of what I

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have called the new British Constitution.[3] It is transforming our understanding of government and of the relationship between government and the judiciary.

A.V. Dicey, like Mill and Berlin, a great liberal thinker, was proud of the fact that Britain had no bill of rights. He would have been horrified, I think, by the Human Rights Act. Dicey said that there is in the 'English constitution' – by which I think he meant the British Constitution – 'an absence of those declarations or definitions of rights so dear to foreign constitutionalists.' Instead, he argued, the principles defining our civil liberties are like 'all maxims established by judicial legislation, mere generalisations drawn either from the decisions or dicta of judges or from statutes.' With us, he says, 'the law of the Constitution, the rules which in foreign countries naturally form part of a constitutional code, are not the source, but the consequence of the rights of individuals, as defined and enforced by the courts.' By contrast, 'most foreign constitution makers have begun with declarations of rights' and then he adds – not ironically I think – 'for this they have often been in no wise to blame'. But the consequence, Dicey argues, was that the relationship between the rights of individuals and the principles of the Constitution is not quite the same in countries like Belgium, where the Constitution is the result of a legislative act, as it is in England, where the constitution is based on legal decisions. The difference in this matter between the Constitution of Belgium and the English Constitution may be described by the statement that 'in Belgium individual rights are deductions drawn from the principles of the Constitution whilst in England the so called principles of the Constitution are inductions or generalisations based upon particular decisions pronounced by the courts as to the rights of given individuals.' [4]

But following the Human Rights Act, our rights are no longer based on such inductions or generalisations. They are instead derived from certain principles contained within the European Convention on Human Rights. For judges are now charged with interpreting legislation in light of a higher law, the European Convention. Yet Dicey famously declared that there can be no such higher law in the British constitution; there is no law so fundamental that Parliament cannot change it, no fundamental or so called 'constitutional law', and no political or judicial body which can pronounce void any enactment passed by the British Parliament on the ground of such enactment being opposed to the constitution. Rights, however, have become something for judges rather than Parliament to evaluate.

Formally, it is true that the Human Rights Act preserves the sovereignty of Parliament since judges are not empowered to strike down acts of Parliament. All they can do if they believe that legislation contravenes the European Convention is to issue a statement, a declaration of incompatibility. But that statement has no legal effect. It is for Parliament to amend or repeal the offending statute (or part of a statute) if it so wishes, but it can do so by means of a special fast-track procedure.

The Human Rights Act, therefore, proposes a compromise between two doctrines: the sovereignty of Parliament and the rule of law. But the compromise, for its effectiveness,

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[3] See Vernon Bogdanor, *The New British Constitution*, Hart, 2009. This lecture is based on themes which are further elaborated in my book.

[4] A.V.Dicey, *Introduction to the Study of the Law of the Constitution*, 10th edition, Macmillan 1959, p. 144.

depends upon a sense of restraint on the part of both the judges and of Parliament. Were the judges to invade the political sphere and to make the judiciary supreme over Parliament, something which some critics allege is already happening, there would be some resentment on the part of Ministers and MPs. Conversely, were Parliament to ignore a declaration of incompatibility, and refuse to repeal or amend an offending statute or part of a statute, the Human Rights Act would be of little value. So the Human Rights Act proposes a compromise between two conflicting principles. I once asked a very senior judge: what happens if these principles do in fact conflict, the sovereignty of Parliament and the rule of law? He smiled and said, 'that is a question that ought not to be asked.'

The Human Rights Act, then, as well as giving greater authority to the judges, seeks to secure a democratic engagement with rights on the part of the representatives of the people in Parliament, though the main burden of protecting human rights has been transferred to the judges whose role is bound to become more influential.

II

Many human rights cases concern the rights of very small minorities, minorities too small to be able to use the democratic machinery of electoral politics effectively. Often, the minorities concerned are not only very small, but also very unpopular - suspected terrorists, prisoners, asylum seekers, and the like. Members of these minorities are not always particularly attractive characters: life would be rather simpler if the victims of injustice were always attractive characters or nice people like ourselves. Our legal system, however, is probably rather good at securing justice for nice people. It is perhaps less effective at securing justice for people who may not be quite so nice. But the Human Rights Act seeks to provide rights for all of us, whether we are nice or not: and perhaps there is no particular merit in being just only to the virtuous.

The Human Rights Act (HRA) is, therefore, based on a compromise, which could well prove shaky. I thought at the time the Act was passed that there was a very real likelihood of conflict between the Government and judges. But I thought the conflict would not arise for some time, and that the main effects would be long-term. I was wrong. The conflict has occurred much sooner than I thought. In 2006, just 6 years after the HRA came into effect, Tony Blair suggested that there should be new legislation limiting the role of the courts in human rights cases, and that meant amending the Act. The Prime Minister's comments were supported by David Cameron, the Leader of the Opposition, who renewed the Prime Minister's pledge in the Conservative Party's 2005 election manifesto to reform, or failing that, scrap the Human Rights Act.

The speed with which the HRA has led to a conflict between Government and the judges is to my mind remarkable. In the US it took 16 years after the drawing up of the Constitution in 1787 for an Act of Congress to be struck down by the Supreme Court in the landmark case of *Marbury vs Madison* of 1803. After that, no Act of Congress was struck down until the famous *Dred Scott v Sandford* case in 1857; a case which unleashed the American Civil War. It was not until after the Civil War, after 1865, that the Supreme Court really came into its own as a court that would review federal legislation. In France the 5th Republic established a new body in 1958, the Conseil

Constitutionnel, empowered to delimit the respective roles of Parliament and the Government. But this body did not really assume an active role until the 1970s.

The impact of the Human Rights Act in Britain has been much more rapid and it has had radical implications. But the impact has not been noticed as much as it might have been, precisely because we do not have a codified constitution. It is because we do not have a constitution that radical constitutional change tends to pass unnoticed. In Walter Bagehot's famous words, 'an ancient and ever-altering Constitution' such as the British 'is like an old man who still wears with attached fondness clothes in the fashion of his youth.: what you see of him is the same; what you do not see is wholly altered.' [5]   We have, therefore, not noticed that we have in effect made the European Convention on Human Rights, in practice if not in form, part of the fundamental law of the land. It is the nearest we have to a bill of rights.

The Human Rights Act, then, sought to muffle a conflict between two opposing principles; the sovereignty of Parliament and the rule of law. In doing so it presupposed a basic consensus on human rights between judges, on the one hand, and the Government, Parliament, and people on the other. It assumes that breaches of human rights will be inadvertent and unintended, and therefore that there will not be significant disagreement between Government and the judges. But there is clearly no such consensus when it comes to the rights of unpopular minorities. Two issues in particular – concerning the rights of asylum seekers and suspected terrorists – have come to the fore since the Human Rights Act came into force and have led to conflict.

The problem of asylum long predates the Act, but it has grown in significance since the year 2000 and is now a highly emotive issue, capable, so politicians believe, of influencing voters in a general election and so determining the political character of the government. Terrorism has also taken on a different form since the horrific atrocity of September 11, 2001. The form of terrorism to which we were accustomed, that of the IRA, was in a sense an old-fashioned form of terrorism; it had a single, concrete and specific aim, namely the reunification of the island of Ireland. The terrorism of the kind championed by al-Qaeda is quite different; it is a new and more ruthless form of terrorism with wide if not unlimited aims, amongst which is the establishment of a new Islamic empire and the elimination of the state of Israel. Al-Qaeda apparently has terrorist cells in around 60 countries. To deal with this new form of terrorism, so many governments, including that of the United Kingdom, believe, new methods are needed; and these new methods may well infringe human rights. But the judges retort that we should not compromise our traditional principles of *habeas corpus* and the presumption of innocence; principles which, they say, have been tried and tested over many centuries and have served us well.

But some senior judges have gone much further than this. They have suggested that the conflict between the sovereignty of Parliament and the rule of law should be resolved by, in effect, abandoning the principle of the sovereignty of Parliament. Indeed, a natural consequence of the Human Rights Act, according to this view, should be a formal abnegation of the principle of the sovereignty of Parliament. The sovereignty of Parliament, they go on to argue, is but a judicial

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[5] Walter Bagehot, `The English Constitution', in *Collected Works*, The Economist, 1974, vol. V, pp. 203-4.

construct, a creature of the common law; if the judges could create it, they can now, if they so wish, supersede it.

In a case in 2005, *Jackson and Others v Attorney General*, which dealt with the legality of the Hunting Act (2004), Lord Steyn declared that the principle of the sovereignty of Parliament was a construct of the common law, a principle created by judges. `If that is so, it is not unthinkable that circumstances could arise when the courts might have to qualify a principle established on a different hypothesis of constitutionalism.' Lady Hale of Richmond said that 'the courts will treat with particular suspicion (and might even reject) any attempt to subvert the rule of law by removing Governmental action affecting the rights of the individual from all judicial powers'. She is saying, in effect, that courts might take upon themselves the power to strike down legislation. Reiterating this point, Lord Hope said that 'Parliamentary sovereignty is no longer, if it ever was, absolute; it is not uncontrolled, it is no longer right to say that its freedom to legislate admits of no qualifications whatever.' He then adds that the 'rule of law enforced by the courts is the ultimate controlling factor on which our constitution is based.' [6]

Step by step, then, gradually but surely, the English principle of the absolute legislative sovereignty of Parliament is being called in question. It can hardly, despite Lord Hope, be anything other than `absolute'. For sovereignty is not a quality like baldness, a matter of degree, but more akin to virginity, a quality that is either present or absent.

The implication of the remarks by the three Law Lords, then, is that the sovereignty of Parliament is a doctrine created by the judges which can also be superseded by them. They would perhaps like to see this doctrine supplanted by an alternative doctrine: the rule of law. But is it for the judges to decide that for themselves? Or is it not rather the case that the doctrine of the sovereignty of the Parliament is part of our very constitutional history? Dicey, whom I quoted earlier, claimed that the roots of the idea of parliamentary Sovereignty 'lie deep in the history of the English people, and in the peculiar development of the English constitution.' [7] If Dicey is right, the judges alone cannot supersede the principle of Parliamentary sovereignty unless Parliament itself (and perhaps the people as well, through referendum) agrees.

H. L. A. Hart argued that the ultimate rule in any legal system was the rule of recognition. [8] This rule, Hart suggested, is not itself a norm, but a complex sociological and political fact, constituted by the practice of legal officials and judges. But legal officials and judges cannot alter a practice in a sociological or political vacuum. Surely Parliamentary and popular approval is also required for any alteration in the fundamental norm by which we are governed. At the present time, politicians clearly would not agree to give judges the power that it appears some seek, to supersede the sovereignty of Parliament.

Do the people themselves have a role in determining the rule of recognition? The Labour Government's White Paper, 'Bringing Rights Home', published at the same time as the Human Rights Bill was introduced into Parliament, found no evidence that the public wanted judges to have the power to invalidate legislation. It would be unwise to assume that anything has changed in the intervening period. But, whatever the state of public opinion, it is clear there is a

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[6] [2005] UKHL 56, para. 102.
[7] *Law of the Constitution*, p. 69fn.
[8] *The Concept of Law*, Clarendon Press, 1961.

conflict between two constitutional principles, a conflict which the Human Rights Act is designed to muffle. This conflict, if not resolved, could come to generate a constitutional crisis.

By a constitutional crisis, I mean not simply that there is a difference of view on constitutional matters. That is to be expected in any healthy democracy. What I mean by a constitutional crisis is that there is a profound difference of view as to the method by which such disagreements should be settled. There is a profound difference of view as to what the rule of recognition is or ought to be.

In any society a balance has to be struck between the rights of the individual and the needs of that society for protection against terrorism, crime, and so on. But who should draw the balance, the judges or the government? Senior judges would say, I suspect, that they have a special role in protecting the rights of unpopular minorities, such as asylum seekers and suspected terrorists. They would say that in doing so they are doing no more than applying the Human Rights Act as Parliament has asked them to.   The government, and one suspects most MPs, would disagree: they would say that it is for them as elected representatives to weigh the precise balance between the rights of individuals and the needs of society because they are elected and accountable to the people, while the judges are not. They would say that the Human Rights Act allows judges to review legislation, but this should not be made an excuse for the judges to seek judicial supremacy; they should not seek to expand their role by stealth, as the American Supreme Court did in the 19th Century.

There is thus a profound difference of view as to how issues involving human rights should be resolved. The Government believes they should be resolved by Parliament; the judges believe they should be settled by the courts. Because they disagree about this, each side is tempted to believe that the other has broken the constitution. Government and Parliament say that judges are usurping power and seeking to thwart the will of Parliament, whereas judges say that the Government is infringing human rights and then attacking the judiciary for doing its job in reviewing legislation and assessing its compatibility with the Human Rights Act. The British Constitution is coming to mean different things to different people. It is coming to mean something different to the judges from what it means to Government and Parliament. The argument from Parliamentary sovereignty points in one direction, the argument from rule of law in another.

There are two possible outcomes. The first is that Parliament succeeds in defeating the challenge from the judges in preserving Parliamentary sovereignty, which might mean that, on some future occasion, a declaration of incompatibility comes to be ignored. The second possible outcome is that the Human Rights Act trumps Parliament and that a declaration of incompatibility by a judge comes to be equivalent in practice to striking down legislation, since Parliament automatically gives effect to such a declaration by amending the law. It is too early to tell which outcome is more likely to prevail, but it seems unlikely that the compromise embodied in the Human Rights Act can survive over the long-term. We are at present in a transitional period and eventually some sort of constitutional settlement will be achieved. But it will be, I think, a painful process and there will be many squalls and storms on the way.

The Human Rights Act, it has been argued, is of greatest value in cases concerning small and unpopular minorities; minorities that are unable to use electoral and political processes effectively. Larger minorities are generally able to use these processes and perhaps for them, the Act may be less helpful. Nor can the Human Rights Act be expected to resolve wider social issues. It cannot be expected to deal with the wider problems that face us in a multicultural society. It cannot resolve our culture wars.

Trevor Phillips, the Chair of the Equality and Human Rights Commission, has drawn attention to the range and nature of these conflicts in such areas as the implementation of affirmative action policies; the recognition and use in the British legal system of Sharia law and Sharia courts, where the testimony of a woman may be worth less than the testimony of a man; the legitimacy of arranged marriages and concerns over their potential for coercion; the role of faith schools in our society; and the balance between the freedom of choice of parents in choosing schools and the goal of securing racial and social integration.

None of these issues can be settled by invoking rights. All of them involve a clash of rights and a clash of interests. For this reason, they are not questions which judges can settle. The great danger, particularly with the idea of extending rights into the social and economic sphere, which the Joint Select Committee on Human Rights in Parliament recently proposed, is of bringing judges into areas that lie beyond their competence. There is a danger, in addition, that we seek to enlist the support of judges to transform our current liberal prejudices into unshakable verities and eternal truths. For these reasons, I believe that the legal paradigm, inaugurated by the work of H.L.A. Hart, may have gone too far. It is worth remembering what American Supreme Court Justice Robert Jackson said of judges in the 1930s when the United States Supreme Court was using its power of judicial review to cripple President Roosevelt's economic and social programmes. `We are not final', he said, `because we are infallible, but we are infallible only because we are final'.[9]   Justice Stone reminded his colleagues that `While an unconstitutional exercise of power by the executive and legislative branches of the Government is subject to judicial restraint, the only check on our own exercise of power is our own sense of self-restraint'.[10] This was a salutary reminder.

It is dangerous for a society to believe that it can leave its liberties in the hands of judges. The Human Rights Act, like the Bill of Rights in the United States, shows what is in the shop window; the question of whether one can actually buy the goods is quite separate. It must be remembered that the American Bill of Rights, which is today so greatly lauded, did not prevent segregation or 'lynch law' existing in many states in the South for very many years.   The equal protection clause of the 14th Amendment was a mockery in practice for anyone belonging to the black minority during the Jim Crow years.

I conclude, therefore, that the philosophy of rights is not sufficient to meet the challenges of the 21st Century, which is the central theme of these lectures. We need to return to an older form of liberalism, that championed by Mill, a liberalism which seeks to balance interests and

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[9] Brown v Allen 344 U.S.(1953) 540.

[10] *United States v Butler* 297 U.S. (1936) 79.

competing claims. The philosophy of rights is most needed in cases dealing with vulnerable and unpopular minorities whose interests will not be recognised by the ballot box. But even in this very limited area, we must be aware of over-estimating what can be achieved by judges. Judges, constitutions and political institutions are necessary to protect human rights, but they can never be sufficient. The condition of society matters also. Mill famously criticised Bentham for believing that a constitution is a mere set of rules or laws, rather than a living organism representative of an evolving political morality. Dicey also believed that the quality of a legal system depended on the quality of the society which it served. He once said that 'the "rule of law" or the predominance of the legal spirit may be described as a special attribute of English institutions.'[11] That may seem, at first sight, an arrogant statement. But what he meant was that our laws rest essentially on a public opinion that supports the protection of human rights; that the protection of human rights depended not only on laws and institutions, but on a spirit favourable to human rights.

Edmund Burke is supposed to have said that 'all that is necessary for evil to triumph is for good men to do nothing.' No one has been able to find the source for this quotation, but whether he said it or not, there are very eloquent testimonies to its truth. We are mistaken if we believe that human rights legislation is sufficient to preserve our freedom.

In a book published long ago, in 1925, called *The Usages of the American Constitution*, the author tells the story of a church in Guildford, the Holy Trinity Church. On the site of this church was an earlier building which was destroyed in 1740 when the steeple fell and carried the roof with it. One of the first to be informed of the disaster was the verger. `It is impossible', he said, `for I have the key in my pocket'. [12] The Human Rights Act is the key, but it will not of itself prevent the fall of the steeple. Only a vigilant public opinion can do that.

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[11] *Law of the Constitution*, p. 195.

[12] H.W.Horwill, *The Usages of the American Constitution*, Oxford University Press, 1925, p. 243.

10

Terror, Security and Human Rights

Kate Allen,
Amnesty International UK

I

I will start by offering a brief background to the work of Amnesty International and the concerns that its members have regarding global practices in human rights. Amnesty International is a movement of ordinary people who stand up for justice. Amnesty has been in operation for almost 50 years and has 23.2 million members in 150 countries, with over 250,000 of those members in the UK. The UK branch of Amnesty performs a vital role in lobbying and influencing the British Government; a government that has a major influence on global policies and practices in relation to human rights through its membership of the United Nations Security Council, the G8, the European Union, NATO, and the Commonwealth.

Campaigning for human rights can be a lonely business: back in 2001 as we watched those planes flying into the Twin Towers, we sensed that we were about to face a significant challenge. Subsequently, images of the first detainees transferred to Guantanamo Bay and the release of the photographs of detainee abuse at Abu Ghraib prison in Iraq sadly confirmed our initial fears. In the shadow of 9/11 and the 7th of July bombings in London, advocating for the human rights of terrorist suspects has often been a minority past-time. Nonetheless, Amnesty members across the globe have continued to campaign against the injustices that have followed in the wake of these events. Specifically, in the UK, Amnesty has focused on campaigns against the Government's proposals to extend pre-charge detentions, and also attempted to raise greater awareness of the terribly detrimental impact of many of the laws and policies that have been enacted and implemented over the last decade.

In the United States, the election of President Obama has resulted in executive orders to the close the detention facility at Guantanamo Bay within one year; to suspend trials by military commissions; to close CIA secret detention centres; and to ban the use of 'enhanced interrogation' techniques. These are important changes from the policies of the Bush Presidency, but it too early to measure the long-term effectiveness these orders will have on curbing human rights abuses. However, it appears that some of Amnesty's campaign goals have been achieved. It is the hope of Amnesty members that the US can re-establish human rights practices consistent with the aims of its own Constitution and Bill of Rights.

II

I want focus now on some more specific cases to illustrate where I believe we currently are in relation to human rights and problems posed by governments' attempts to deal with

international terrorism. I will set out some of the recent gains made in preserving human rights, but also some of the battles that remain to be won, of which there are many.

Let me start by making one point clear: persons who have been in involved in terrorism must be brought to account. But, in being brought to account, those individuals must appear before a court of law that recognises and employs our full range of legal principles and practices. However, these long-established principles and practices are under threat. Despite the plans to close the prisoner facility at Guantanamo Bay, the US Government's operation of Central Intelligence Agency controlled secret prisons, coupled with the well-documented practice of prisoner rendition has facilitated the proxy detention of hundreds of individuals in a global network of prisons. President Obama's executive orders have, to date, been silent on these issues. These omissions could lead to continued, severe human rights violations. President Obama has made an important start in addressing the concerns of Amnesty but much remains to be done.

In the UK, the Government is still adamant that it can deport suspects to states where they face a risk of torture and execution. The UK also continues to hold people under virtual house arrest under the system of control orders. The Government also has recourse to emergency legislation that would allow even longer pre-charge detention than the current 28 days.

Amnesty also has longstanding concerns about the counterterrorist policies we are increasingly seeing used globally. Work to prevent human rights violations by governments under the auspices of counterterrorism operations spans a number of countries around the world. Amnesty has researched, documented, and taken action to hold governments to account for their poor human rights records, often excused by claims for the need increased security. Amnesty works to ensure that the increasingly widespread violation of rights is exposed and that arguments are put forward against governments that attempt to use security as an irrefutable justification for diluting or ignoring fundamental human rights. For example, Tunisia holds hundreds of individuals in secret security facilities; Egypt and Syria are known to facilitate the outsourcing of torture; international forces in Iraq – overwhelmingly led by the US – hold 25,000 detainees (of whom 840 are believed to be children) without charge or trial.

Amnesty has campaigned against these burgeoning violations and the initial public support for them, since the beginning of the 'War on Terror'. In January 2002, on the day that the first images were broadcast of men being taken to Guantanamo, manacled, shackled, hooded, dressed in orange jumpsuits, I conducted a succession of media interviews during which the rights of terrorists suspects was the focus. One of the programmes I appeared on that day, *Richard & Judy*, put a question to the public that asked 'if it was right that these men should be locked up and the key thrown away?' The result reported that 92 percent of viewers that morning had voted 'yes' with only 8 percent dissenting. Since that time public opinion has moved significantly against this view as we have witnessed the damage that Guantanamo Bay has done to the image of the American justice and the role of the US in the protection and promotion of human rights.

Despite the recent order for Guantanamo Bay's closure, significant problems remain. During the last 7 years, over 800 people have been detained at the facility, with at least 245 individuals still

currently being held. Between 55 and 60 of the current detainees can't be returned to the countries in which they have nationality because their lives will be in danger.

These problems have been compounded by other government's ambivalence towards the problems raised by the detentions at Guantanamo Bay. It took Amnesty UK many years of campaigning to persuade the British Government to argue with the US administration for the British citizens held in Guantanamo to be returned to the UK. It took until 2005 for the 9 UK citizens who were held to be returned. Upon their return to the UK all of the men were freed, none were held for more than a couple of hours. All are now trying to rebuild their lives.

The difficulty of rebuilding lives that have been deeply impacted by the rights abuses that have occurred during the War on Terror becomes clear when look at the details of the treatment some of them have received. One of the members of a group of British citizens that became known as the Tipton Three (Shafiq Rasul, Asif Iqbal, Ruhal Ahmed) was continuously beaten while in detention at Guantanamo and subsequently confessed to having been on the battlefield in Afghanistan with Osama bin Laden. It was MI6 that disproved this claim when, upon further examination, it became clear that at the time that he claimed to have been in Afghanistan, MI6 could show that actually, he was working in Dixons in Tipton. This illustrates the impact of torture on individuals, and also the worth of information extracted through torture methods.

Another British citizen, Moazzam Begg, recounted an extraordinary story about his time in captivity in Guantanamo. Along with experiences similar to those of the other captives of torture, he also recalls being held in a cage where he was, at times, supervised by a young female US Army officer. One day, while this officer was sitting with Moazzam, she took out a book, Dickens's *A Tale of Two Cities*, and started reading. Moassam then spoke to her, saying, "I've read *A Tale of Two Cities*; it is a very good book, isn't it?" Moazzam recounts that the young army officer was absolutely amazed; she was amazed that he spoke English and even more so that he had read Dickens. They started a conversation and eventually became friends during his time in Guantanamo. The officer told Moassam that in preparation for their role of supervising the detainees in Guantanamo, she had been told to consider the prisoners in same way that she would consider the character Hannibal Lecter from the film *The Silence of the Lambs*. This is a disgraceful way for the US army to train its personnel. If you dehumanise people in this way, you set the tone for torture.

Amnesty has documented many reports of torture from those associated with Guantanamo, including reports made by US personnel. In 2006, a report by five UN experts found that the treatment and conditions undergone by Guantanamo detainees included sensory deprivation, detention in cages without proper sanitation, exposure to extreme temperatures, minimal access to facilities for exercise and hygiene, systematic use of coercive interrogation techniques, long periods of solitary confinement, cultural and religious harassment, and restriction or denial of communication with families. All of these practices occur alongside uncertainty for the detainees as to how long they will be held. In 2003 alone, these conditions resulted in over 350 acts of self harm or suicide attempts. In 2006 three inmates succeeded in committing suicide by hanging, an event described by the US administration as an "act of asymmetrical warfare".

These allegations of torture have now been confirmed by US authorities. In May 2008 Susan J. Crawford, the convening authority of the military commissions at Guantanamo, dismissed charges against Mohammed al-Qahtani, a Saudi Arabian national facing a death penalty trial at the prison camp. At the time of the dismissal there was no official explanation for her decision, but she later told the Bob Woodward in an interview for the *Washington Post* that "We tortured Qahtani ... His treatment met the legal definition of torture. And that's why I did not refer the case" for prosecution. Crucially, Crawford said that the interrogation techniques used against al-Qahtani were authorised.

At Amnesty UK, the focus in relation to Guantanamo after 2005 became the UK residents who remained in US detention (*residents* as distinct from *citizens*, the latter had already been released). As late as February 2006, Tony Blair referred to Guantanamo Bay as an "anomaly". That was as far as the then Prime Minister would comment on the issue.   It wasn't until August 2007 after Blair's resignation that the Government changed its policy towards British residents in Guantanamo and argued for their return. This campaign has yielded results; with UK resident Binyam Mohamed returning from Guantanamo as this lecture is being delivered.

Binyam's case is emblematic of the concerns Amnesty has that underpin our campaigns for the preservation of human rights, so I will discuss the details of his story. Binyam lived in the UK for seven years from 1994, having exceptional leave to remain under refugee determination procedures in the UK after having fled from Ethiopia with his family. In 2001 he travelled to Pakistan and Afghanistan. In April 2002, he was stopped by Pakistani police who saw that he was in possession of a false passport. This is obviously grounds for suspicion, and sufficient for Pakistani authorities to detain and perhaps charge him with passport offenses.   However, instead seeking charges and a judicial hearing, Binyam was handed over to the Pakistani secret police, the notorious Directorate for Inter-Services Intelligence (ISI). He was taken to an undisclosed place of detention where he was tortured; including being hung from straps attached to walls and beaten. Within days of his arrest we believe US agents were brought in to coordinate the interrogation while the ISI carried out the physical abuse. It is now known that British officers from MI5 were present for some of the interrogation sessions. In May 2002 MI5 officers, unforgivably, turned a blind eye to the fact that Binyam was being denied access to a lawyer, and failed to intervene despite his desperate pleas to be saved from further torture.

Binyam was then subject to a clandestine CIA rendition operation; 6 months after first being stopped by Pakistani police, Binyam was passed over to CIA agents and, on the 21st of July 2002, taken to Morocco. While in Morocco he was subjected to sustained brutality which was rightly described by his civilian lawyer as "medieval torture". Amongst other barbarities, Binyam's genitals were repeatedly and regularly mutilated with a sharp blade. His detention in Morocco continued for 15 months, after which he was transferred to the notorious 'Dark Prison' in Kabul, Afghanistan, where he was again tortured and subjected to prolonged periods of light deprivation and exposure to deafening noise. After 9 months in Kabul, Binyam was finally transferred to Guantanamo Bay, where he spent the subsequent 4 years.

Binyam's military lawyer, Yvonne Bradley, who has been a wonderful advocate for Binyam, has described some of the details of his detention at Guantanamo. Binyam has been on a hunger strike which has left him severely weakened; he has also been refused access to his mail, including letters from Amnesty members which his guards referred to as "fan mail". Yvonne

Bradley also noted that the chief prosecutor in the US has stated that Binyam poses no threat to the UK or to the US.

So, when we hear reports of Binyam's harrowing story, we must remember that it is only since 2007, not 2002 when he was first detained, that the UK Government has been arguing for his release. We must also remember that two other men (Shaker Abdur-Raheem Aamer and Ahmed Belbacha) who both have connections to the UK are still being held in Guantanamo Bay. However, this remains an issue that the UK Government is saying very little about at the moment. Both of these cases will remain a focus of campaigns for Amnesty UK.

III

The impact of the practices I have been discussing, both in the UK and other parts of the world, has been severe and deleterious. In my role with Amnesty UK I am regularly invited to give evidence to the Foreign Affairs Committee of the House of Commons. In 2006 I was asked for my overview of the UK Government's position and conduct with regard to the War on Terror. What I said then was that the overwhelming concern that Amnesty International had about the UK Government's policies at that time, was that they had weakened the international ban on torture. To be clear, Amnesty was not claiming that the UK Government was torturing people; Amnesty's position resulted from the Government's efforts to introduce evidence, extracted under torture conducted elsewhere in the world, into the British court system. Further, the Government was attempting to deport people to countries where they were at risk of being tortured. Such efforts provide tacit support for other governments that conduct human rights abuses in other parts of the world. Fortunately the Law Lords have been prominent in defending against these attempts and have forced the Government to reconsider its position.

However, concerning practices continue. I want briefly to discuss now the use of control orders against some individuals in the UK. As Professor Bogdanor has already noted, human rights are often most acutely needed to defend small and unpopular minorities. This point is illustrated by the issue of control orders: as one senior UK civil servant said to me when I mentioned the issue, "I don't know why you are worrying about this, there are only 15 men being held under control orders." So I requested Home Office approval to visit some of these 15 men to see for myself what the impact of the control order is on them.

One such man is Mahmoud Abu Rideh, a stateless Palestinian recognised as a refugee in the UK in 1997. Mahmoud suffers from severe Post-Traumatic Stress Disorder the result of torture before his entry as a refugee into the UK. He was detained without charge between December 2001 and March 2005 under the Anti-terrorism, Crime and Security Act (2001), under suspicion of being involved in terrorist activities. Although he has not been charged, he has been told only that he is suspected of various activities, including raising funds for purposes connected to terrorism. Mahmoud claims that money was raised for humanitarian purposes, including supporting educational products in Afghanistan. No evidence regarding his activities has, to date, been produced.

After the Law Lords overturned the ability of the Government to hold foreign nationals, Mahmoud was released under the conditions of a control order. It is now 7 years since his initial detention: after 4 years in prison, he has now lived for 3 years under a control order. He

lives in poor accommodation with his wife and five children. As a condition of his control order he must phone-in to report his whereabouts three times a day. One of those reporting time is at 5am. If he fails to report, it is possible that the police will arrive at his doorstep; this has happened in the past. To make sure he reports, his children wake Mahmoud at 4am, to make sure that he is up, as he has difficulty waking, the result of being heavily medicated. He has now attempted suicide on several occasions. I do not know the validity of the suspicions concerning Mahmoud's activities, but this is no way to treat people.

I have met others who have been in these conditions too. Everybody I have met under these orders is clear that their families are also effectively living under control orders. The fear of being listed as an associate of a terrorist suspect by the Home Office hangs over the friends and families of these men. Most of these people are refugees or asylum seekers themselves and the prospect of such a listing often prevents friends from visiting. The result of the control orders is that these men and their families are isolated and living in shocking conditions.

Compounding the concerns raised by control orders, the Government continues to attempt to remove people to countries where they may be tortured, as we have seen with the case of Abu Qatada. I return Professor Bogdanor's earlier comment about the merits of protecting only the rights of "nice" people: I don't think Abu Qatada is a very nice person, but human rights are there for the worst of us, not just the best of us.   Amnesty UK has been involved in this particular legal case for some time, and no doubt it will eventually go to the European Court of Human Rights.

In attempting to deport people, the Government has entered into Memoranda of Understanding with countries such as Jordan, Syria, Lebanon, and Liberia; and has attempted to reach similar agreements with Libya. The aim of these memoranda is to gain agreement from signatory governments that they will not torture individuals deported to the host county. Monitoring of compliance with the agreement is then conducted by local Non-Governmental Organisation. The governments the UK has signed memoranda with all routinely use torture. These governments torture despite two of them (Libya and Jordan) already being signatories to the UN Convention against Torture. Amnesty considers these attempts by the UK Government to gain compliance simply through memoranda to be absolutely worthless. At a meeting in Beirut with Amnesty's partner organisations in the region, in which NGOs' attitude to the British Government's approach was discussed and in which we also discussed whether any of these partner organisations intended to become involved in the memoranda's monitoring system, the overwhelming response was outrage. No NGO that Amnesty works with in the region would be involved. However, there are NGOs taking this role, though they are not NGOs which Amnesty would consider as our partners. For example, the volunteer NGO from Libya to do this work was a Gaddafi Foundation, which gives an indication of the level of impartiality of the organisation prepared to facilitate these agreements.

IV

Our view at Amnesty is that none of the rights violations that I have recounted in these stories makes us any safer. The response in many countries around the world to the rights violations made under the remit of the War on Terror is one of anger and horror. This anger ultimately makes us less safe. Since the election of President Obama we have seen the UK Foreign

Secretary make a speech about the errors of the War on Terror. Stella Rimington, the retired Director General of MI5, has spoken frankly about the Government's efforts to undermine fundamental liberties and rights. There seems to be an increasing awareness and discourse about these developments. This is the discourse that we at Amnesty have pushed for from the start. We have never believed that you can protect our security at the cost of other people's human rights.

As awareness of the failings of the last few years grows, there must be inquiries. There are people caught up in the security mechanisms of the war on Terror who have disappeared; there are people whose names we know but whose whereabouts are unknown. These issues need to be investigated, we have to find out what has happened and we have to hold those who have been responsible to account. The risk for President Obama is that he looks forward and that he doesn't look back at those who need to be brought to account. In the UK the process of investigation has begun. Binyam Mohamed's ordeal has led the Home Secretary to refer the evidence to the Attorney General and the Intelligence and Security Committee for investigation. This is a start; however, what is required is a complete investigation by an independent body, which the Intelligence and Security Committee is not. It is absolutely essential that there be independent inquiries, and that those involved in undermining fundamental human rights be required to account for their actions. Security comes from preserving basic rights and values. Only when this is understood will we all be safer.

Human Rights Section 1: General Discussion

SB: Lord Justice Scott Baker
VB: Professor Vernon Bogdanor
KA: Kate Allen

Bill Roberts [BNC old member, 1961]: I would like to ask a simple question: *is the press doing anything useful in its attitude to what we have heard today?*

KA: Yes, I think when we look at some of the investigative journalism that has gone on, especially on the rendition issue, it has been journalists who have tracked where planes have been moving around the world and where some of the secret detention centres might be. So there has been a great deal of investigative journalism both in the UK and in the US. And Amnesty work alongside journalists sharing information where we can. So, yes there has been some very good reporting.

Judith Hockaday: *It was very good to hear Kate Allen talk of the need for open inquiries. However, I have had concerns for many years about the usefulness of this, because of the Saville Inquiry, which we had been waiting for the results of for very many years.*

KA: I'm not sure I have enough information about that particular inquiry. At the moment what we have is a referral to the Attorney General and to the Intelligence and Security Committee; the Intelligence and Security Committee reports to the Prime Minister, who then decides what gets published. This is not adequate, we need a proper independent inquiry, and one that those of us who have been campaigning on this issue for many years would do our best to support, and see that it could do a good job.

Judith Hockaday: *Yes, but our ability to produce this good result seem inadequate in light of the outcome of the Saville Inquiry, which has not yet been reported.*

SB: Well we haven't had the Saville report yet; it's a very, very long time since his inquiry began, which I think was in 1998. I think it's a tragedy that it has taken so long. It is not for me to go into the various reasons for that, but one of the by-products of it having lasted so long is that the law has lost in the House of Lords once of the best legal brains of our generation. I think that inquiries have their place, but they really need to be very focussed on precisely what they are enquiring into and not be given too wide a remit. Otherwise the result is destroyed by the length of time it takes to produce it.

Roger Martin [BNC old member]: I would like to raise two questions of contentious law. One is indirectly related to terror, but not torture, and the other related to torture but not terror. The first regards the Geert Wilders case, where the Home Secretary banned him from coming to this country not on the grounds that he would incite violence and disorder from his supporters, but that he would cause such offense that he would incite violence and disorder by his opponents.

In this case it would appear, at least in the mind of the Home Secretary, that there is some kind of legal right not to be offended. This adds to the earlier attempt to outlaw the incitement to hatred of people on grounds that their religious views were detestable. *These two examples appear to be major erosions of the freedom of speech, and I would like the panel's views on where human rights law stands on the right not to be offended.*

The second relates to torture. The European Convention has, I believe, 4 unconditional rights, of which the primary two are the rights not to suffer degradation or torture. I am a member of Dignity in Dying, which campaigns for assisted suicide for those who are desperate to avoid being tortured and degraded until death, and who would like a dignified exit sooner. Now, *it matters little to the victim, whether this torture is inflicted by an agent of the state or by a nasty disease, and again it seems to me that there is a strong human rights argument that the current prohibition on the ban on assisted suicide shouldn't be enforced.*

VB: On the first question, I completely agree with you that there is no right not to be offended. I think Wilder's views are obnoxious, but I think it was a restriction of the freedom of speech not to allow him to put forward his point of view. I think the issue was well expressed by John Stuart Mill, whom I quoted earlier, who argued that actions get into the public sphere when they are going to cause harm to others. The point about the harm criterion is that you must give specific reasons for why someone should be stopped from speaking his or her mind or undertaking some action – you can't just say that one is offended. There is no right not to be offended; there must be something more objective to the argument. So, I completely agree with your first point. On your second point, I think I will pass to Kate.

KA: There isn't an Amnesty view on assisted suicide. It isn't an area in which we have adopted any policy. The issue of torture in terms of international law does not include those areas. I have personal views, but I'm sure you don't want to hear them.

SB: If I can touch on the assisted suicide point. I was the judge in the divisional court in the recent case of Debbie Purdy. Our decision in that case was recently upheld by the Lord Chief Justice. The only point I would make is this: the provision which makes it an offense to aid, abet, counsel, or procure suicide, is very widely framed. The problem that has to be faced is how to protect individuals from relations and others who may have an interest in their passing on to the next world, whilst at the same time doing what can be done to assist those in some of the cases that we have heard and read about. The present position is that it is left to the Director of Public Prosecutions to decide in which cases there should be a prosecution. The issue in the Purdy case was whether the Director should be required to give more specific guidelines and the answer is that the present guidelines are sufficient. But it is very difficult to draw up precise guidelines which would anticipate in advance the particular circumstances of every case.

Robert Hinrichsen [BNC student]: This is a question for Professor Bogdanor. You conceded that you couldn't foresee if Parliament would ultimately decide not to implement a declaration of incompatibility, or alternatively that there would arise some sort of constitutional convention regarding judge's authority. However, *is it possible that the judges might instead choose to enlarge the scope of their powers through a wider interpretation under section 3 of the Human Rights Act?*

And related to this issue, you mention that you think that the direction we need to move in is a return to the liberalism of Mill; that is to say a consideration of the balance of interests rather than a positive expression of rights. *I was wondering at what point in the process you think the balancing of interests should take place? And also whether the enlargement of the scope of section 3 powers could be the mechanism for the balancing of these interests?*

VB: I think that you are right that Section 3 powers will be enlarged, but I don't think that relates to the question of interests. The point I was trying to make was this: rights are of greatest use to people who cannot get into the electoral and political process, specifically small minorities. When we talk about larger minorities, they can utilise the political process, they have sufficient numbers to influence public opinion. In this, my views are much influenced by the American experience. In the famous case of *Brown v. Board of Education* – which ended segregation in US schools – the decision did not actually lead to much desegregation because the Executive Branch didn't put its weight behind it. Much more important for the process of black emancipation was the Voting Rights Act of 1965 which immediately transformed the whole of the South of the US because the black vote became important. I think that is the key factor in emancipation, and I think probably the movement for black emancipation in America took a wrong turn in looking to the courts rather than to the political system.

So I believe that the Human Rights Act should be preserved for very small and unpopular minorities that cannot get into the political process: prisoners, asylum seekers, suspected terrorists and the like. When we go beyond that, it is a mistake from the point of view of a political democracy. It also puts on judges problems that they really cannot deal with, particularly when you move into the area of social and economic rights. The judges aren't equipped to say what a right to healthcare or housing or things like that are, in my opinion.

Andrew Burroughs [BNC old member]: This is a question for Professor Bogdanor. *You talked about the uneasy compromise between the judiciary and Parliament, and I was just wondering if you thought that any enhanced role of the judiciary would have to be accompanied by a change in the way in which our senior judiciary are selected?* At the moment, I think it would be fair to say that our Law Lords are selected purely and simply because they are the best lawyers – there is no election or accountability, there is no inquiry in to their political values. *In so far as one is willing to suggest that they should have the ability to strike down legislation, do you think that that has to be accompanied by a fundamental change in the way in which they are selected?*

VB: You raise a very fundamental question, I think, and the more judges are seen to encroach upon matters that were previously the preserve of politicians, the more politicians will try to involve themselves in the selection of judges. Of course this happens to a great extent in the US. One of the arguments for voting for Obama, people said, was that he would put liberal judges on the Supreme Court. Equally, in 2004, an argument that appealed to some was that Bush would put conservative judges on the Supreme Court. We have taken a different path in this country because we have insulated, through the constitutional format, the selection of judges from the political process. But, nevertheless, this is coming to be an issue, and I think it was during the Pinochet case that we first saw in the Times a discussion of individual judges' political outlook; judge X is fairly liberal, judge Y is a bit more conservative, and so on.

I don't think that we want to encourage this approach to the judiciary. It's fair to say that the non-political role of judges is much more recent than many of us think; until quite recently, the position of the Lord Chief Justice went to the Attorney General, who of course was a political officer of the Government. And we still have now a Law Lord who was a political officer in John Major's government, Lord Rodger. So it is only recently, that we've insulated judges from politics. Just over 100 years ago, the then Prime Minister, Lord Salisbury, said that it was one of the clear conventions of our political system that the party in power chose the judges, and that it was one of the benefits of being in power. He also said that it is better, other things being equal, to have conservative judges, because one judge is almost as good as another, and a conservative is *ipso facto* more likely to be reliable than a liberal. We have moved in a different direction since those days, but the greater scope you give to the judges, the more the politicians will interest themselves in who the judges are and what their political views are.

George Fitzsimmons [BNC old member]: *Do you think that the then existing legislative powers would have been sufficient to cope with the threat of terror after 9/11?*

VB: This is an extremely difficult question to answer. I myself cannot understand why we find it so difficult to admit intelligence evidence, since other countries do that. I believe there has been an inquiry into that matter, and I believe that it is on the whole much better if you can charge people with offenses, rather than introduce new legislation and detention without trial, and so on. I think some of the recent legislation goes further than the measures we took during World War II, when our position was much more dangerous. By 1943 many of the people detained under Defence Regulation 18B were released, including Oswald Mosley, the leader of the British Union of Fascists. Churchill made a famous remark that 'to cast a man into prison without formulating any charge known to the law, and particularly to deny him the judgment of his peers, is in the highest degree odious and is the foundation of all totalitarian government whether Nazi or Communist.' He felt very strongly about that. I think it's much better on the whole to charge people. However, there are no doubt technical reasons why we cannot use intelligence evidence in charging people with an offense.

SB: I think the problem is that the security services are very concerned about information getting into the public domain, as it necessarily will, if the evidence is made known; if not to the public at large, at least to those charged with offences, which it has to be if it is to be a fair trial. It is a matter of balance between the security services not letting out information about their information gathering techniques on the one hand, and the risk of not being able to prosecute people on the other. For my part, my sympathies rather lie in the same direction as Professor Bogdanor's, as I can't see why, at least in some cases, it can't be done.

Mike Yates [BNC old member]: *If Professor Bogdanor is correct that most of the issues that matter to the vast majority of people are resolved through political and social mechanisms, rather than legal ones, and that the human rights agenda within the UK is fundamentally being pushed by people who are at the margins, then isn't this whole issue really going to come down to political grand-standing? Are we ever going to get beyond that? And isn't the conflict between the judiciary and parliament, going to be seen as a largely irrelevant exercise in competition between two elites?*

VB: I think 'grandstanding' is perhaps an unfortunate way of describing our democratic procedures. I think the problem is that many liberals feel that they have lost the battle; that they can't win in the arena of electoral debate, and so they have to rely on the judges to translate liberal principles into unshakeable verities. The point I was making is that many of the problems about rights that we face are connected to the fact that we have become a multicultural society, and there are extremely difficult problems to resolve. It is not a matter of deciding that one side is 100 percent right and the other is 100 percent wrong; it is a question of balancing between different values. The case about choice in education I think is a very good example, because obviously most people think that parents should be able to choose schools for their children, but I also think that we think that it would be a bad thing if schools were 100 percent white. We think there should be a mixture between groups in a multicultural society. So how do we balance those values? I think different people can legitimately differ about that, I don't think there is a right answer, and I also think that judges are not equipped to discover a right, and I don't think they should be. Their role is not that, and I think that by extending it, you damage their position. That was the point I was really concerned to make.

Robin Sharp [BNC old member]: *If we were starting with a tabula rasa and there was no convention on human rights or Universal Declaration, and they had to be negotiated from scratch now, would they be adopted? And, if so, would they be different from the documents we have now?*

KA: Last year we celebrated the 60th anniversary of the universal declaration of human rights and I was frequently asked that question. I think the Universal Declaration is a timeless document. I think it really has withstood the last 60 years. When you go back and look at the language of it, the aspirations that it sets out, the way in which, in the aftermath of the horrors of World War II governments rallied around that, I think what would be great would be to be able to see that kind of commitment again to human rights.

Earlier I touched on the issue of the status of the Human Rights Act in society, but I think that one of the things that we haven't talked about is how we learn about rights. One of things that we do at Amnesty is human rights education. We have influence through the national curriculum on teaching about rights to school groups and university groups, and particularly when I look at the work that we do in Northern Ireland, I think that some of our best work is done in bringing children as young as 8 or 9 together, in what is still a very divided part of the country, to talk about rights in ways which they can understand and find accessible. We have talked about the politicians and the judges, but ordinary people also need to be able to understand these complexities. All too often, it is in the Daily Mail and the Sun newspapers that public discourse about human rights occurs. Politicians, unfortunately, are too often looking over their shoulder at the opinions of the Daily Mail to stand up and defend these issues. But if we did get into schools and into young peoples' discussions about these issues at a young age, then we would create a different discourse on rights; and that would be very good.

Section 2 Introduction: Human Rights and Bioethics

Nicolas Bratza:

I am very privileged to have been invited to chair the discussion on this important topic of Human Rights and Bioethics which is to be led by two of the leading authorities in this area: Professor Sir Ian Kennedy and Professor Julian Savulescu. I feel especially honoured to have been asked since I can claim no expertise in the field of bioethics despite the obvious and growing importance of the subject in the context of the protection of fundamental human rights. It is a surprising fact that of the many thousands of applications which are lodged every year with the European Court of Human Rights, of which I have been a member since 1998, very few touch on the subject of bioethics, let alone raise in substance any of the issues which are likely to be discussed this morning. Nor has the Court ever been requested to give an advisory opinion under Article 29 of the landmark Oviedo Convention on Human Rights and Biomedicine which itself dates back more than ten years; and this despite the close kinship with the Human Rights Convention from which it borrowed several key concepts and terms with the aim of preserving the coherence of the European legal system.

Certainly our Court has been confronted with problems in the field of medical law and practice which have involved those key concepts – the dignity and distinct identity of all human beings; respect for the physical and moral integrity of every person; and the fundamental requirement of free and informed consent to any medical intervention. The case of *Glass v. the United Kingdom*[13] is an example, raising as it did the question under Article 8 of the Convention of the circumstances in which a hospital could impose medical treatment on a child, or withhold that treatment in the sense of deciding not to resuscitate the child, in defiance of the objections of his parents. The case of *Juhnke v. Turkey*[14] provides another example, also under Article 8 of the Convention, in which a gynaecological examination was imposed on a detainee to protect the authorities against allegations of rape in the absence of any request by the applicant and without her free and informed consent.

The Court has also been faced with the difficult ethical, moral and social problems relating to the termination of life. A recent controversial case in Italy, involving the removal of the feeding tube from Eluana Englaro, who had been in an irreversible vegetative state since a serious accident in 1992, reached the Court with a request to apply interim measures to prevent the removal. The case closely resembled the case of *Airedale NHS v. Bland*[15] in the English Courts in the early 1990's where the removal of assisted nutrition and hydration was found to be lawful since it was based on clinical judgment. The request to our Court in the case of Ms. Englaro, however, failed for want of an applicant with standing to make such an application.

Equally controversial was the tragic case of *Pretty v. the United Kingdom*[16] which resulted in a unanimous judgment on the merits and which bears a strong resemblance to the *Purdey* case

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[13] Judgment of 9 March 2004, ECHR 2004-II.
[14] Judgment of 13 May 2008.
[15] [1993] A.C. 789.
[16] Judgment of 29 April 2002, ECHR 2002-III.

decided by the Court of Appeal the day before yesterday [19 February 2009]. At the time of applying to the Court, Mrs Pretty was in the advanced stages of motor neurone disease. She claimed that the blanket prohibition on assisted suicide in English law violated her right to life under Article 2 of the Convention, a right which she unsuccessfully argued included the correlative right to choose when and how to end her life. She claimed also that the right to respect for private life under Article 8 encompassed a right to personal autonomy in the sense of a right to make choices concerning one's own body and to take action to avoid an undignified and distressing end to life. While the Court did not exclude that the law had interfered with the applicant's rights of personal autonomy, it found the interference to be justified in the interest of protecting the weak and vulnerable, who were not able to take informed decisions against action intended to end life. Sir Ian Kennedy has been kind enough to tell me that he intends to explain why the Court's decision in that case was wrong but that he will do so "in appropriately respectful language"!

At the other end of human existence, the Court has studiously, and in my view wisely, avoided taking a stand on the hotly disputed question of when life begins and whether a foetus is a "person" with "a right to life" for the purposes of Article 2 of the Convention. The issue of the adequacy of the legal system in protecting the interests of a foetus which had been destroyed as a result of the negligence of a doctor, was examined by the Court in the case of *Vo v. France*[17]. The Court noted that, at European level, there was no consensus on the nature and status of an embryo or foetus, although they were beginning to receive some protection in the light of scientific progress and the potential consequences of research into genetic engineering, medically assisted procreation and embryo experimentation. The Court found that where, as in the *Vo* case, the life of the foetus was intimately connected with that of the mother and where there was no conflict between the rights of the mother and the father or of the unborn child and the parents, the life of the foetus could be protected through the civil remedies available to her.

Where the interests of the mother and the foetus are in conflict, as in the case of a voluntary termination of pregnancy, the Court has been content to examine whether domestic law is to be considered as striking a fair balance between the woman's interests and the need to ensure the protection of the unborn child (see eg. *Boso v. Italy*[18]). In the case of *Tysiqc v. Poland*[19], it was the inadequacy of the procedural guarantees offered to a woman seeking to enforce her right to a therapeutic abortion which was at the heart of the case.

The right to respect for private life under Article 8 of the Convention has similarly thrown up complex problems of a social and ethical nature – the relationship of a female-to-male transsexual to a child born to his female partner as a result of artificial insemination by a donor (*X, Y and Z v. the United Kingdom*[20]); the right of an adopted applicant, whose mother gave birth to her anonymously and with an undertaking to respect her confidentiality, to discover her origins by tracing her natural mother (*Odièvre v. France*[21]); and, more recently still, the compatibility with Article 8 of the retention by the police of cellular samples of persons charged

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[17] Judgment of 8 July 2004, ECHR 2004-VIII.
[18] Decision of 5 September 2002, ECHR 2002-VII.
[19] Judgment of 20 March 2007, ECHR 2007- .
[20] Judgment of 22 April 1997, *Reports of Judgments and Decisions*, 1997-VI.
[21] Judgment of 13 February 2003, ECHR 2003-III.

with but acquitted of crimes, the Court emphasising when finding a violation of the Convention the legitimate concerns about the potential use of those samples, containing as they do a unique genetic code of vital relevance to the individual (*S. and Marper v. the United Kingdom*[22]).

But for all their complexity and importance, the cases before the Court, with one possible exception, have not touched on what many would see as being the core of the bioethical problems envisaged in the Oviedo Convention and its accompanying Protocols, namely the use and misuse of scientific developments in biology and medicine and, in particular, human genetic testing, cloning or Cell Nuclear Replacement for reproductive or therapeutic purposes, organ and tissue transplantation and biomedical research, including research on foetuses and embryos.

The exception is the case of *Evans v. the United Kingdom*[23], with which I wish to end. While not fitting clearly into any of these categories, the case gave rise to the difficult problem of the continued use of embryos created by IVF treatment where the former male partner and sperm donor withdrew his consent to their implantation and continued storage. The problem for the female applicant was an acute one, since, following the harvesting of her eggs, her ovaries had had to be removed with the consequence that the destruction of the embryos would deprive her of her only opportunity to become a mother biologically related to her child. The majority of the Court rejected her claim that the provisions of domestic law, namely the Human Fertilisation and Embryology Act 1990, which permitted the male partner to withdraw his consent once he had donated his sperm and which required the destruction of the embryos once that consent had been withdrawn, violated her right to respect for private and family life. The majority found that the competing interests were entirely irreconcilable with one another since, if the applicant were permitted to insist on implantation of the embryos, the former partner would be forced to become a father against his will. It was the majority's view that IVF treatment gave rise to sensitive moral and ethical issues against the background of rapidly developing medical and scientific progress and that, in striking the balance in the way that it had by allowing either party to withdraw consent to the moment of implantation, Parliament had not exceeded its margin of appreciation. The minority of the Court took a radically different view, holding that, taking into account the very special medical condition affecting the applicant, her right to decide to become a genetically related parent outweighed the former partner's decision not to become one, particularly having regard to the consent which he had originally given. In the minority's view the absolute or "bright-line" rule in the 1990 Act could not be considered as striking a genuine balance between the competing interests since it rendered empty and meaningless a decision of one of the two parties.

The *Evans* case may perhaps have been the first case confronting the European Court which directly raised in an acute form some of the ethical and social problems resulting from the dramatic advances in medicine and biology which we have witnessed in recent years. It will certainly not be the last. Looking into the crystal –ball, it is by no means impossible that the Court will be confronted with problems concerning the use of stem cells for research and therapeutical purposes; the use of pre-implantation genetic diagnosis to screen out embryos affected by disease or to create a so-called "saviour sibling" with a compatible match for a sick

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[22] Judgment of 4 December 2008, ECHR 2008- .
[23] Judgment of 10 April 2007, ECHR 2007- .

child; the storage and use of gametes taken from those who are unable to consent, as in the domestic case of Mrs. Blood, whose husband was in a coma at the time of removal of his sperm; and the fraught issue of the refusal of life-saving medical treatment, where the interests of an unborn child are directly affected.

If any of these issues were to arise for determination, the Strasbourg Court would at least have the comfort of knowing that, if they emanate from this country, it will be examining the problems with the benefit of the views of judges from the national courts, who may themselves be assisted by the evidence of expert witnesses such as our two distinguished speakers today.

It is on that note that I wish to give the floor to them. Their reputation is such that they need little introduction.

Sir Ian Kennedy is Emeritus Professor of Health, Law, Ethics and Policy at University College London. A long-standing member of the General Medical Council he is a former President of the Centre of Medical Law and Ethics, which he founded in 1978. He is a member of the Ministry of Defence's Advisory Committee on Medical Countermeasures and of the Working Party for Review of the Code of Practice for the Diagnosis of Brain Stem Death. Since 2004 he has also been a Chairman of the Health Commission. Sir Ian has entitled his talk *Values and Rights in Health and Healthcare*.

Julian Savulescu is Professor of Practical Ethics in the University of Oxford. He is also the Director of the Oxford Uehiro Centre for Practical Ethics and of the Programme on Ethics and Biosciences in the James Martin 21st Century School, a Centre which is devoted to research, education and stimulating discussion around ethical issues, particularly those involving technological advancement. He is also the co-author of the book "Medical Ethics and Law: the Core Curriculum". Professor Savulescu will speak on the topic of *The Right to Human Enhancement*.

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Rights and Values in Health and Healthcare

Ian Kennedy
University College London

I am delighted and honoured to be invited to deliver one of this year's Tanner Lectures. Health and healthcare offer a huge canvas on which to sketch out some thoughts. I have chosen to concentrate on a set of issues which occupy one small corner. That said, they are issues which currently pose significant challenges and which will increasingly do so in the future.

PEOPLE AND THEIR STORIES

May I introduce you first to some people and their stories.

First, there is Dan James. He was paralysed from the neck down as a consequence of an accident while playing rugby. Two years after the accident, he travelled to Switzerland, to the organisation called Dignitas[24]. There he died, in circumstances which have come to be known as "assisted suicide". He went to Switzerland, because to assist him to die in the UK would have constituted a crime. He went because he took the view that he had a "right to die" and that this was a fundamental human right, arising from and the necessary corollary of his right to life and his right to a private life, and perhaps the most important right left to him. He went because he also accepted that, should he petition the court in England to recognise his claim to this right, he would be denied.

Secondly, there is Debbie Purdy. She went to court to seek a declaration that if, following the example of Dan James and others, her husband helped her to travel to Switzerland so as to be assisted to die, he would not be charged with the crime of aiding and abetting a suicide. The Court of Appeal rejected her application as a matter of strict law[25]. The Court went on to say, however, that it thought it most unlikely that her husband would be prosecuted on the basis of the facts before them. A typically English fudge, you might say, whereby the letter of the law is kept intact, while what one scholar famously called "under-the-counter deals with death"[26] were made. But underlying the fudge, there was a re-affirmation that the right to respect for private and family life as set out in Article 8 of the European Convention on Human Rights, and incorporated into English law by the Human Rights Act 1998, did not incorporate a right to be assisted by others to die. Thus, the prohibition against aiding and abetting a suicide in section 2 of the Suicide Act 1961 remains law until Parliament decides otherwise.

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[24] See, *The Times*, October 18,2008

[25] R (Purdy) v DPP [2009]WLR (D) 62

[26] D. Daube, "Transplantation: Acceptability of Procedures and the Required Legal Sanctions", in Wolstenholme (ed) <u>Ethics in Medical Progress</u> , Ciba, 1966.

My third story is about people who need some form of organ transplant, for example, a kidney, a liver or a heart, but cannot obtain one because there are not enough organs to meet the need. Organs are largely obtained through voluntary donation and the subsequent concurrence after death of the family. For a variety of reasons, this system does not produce a sufficient number of organs. After many years of trying to make the system work, a task force was charged in 2008 with examining what changes could be made. The Chief Medical officer for England had nailed his colours to the mast[27] by advocating what has come to be known as "presumed consent", whereby a deceased person can be presumed to have agreed to the removal of organs for transplant. Aware of the toll of ill-health and death arising from the current system, and of the economic consequences, the Prime Minister publicly declared himself in favour of "presumed consent"[28]. He was disappointed, therefore, when the task force advised against it[29]. In the view of many, including myself, people were being denied the opportunity to gain access to life-saving, or life-enhancing, treatment for not very persuasive reasons; and, to that extent, their right to life was being denied or put at risk.

Next, I introduce a group of patients who have advanced cancer of the kidney(s). A drug exists and is made available to patients in a number of countries which can extend the life of these patients for some months. The National institute of Health and Clinical Excellence (NICE) has the responsibility of determining what drugs the NHS should purchase for prescription to patients, given its inevitably limited resources. Using its established approach, NICE recommended that the drug in question not be purchased, on the grounds that it did not offer sufficient value for money: if it were prescribed within the NHS, something else of greater value to patients in the NHS would have to be foregone (the opportunity cost). Patients and those supporting them object that NICE's approach, concerned as it is with some idea of the general good, violates the individual right to life of each patient, in the sense that it denies them the chance to live that much longer.

May I now introduce Christopher Reeve, an American known to many through his cinematic role as "Superman". After a riding accident, he was paralysed from the neck down. He dedicated his life thereafter to promoting research into spinal injuries, with a view to developing techniques to restore function. The most fruitful line of enquiry was thought to involve the use of stem cells. To do so calls for research on embryonic stem cells. While such research was being pursued in other parts of the world, it was banned in the United States in institutions in receipt of federal funding. The ban, strongly advocated by President Bush during the eight years of his Presidency, was justified on the grounds of the right to life, not of those who had been injured (including many injured in wars in Iraq and Afghanistan), but of the embryo. Drawing on a particular strain of Christian thinking, the President ruled that the State's duty to preserve the "sanctity of life" extended to include the life of the embryo. Using the embryo for research was, therefore, a wrong which it was the duty of the State to prevent.

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[27] Chief Medical Officer for England, Annual Report on the State of Public Health, Department of Health, 2006
[28] See, *Daily Mail*, Jan. 13, 2008.
[29] Organ Donation Taskforce, The Potential Impact of an opt out system for organ donation in the UK, Department of Health, Nov 17, 2008.

I turn lastly to an elderly person, alone and neglected in a side room in a hospital (it could equally be a nursing home). No-one comes, or they come after a long wait, when she rings the bell. Her food is put on a table where she cannot reach it and later removed, accompanied by a comment (it is not a question) such as "not hungry, then". She has a right to dignity, but her enjoyment of that right is gradually being stripped away. Such a denial of her rights may not appear to count as much as a right to life, but, for her, it is about all she has.

REAL PEOPLE, REAL PROBLEMS

All of these stories are about real people with real, concrete problems. As you will know, there are countless more played out each day up and down the land. While most may not be as dramatic, they are all important: to those caught up in them; and to the analyst who seeks to find a way through the ethics and law which form the backdrop. They include such dilemmas as: does the doctor tell a patient the truth about his condition (and should it be the whole truth or a partial account?) and if so, how should she do so; is an abortion the best solution in this woman's case, indeed, is it ever the right solution; under what circumstances, if any, can a patient's confidences be divulged to others? And so on.

THE NEED FOR ANSWERS

All of these, and there are so many more, are ethical challenges. They are concerned with notions of rights and values[30]. And, most critically, they call for answers. We are not in a game in which the answers depend on the careful application of reason but nothing actually turns on what is decided. We are in the real world of healthcare in which the answer has very real consequences for real people. We are in a world where the views of patients and professionals jostle with each other and with those of the wider community.

THE DISCOURSE OF RIGHTS

We are also in a world where the language of human rights has become the prevailing discourse. In the context of healthcare, are the rights in play those of the patient? The question for us, then, is the extent to which this discourse has, in fact, meant that concern for patients' rights has shaped the way in which decisions about healthcare have been made.

Before going further, I emphasise that I am concerned here with health and healthcare. I remain a cheerleader for the principles of human rights and their application to the world that we live in. But, I wonder aloud in this Lecture whether healthcare is a special case, exposing the weaknesses of recourse to the discourse of human rights in achieving the desired ends for patients.

In the context of healthcare, the discourse of rights might be thought to have been intended to empower patients. The question I seek to explore is whether it has in fact done so. It is clear

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[30] See my earlier Darwin Lecture at Cambridge University, in which I described the coming 21st century as "the century of bioethics", "The Medical Frontier: Emerging Legal and Moral Dilemmas", in Howe (ed), Predictions: 1991 Darwin Lectures, Cambridge University Press, 1992.

that there is enormous symbolic importance in resorting to the rhetoric of rights. But, are its effects limited in fact? Is the cynic right that, in healthcare (whatever may be true in other spheres of life) the patient has been and is empowered only if what the patient wants is acceptable to those with the real power of decision-making? And, if there be any truth in this cynic's view, what is it about healthcare that makes it so? Is it ultimately the intimate relationship of professional and patient, whereby rights have to give way to values, in this case the values of the professional attending the patient?

Why do I sound this equivocal note? Consider two distinct contexts: what I will call "outside the consulting room", and "inside the consulting room".

THE DISCOURSE OF RIGHTS IN TWO CONTEXTS

Outside the consulting room:
What I refer to here is the extent to which the discourse of rights and values is embedded in and informs the general socio-political discussion of healthcare. At least two major problems exist. First, in so far as a concern for rights is a concern for the individual, this sits very uncomfortably with the overarching value of the National Health Service, the vehicle through which healthcare is provided to the large majority of people in the UK. The NHS constitutes a commitment to collectivism, to a welfare state in which the claims of individuals are set against some understanding of the needs of the community. An obvious example is the notion of the waiting list: queuing to receive treatment in the knowledge that there is a limit to the service available at any particular time and that treatment will be allocated on the basis of need, as judged by others, rather than the demand of the individual patient. The reality becomes one in which the individual asserting his rights finds that he has to share his purist space with others.

The second problem is one of language. The discourse of rights, like any discourse, involves interpretation. It must engage with the inherent uncertainty of language and meaning. One way of expressing this is that the position one takes depends on where one starts from.

Here, looking back at some of the stories I referred to at the outset may help. In the case of the group urging NICE to approve the drug which might extend their lives, their appeal was to their right to life. In the case of "presumed consent" to organ transplants, again the appeal was to the right to life. And Debbie Purdy, as did Diane Pretty whose case had been decided seven years previously[31], was asserting a right to autonomy to choose to die as a necessary extension of her right to a private life, as well as (though this was not part of her case before the court) of her right to life and to be free from inhuman and degrading treatment (which is how she saw her current state). To each, the case was open and shut. Yet in each case, the decision went against them. The drug was not made available for prescription on the NHS[32], "presumed consent" was not introduced, and Mrs Purdy did not get her ruling.

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[31] Pretty v United Kingdom (2002) 35 EHHR 1. In particular, Mrs Pretty argued that section 2 of the Suicide Act 1961 violated her right to life under Article 2 of the European Convention on Human Rights as well as her right to a private life under Article 8. Regarding her right under Article 2, she argued that it protected not only the right to life but also the right to choose whether or not to go on living. The court rejected her arguments.
[32] The approach adopted by NICE has since been modified.

Inside the consulting room:

Here I refer to that intimate space occupied by the patient and the professional. Increasingly, healthcare is practised in teams and by teams. But, it is still characterised symbolically and actually by the private and confidential exchanges between the patient (or a proxy) and the professional.

Inside the consulting room, two particular problems are evident. First, the language of rights sits uncomfortably with the historic cultural assumptions of the clinical setting: the deep-rooted idea of the professional's clinical freedom and the emphasis on the professional's duty of care rather than the patient's rights. Secondly, resort to the discourse of patients' rights often provokes a backlash, at least from those who claim to speak for professionals, particularly doctors. What about the rights of the professional? and the duties of the patient? it is urged.

One example of this phenomenon of backlash in practice is the advocacy of sanctions against patients who fail to keep an appointment. The doctor can keep a patient waiting but she must not be kept waiting! Or, translated into the language under review here, the patient has a duty to show up on time but no right to be seen promptly, if there on time. A second example relates to the NHS Constitution, recently promulgated to celebrate the 60th anniversary of the NHS and soon to have statutory force[33]. The Constitution explicitly embraces the language of patients' rights, though the rights are no more than those already set out in law. In the response to the consultation on the Constitution, a significant number of professionals and their organisations argued for additions or amendments to the Constitution to set out explicitly what they referred to as the rights of professionals and the duties of patients.

Against such a background, you may think that it requires a particular kind of patient to be assertive and lay claim to their rights, the more so, given the disequilibrium of power and information between the two sides. You might almost say it would, in fact, be hazardous to do so for all save the card-carrying Guardian reader!

ENTER *CHOICE*

What do I take from this analysis so far? To me, it is obvious that because of the elusive quality of language and the socio-cultural backdrop to the provision of healthcare, simply to point to rights is not going to get very far in empowering patients. Indeed, the more you observe, the more it becomes clear that in understanding, interpreting and applying the discourse of rights, what is happening is that a position is being taken, choices are being made. So, it becomes important to understand what conditions the choices made. What values are at play?

CHOICES AND VALUES

There are, to me, two orders of choices. Some are taken in the spotlight, as it were, in the form of legislation, judicial decision, the actions of organisations, or the reports of the media. In such cases, we can usually see more clearly why certain choices have been made. In the spotlight, it is clear that attempts to reflect the aim of empowering patients, the fundamental goal of an approach based on human rights, are made. Individualism and self-determination are given

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[33] Health Bill, 2009

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prominence. Government talks of a "patient-led NHS"[34] and draws up a Constitution for the NHS.

But, even in this context, in the spotlight, there is clearly tension between the notion of an individual's right to X on the one hand, and other claims and the claims of others. The choice which is made depends not on the assertion of any particular right but on what are seen to be the relevant values in play.

So now we are in the territory of values. Admittedly, the choice may reflect values which are explicitly rights-respecting values. I have in mind such values as truthfulness, honesty, equality, or respect. But even these can, of course, work as much against as for any particular individual in any particular situation of tension between them and another. But, more tellingly, the values at play are just as likely, as we have seen, to be those of the "common good", or the needs of the wider society, or reflect political considerations, or be those of a particular group able to exert power. All of these may work more obviously against respect for rights and the empowerment and self-determination of the individual.

The stories that I began with offer illustrations of the resort to values which in effect, negated the reliance on the assertion of their rights by individuals and groups. Dan James, the young rugby player left for Switzerland, aware that respect for his rights as he saw them would founder before some sense of the collective good in upholding on assisting death, *whatever the circumstances*. Diane Pretty, who set the scene for the later case of Debbie Purdy, took her legal case all the way to the European Court of Human Rights. She was, as she saw it, asserting her right to self determination, albeit she was asking that it be asserted through a proxy on her behalf, i.e., that she be helped to die. But her claim of self-determination was trumped by the Court's resort to the social value of paternalism. She was, the Court held, "vulnerable", or more accurately, belonged to a class of people who by virtue of their condition were vulnerable (it was accepted that she herself could not be regarded as vulnerable). And, being vulnerable, she and those like her, the court went on, needed protection from those who would exploit them and, perhaps, bring even about their deaths without their truly wishing it. Diane Pretty had, therefore, to be protected from herself; protected from the exercise of what she saw as her right.

The difficulty with the Court's approach is profound. Preferring, for unstated reasons, the value of preserving life over any individual's claim to have her life ended (in carefully constrained circumstances, it should be added, and set about with safeguards) the Court took two steps. First, Diane Pretty was, or was made to, stand for the class of the "vulnerable". But, such a view ignores the fact that people are not themselves (are not *intrinsically*) vulnerable. It is society, its values and the way it organises itself that makes people vulnerable. They are made vulnerable because their rights are not being respected, for whatever reason. Then, secondly, the Court held that being "vulnerable" she needed the law's protection. But, if the first proposition is accepted, what this second step translates as is the following: we will not protect your right to self-determination, because we have already failed to protect your rights more generally, thereby rendering you vulnerable, and, therefore, susceptible to our preferred choice - paternalism.

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[34] "Creating a patient-led NHS", Department of Health, 2005.

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In the case of the drug for advanced kidney cancer, NICE decided against approving it for prescription through the NHS. It did so because it was created to allocate scarce resources (there will always be limits to what can be afforded). It does so in accordance with a transparent analysis of the clinical effectiveness and cost-effectiveness of a drug, a process that also calculates the opportunity cost entailed in approval. Had the patients' group prevailed, a system based on the value of achieving the greatest benefit for the greatest number would have been under challenge from a system based on individual rights, according to which, if a drug exists and a patient can show that she might benefit from it, it is her right to receive it. This is not the current system. At present, the choice is made not on assertions of a right to life, but on the basis of values captured in the notion of the common good.

What about the ban (since lifted by President Obama) on research on embryonic stem cells? The prevailing view is that such research holds out real prospects of being able to respond therapeutically to paralyzing spinal injuries, from which recovery is currently not possible. In terms of rights, the argument was advanced that such research should take place and to ban it infringed the right to life of those disabled by spinal injuries. The ban, however, grew out of a different perspective of the world. It grew out of the religious beliefs and values of a powerful minority who had the ear of President Bush. These values have it that life is sacred, and must be protected by the state, from the moment of conception. To take stem cells from an embryo, thereby ending its existence, is, on this view, a sin to be denounced. Faced with this choice, the President sided with the Christian right. Another way of framing the objection is that the embryo has a right to life. If this position is taken, despite the well-rehearsed analytical counter-arguments[35], the question becomes one of preferring one claimed right over another. And, the choice as to which claims should prevail is resolved by reference to values, in this case those of the Christian right.

If we turn to "presumed consent", here the arguments mounted against introducing this approach were not couched in terms of rights, or even overtly of values. Instead, "presumed consent" was rejected to a very large extent because of the exercise of influence of a powerful group, specialists in intensive care. Clearly, a range of arguments was advanced, including comparisons with other countries which had and had not adopted "presumed consent". But, in my view, the views of the intensivists were crucial. Their values prevailed. They claimed that concern for the common good, as they saw it, should prevail over the claim of a patient to an organ from a dead body. Lying behind this claim, however, were another set of values, those of this particular group of professionals. It became clear that they did not want to operate a system of "presumed consent" because of the tensions and difficulties that would arise in dealing with grieving relatives. Better and easier to operate a system which gave the relatives a veto over obtaining organs for transplant than having to advise that the organs would be removed on the basis of "presumed consent". Intensivists argued that the latter system "... might erode public confidence". So it might, but arguably, starting from a different position, they could have said that they recognise the challenge regarding the public's confidence and would work to overcome it. It was also said that "Clinicians were anxious about the potential negative implications. ... [It (presumed consent)] could threaten the trust that patients and their families have to have in them". Notice the words "potential" and "could". By contrast, by

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[35] See, eg, "The Moral Status of the Embryo", in Kennedy, <u>Treat Me Right</u>, OUP, 1992.

retaining the current system, many patients will (not may) die for lack of a transplant. But, the choice was made to prefer the position advanced by the intensivists. The discourse of rights again is trumped by recourse to some set of values, described pre-emptively as the common good.

My final story was about the right to dignity. Here, there was no disagreement about the right and the values underlying it. The problem lay in getting the right respected. The elderly woman was a prisoner in a system which did not appear to place her right to dignified care on the same level as other values. She was trumped by concerns for such values as cost-effectiveness in planning levels of staff, or efficiency in terms of who received most attention: the ill needing treatment taking precedence over the bed-bound, lonely, hungry woman who does not need any particular treatment and is not going anywhere. Again, the discourse of rights fails to empower the patient because the choice is made to pay it lip-service only, in the face of what are seen to be more pressing claims.

Of course, these tensions between rights and values in the context of hard choices are well-recognised. In healthcare, although the language of rights is gaining ascendancy, they are never far away, nor in this icon of collectivism, the NHS, is resort to the values of the common good or the politically pragmatic. Consider the NHS Constitution: in its section on "NHS Values" there is an instructive example of an attempt to square the circle, to have your cake (rights) and eat it (choices based on the common good). It reads:

"Everyone counts. [Is this individualism, a commitment to rights?] We use our resources for the benefit of the whole community [enter the common good] and make sure that nobody is excluded or left behind. ["nobody"? Are we back to individualism?] We accept that some people need more help, that difficult decisions have to be taken [so far so good, but on what basis?] – and that when we waste resources we waste others' opportunities."

You will remember that I said that there are two orders of choices. The second set of choices are those made away from the spotlight, in the everyday practice of healthcare. How are choices made here? What values are at play, what conditions the choices made, the position taken? Again, I offer what is, perhaps, a jaundiced view. Let us assume that patients may in fact make choices, taking seriously for a moment the rhetoric of a "patient-led NHS" or "personalised care". Let us assume that the patient recognises the notion, if not of rights, then at least that they have a choice. It is my view that even in such circumstances, the disequilibrium of power and information between the patient on the one side and the professional on the other profoundly affects what in fact will be decided. This imbalance in power, intrinsic in any client-professional relationship, but much more pronounced in the case of healthcare, given that the patient is or may be ill; will condition what choice is made. So will the way in which any choice, if offered or raised, is put to the patient. Moreover, and crucially, the values at play in conditioning the choice are likely to be those of the professional. He may take on what superficially appears to be the role of a neutral guide. In fact, he is very likely to proceed from a position of paternalism, benign perhaps, but paternalistic nonetheless. The consequence is that, if the patient exercises any choice, she will do so on terms that the professional's blessing is sought or even required. Whose choice is it by then? What values are at play? Certainly not those of a patient's self-determination and empowerment.

WHITHER RIGHTS

On this view, which I have admitted may be jaundiced, but is born of long years of experience, we have moved a long way from the idea of patients' rights, travelling through the land of choices, to the values underpinning those choices. Indeed, we are almost at the point where empowerment and self-determination, which lie behind those rights, become not something that is the birthright of all patients, but a status that the professional endows (or does not) on the patient.

The intrinsic uncertainty of the discourse of rights, the choices it calls for, the conflicting values at play, the context in which choices are made and the values brought to bear, all combine to challenge the role that rights-based language may play and does play in healthcare. Beyond the considerable symbolic significance of the rhetoric, you are left with the question whether talk of rights greatly contributes to the empowerment of patients.

BACK TO THE REAL WORLD OF HEALTHCARE

So, bringing all the threads together, where does this leave us in the real world of healthcare? Well, it does look as if it is a special case as regards the actual implementation, rather than the rhetorical acceptance, of human rights. Admittedly, there are some areas of healthcare that have attracted laws, or judicial decisions, or guidance which pronounce on what patients can expect from healthcare. Patients' rights may be mentioned, but as we have seen, they are then often argued-away by reference to competing claims and values. As far as they go, these laws and other public utterances do, at least, provide us with some sort of landmarks. At the same time, there are areas of healthcare that attract limited attention and where there are few landmarks: areas such as the determination of death, the practice of mass vaccination, or the sharing of medical records across professional groups. These seem to pass without great attention even though human rights are also significantly engaged.

But, even when there are landmarks along the way which make reference to, while perhaps not actually giving precedence to patients' human rights, everyday practice (which is what we are all interested in) works, on my analysis, in a different way. What happens in that intimate space between the patient and the professional is decided by reference to two factors above all. The first is the ability of the patient to be heard. The second is the choice made by the professional, reflecting the professional's values (while, perhaps, considering those of the patient). What becomes crucial, then, is the professional's moral compass; his or her understanding of whatever landmarks exist, his or her personal moral hinterland. Rights, the rights of patients, by this time are firmly in the back seat.

HOW TO RESPOND?

So, how do I answer the question I posed at the outset: how should we respond to the kind of dilemmas I set out; and the myriad others?

At the level of the general, it may be helpful to separate what might be called the "softer", less politically-charged rights such as dignity and look to various administrative and institutional mechanisms to ensure that these rights are respected. Independent regulatory bodies, such as

the recently created Care Quality Commission, explicitly committed to safeguarding the rights of patients, particularly those less able to fend for themselves, can be a powerful force for patients. They can seek to ensure that those charged with the care of patients pay due respect to patients' rights. So can those bodies charged with overseeing the competence and standards of the various professions. As regards the "harder", often politicised issues, such as rights in the context of allocating resources, or of a dissonant criminal law, whereby people are exposed to criminal liability if not prepared to be protected from themselves, perhaps some national body, a Council of Bioethics could be established[36]. This would allow the ventilation of points of view and guidance from a body, acknowledged to be independent of sectarian influences. Such a body exists in most developed countries, but Government has steadfastly resisted the call to set one up in the UK. The reasons are not clear but probably reflect an unwillingness on the part of Government to relinquish power in the highly political environment of healthcare and a rather conservative professional response, nervous at being "told what to do" by "outsiders".

As for everyday practice, the challenge is one of education. Professionals should be educated, trained and sensitised in moral reasoning. They should be made aware from the outset that healthcare is a moral enterprise, in which the realms of right and wrong, fair and unfair co-exist with the world of science and technology. They should understand and become comfortable with the notion of patients having rights. After all, the National Health Service is supposed to serve patients, albeit that there has never been a strong tradition of a kind of service in which it is the patient who sets the terms, rather than the professional. This needs to change if the idea of patients' rights and such edicts as the NHS Constitution are to have any real meaning.

This process of education and sensitisation should be repeated regularly throughout their professional lives. Professionals should not, as is too often the case, be sent out into the world of practice with a set of stock answers, or worse, unanalysed prejudices. Moreover, in their dealings with patients, they should be encouraged to make their values explicit, while recognising the rights of their patients. Therein lies the opportunity for real engagement between patient and professional. And to those who say this is far too highfalutin' an approach for a busy surgery on a Thursday morning, the answer is that it can be done, indeed, is already done by the better professionals; and if done, makes healthcare more successful, not least by being more respectful of patients.

I should close, however, with a warning. Education, moral analysis, debate and discussion are all very well, but they are abstract. Talk of rights and values can seem to many professionals as being remote from the untidy, complex reality of humanity which they daily confront. To enter the operational DNA of professionals these notions have to be connected to a world recognised by them. And, in that real world, healthcare professionals often struggle to make any relevant connection between abstract reasoning and the human condition before them.

I leave you with the following, taken from a radio programme that I made in August, 1977[37].

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[36] There is, of course, the Nuffield Council on Bioethics, but it and its expression of view have no formal standing.
[37] And see, Kennedy, Treat Me Right. OUP, 1992, pp 308-310.

Dr. Carrington (not his real name) was a psychiatrist in Southern California. He had a progressive lung disease. He had become permanently dependent on a respirator. After consistently struggling to stay alive, he decided that he wanted to die. He was assessed by his psychiatrist and judged to be lucid and competent to make such a decision. He asked for the respirator to be turned off. His physician said that it would be easier for Dr. Carrington and for him if, rather than do that, he injected him with a high dose of morphine and gradually turned the respirator down. He did this and Dr. Carrington died.

Here is part of my interview with the physician:

Kennedy: "Do you think you behaved entirely ethically in your treatment of Dr. Carrington?"

Physician: "Well … I'm not sure. I've gotten away from … Let me put this in a less than shocking way…gotten away from thinking of everything in so-called ethical terms, because it confuses me. I know that giving a man on a ventilator morphine in high doses, enough to cause general anaesthesia, is risking his life, and it distracts me to think about whether or not it's ethical. I felt like there was a … a more concrete and unifying decision, that … that decision was what are Dr. Carrington's chances of being alive in any sense whatsoever, in having any human experiences, away from the hospital and away from this ventilator? And once that decision was made, then I felt that there was sort of humane behaviour was required."

Kennedy: "What would you say to the commentator who said, 'My, here's another case of the doctor playing God'?"

Physician: "Well … you see, I don't have a concept of God in that sense. I feel like the situation in which Carrington was in is what God does and that I'm part of that situation, and that he was going to die, and that there was nothing that I could do about it. And as a matter of fact, what got Carrington and myself to that situation on the last day was my giving up trying to play God, and I'd really reject that. I feel that sometimes I do try to play God when I do try and keep people alive beyond reasonable times.. But he was to die. I don't think there is any question about that, and I feel like we gave him a good shot at staying alive. I think he got good medical care and was kept comfortable, and God decided he should die, and I couldn't prevent it."

Kennedy: "What would you say to the lawyer who would analyse what you did and what many other doctors, I'm sure, do every day, and would say, 'This looks like homicide – killing by injection'. What would you say to that?"

Physician: "I could make no comment."

Kennedy: "Do you think it would be an insensitive response?"

Physician: "I think it's a response that has nothing to do with my interaction with Carrington. I think it's looking at a single event out of context. I think his comment is true for what he has to say, in the sense that, you know – I always conceive of interactions with lawyers as answering questions, and that's not a question. All that is, is a comment. And I think his comment should stand for what it is. It's not an important comment as far as I'm concerned."

Kennedy: "But don't you feel uncomfortable, you as a member of the medical profession, don't you feel uncomfortable if there exists in the wider world a set of rules which would condemn as one of the most heinous crimes that which you regard as the most humane of conduct?"

Physician: "It's a really uncomfortable thing. It's terribly uncomfortable to be trapped in this situation in the first place. The second place is that probably one of the reasons that physicians feel threatened by these kind of laws is that, without the law, I can cruise along and maintain my patients' comfort and my sanity to the best of my ability. When the law starts coming along, it brings in another factor that has to be contended with. I trust myself. Now the legal system always thinks that there are people around who shouldn't be trusted, and I think that's right, and that's what there's laws for. Homicide isn't far away from that. But this was not a circumstance of homicide. That's all there is to it. Sure, injecting high doses of morphine, or low doses of morphine in a patient like this, contributes to his demise, but so does turning off the respirator, so I don't think there's any difference really."

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The Right to Human Enhancement

Julian Savulescu
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It is my intention to argue today that there is a basic human right to human enhancement. The topic of this series of Tanner Lectures are the big challenges of the 21st Century: the 21st Century, in my view, is going to be a time of revolution, particularly in our understanding of biology and neuroscience and what they tell us about our human nature and about our internal constraints—the limitations that we face as a result of our own biology and our own psychology—and how they prevent us from obtaining what we want and leading a good life.

We are already down the path of engaging in various forms of human enhancement: consider cosmetic surgery, the use of caffeine and of drugs such as Viagra. But we are already in a position to undergo much more radical enhancements than those: for example, scientist have created a fluorescent rabbit by introducing a gene from a jellyfish, thereby showing that it is possible to transfer genes successfully from one species to another. One step further: a fluorescent human embryo has been created by introducing the same gene into a human embryo. If it had developed, it would have been a fluorescent human being just like the rabbit. This is safe and possible: it could be done today.

A further example is at hand: scientists have changed part of the glucose cycle in the mouse, creating a supermouse that can run 5km at the speed of 20 metres per minute; a normal mouse can only run 400 metres. As a result of this small genetic change, supermouse lives much longer, reproduces until the equivalent of 80 years of age, has 10% body fat, lower cholesterol levels, and is much healthier. Scientists did this for very good reasons: we could do the same thing in the human being today, since we have the same glucose cycle as the mouse.

Human cognitive capacity is limited by the size of the human brain, which has various constraints placed upon it because of our evolutionary history. We could, in the near future, engineer humans with much larger brains for the use of science. Even more radical interventions are possible: scientists in the UK can now create human/non-human chimeras or hybrids as the source of embryonic stem cells. We are facing a time when biology really is putting unprecedented powers into our own hands.

So the question of human enhancement is not a science fiction line any more: very soon we will see very significant interventions. One of the most promising current interventions is a drug called *Modafenil*, created a few years ago as a treatment for narcolepsy or excessive sleepiness, but that has now been found to improve working memory and executive function in normal people. Many American college students routinely use it. The drug, or at least one version of it, is worth over a billion dollars today. We estimate that it will be worth 7 to 10 billion in 10 years

time. A survey last year showed that about one fifth of academics regularly use this or other drugs to improve concentration, memory and so on.

There is a long list of human cognitive enhancements, things that have already been shown to improve human cognitive performance in various ways. Once we start to crack our understanding of memory, treatments for memory loss in old age, in Alzheimer's disease, will also improve normal human memory. We have already achieved this in animal models: we have a Doogiemouse with much better memory, we have mice that will live much longer. We have been able to engineer monogamy in one species of vole, the meadow vole, which is characteristically polygamous. Scientists have discovered the same gene in human beings and men with two copies of one version of it have much many more relationships and, as a result, their partners express dissatisfaction. It is quite possible that we have the same genetic basis in our sexual behaviour and the variance of it as the vole does. Equally, we have been able to engineer hardworking monkeys, *Schwartzenegger* mice with huge muscles, mice resistant to cancer, or capable of running much further. I do not intend to argue that these are good things in themselves, but merely that we will soon be able to do the same in humans.

In the context of my work on the concept of disability I have come up with a new, welfarist definition of disability. On the view that I take, a disability is some set of physical or psychological properties of a person that tend to reduce the well being of that individual in any given set of natural and social circumstances. There are ways to correct disabilities or to improve human wellbeing: through most of human history, we have changed the natural environment, social practices, law and so on. In the last 50 years, we have attempted to give people psychotherapy and psychotropic drugs, but we are now on the cusp of intervening people's psychology in a fundamental way. We often hear resistance to this idea in the slogan 'change society, not people'; some groups keep a social constructivist definition of disability. They say that disability is socially constructed. A full explanation is beyond the scope of this talk, but my own view is that we should consider all the avenues and all the opportunities for correcting decrements in wellbeing. We simply have to take the course of action that is the safest, most likely to be successful.

I am now going to give you some arguments in support of the view that there may be quite fundamental interventions that we probably should be undertaking. One of the key features of human beings is that we are not all equal: when people say that we are equal, they mean that we should be treated equally. But, of course, at a biological level we are not all equal at all. You are familiar with the differences in height, but indeed all abilities and disabilities are distributed differently across people.

Let us consider the IQ curve, because it is a well-documented source of inequality. Roughly about 20% of people have an IQ of less than 90. These people are normal—if you have an IQ of less than 70, you are said to have a disease or a medical disability and you have the opportunity for medical treatment, but if you are over 70 you are normal. Yet about 20% of people lie between 70 and 90. I will go on to argue that those people are severely compromised in today's society, since you need an IQ of 90 to, e.g., fill in a tax return in the US. You need about 120 to enter university.

Let us consider some very controversial research: a number of researchers have predicted that even if you could just improve people's cognitive performance by the equivalent of 3 IQ points, you would reduce poverty by 25%, males in jail by 25%, and welfare recipiency by 20%. That is a very considerable social impact. Indeed, for every IQ point you increase in the population, you increase GDP by half a percent and you add 50 billion dollars to the US economy. What we saw in the internet revolution was a form of external cognitive enhancement, the ability to interact and interlink minds, but you could create a revolution of the same magnitude through internal modifications.

There are thus well-documented correlations between intelligence and income, particularly at the low ends of the IQ curve. There is a range of social and economic misfortunes that those with a lower IQ face. Many people think that human or cognitive enhancement will create inequalities, and it may. But it may also be a way of addressing very fundamental inequalities, and indeed I will argue that it may be providing people with a basic human right.

All of you will be familiar with the concept of iodized salt: most of our salt has added iodine, and yet one in 3 people around the world do not get enough iodine. This is the largest cause of mental slowness. These people may have an IQ of about 70, but if you fail to get enough iodine during pregnancy your child will have an IQ 10 to 15 points lower. Around a billion IQ points are lost around the world in this way: a huge lost of mental capital, especially since it only costs 2-3 cents per person per year to iodize salt. Now this may not be correcting a disease; rather, it may be simply enhancing these people within a normal range, but it truly is a fundamental human right to have access to that sort of intervention.

There are many other states of our psychology or biology that can frustrate our opportunities in life. In 1960, a famous set of experiments was conducted with 4 year old children: a researcher placed a marshmallow in front of the children and told them that if they did not eat the marshmallow while they were left alone in the room, they would be given two afterwards. When the researcher left the children alone, some predictably ate the sweet immediately, while others developed strategies to control impulses and delay gratification. When the researcher followed these children up, 10 years later, he found that those who were able to resist had more friends, better academic performance and more motivation to succeed. At the very low end, poor impulse control very highly correlates with poverty and imprisonment. So it is quite plausible to say that even people within the normal range at the lower end of the spectrum have a form of disability that fundamentally affects how their lives develop. We will at one point understand the biology behind it, and we will able to intervene to enhance self-control. Some people have talked about all-purpose goods, things that advance people's lives whatever their goals: intelligence, memory, self-discipline and so on. We may well understand through behavioural genetics and other areas of biology the underpinnings of these states of ourselves.

Antisocial personality disorder is five times more common in relatives, and adoption and twin studies show that there is a very strong genetic and biological influence in the development of this disorder. The neuroscience behind this is beyond the remit of this talk, but we are beginning to understand the biological underpinnings of how people empathize with each other, and this may be situated in a group of neurons or nerve cells called 'mirror neurons' that mirror actions of other people as if they were our own. This may help us understand why children with autism or antisocial personality disorder fail to empathize with the actions of other people.

Equally, there is evidence that one gene mutation in an area of the X chromosome that cares for an area of the brain is abnormal in criminals. There was one study in Holland that found clear correlation within one family, but when researchers in New Zealand repeated this study and coupled it with social deprivation, they found a very high correlation between this mutation and social depravation, on the one hand, and future criminal behaviour, on the other. Clearly, engaging in criminal behaviour and ending up in jail is something that makes your life go worse: as a consequence, it is plausible to argue that such genetic change, which may be a part of the normal spectrum, is a form of genetic or biological disability.

Even human cooperation, the ability to trust and cooperate, may be on offer as something that we are able to affect. Serotonin is a neurotransmitter in the brain; we have found lower levels of this substance in people who behave in an aggressive manner and an inverse relationship between this function and impulsive and aggressive behaviour. Depleting serotonin leads to more aggressive behaviour and indeed substances that boost up serotonin reduce such behaviour.

Oxytocin is another hormone that is released by women naturally during pregnancy, and it has been shown to improve trust and bonding between humans and human cooperation substantially. So we are starting to understand even the basis of fundamental aspects of our life such as how we fall in love, and how we behave as sexual animals. All animals go through the three phases of love: lust, attraction, and attachment. Lust is the fixation on another person, usually of the opposite sex and capable of reproducing. Attraction is falling in love with the particular characteristics of that individual and attachment is the bonding that enables couples to stay together for long enough to raise children. Each of these phases has different biological underpinnings that are capable of manipulation.

Now that I have given you some background information, I will go on to explain why I think we have a right to human enhancement. While I am sure that people do not have a right to a fluorescent cat, or to the use of Viagra to treat the impotence that normally follows older age, I think that significant enhancements for the worst-off in order to bring about sufficient levels of wellbeing are really a fundamental human right. This is both a derivative right and an intrinsic right. It is an intrinsic right to a decent level of wellbeing, a minimally decent life. But it is also a derivative right: if you look through some of the declarations on human rights, you will see that there are a number of articles in all of them that would be profoundly affected by biology and psychology. Most strikingly, everyone has a right to work. It may be argued that if you do not have the intelligence or the intellectual ability to compete in modern society today, that right is never going to be realized. Furthermore, everyone has a right to education. We may be able to enhance significantly the educability of our children through biological interventions: there is research showing that simply giving choline (a substance that occurs naturally in eggs) to pregnant women increases the IQ of their offspring. If everyone has a right to an education, and the outcome is the ability to gain knowledge, we surely have a right to the biological interventions that can provide that. Everyone has a right to the enjoyment of the highest standard of physical and mental health, and I am going to argue that that implies a right to human enhancement, not only as a derivative right, but also as a basic human right.

Here is the argument: there are social impediments to good life (educational structures, practices and law, social discrimination and so on), and these surely must be corrected. But we also face biological limitations to how well our lives can go. Capabilities and disabilities are not distributed equally, and some people get a hand of very short straws. Some normal people are so disabled by their biology or psychology that they find significant or insurmountable obstacles, and these people have a right to have these obstacles removed. This is not merely a negative right, but also a positive one. It is also a political as well as moral right. Whether or not everyone has a right to have significant improvements in their memory is a further question, in my opinion. But at least those in the lower end of the spectrum have as much of a claim to that as to a basic level of education.

Let me present you with three reasons why you should think that we have a basic right to human enhancement: the first one is that it seems as if choosing not to enhance someone is wrong. Imagine that parents have a child with a normal IQ of 110, but it has a slight metabolic abnormality and it needs a vitamin. The parents do not provide this vitamin and the IQ drops to 80, which is still within the normal range. Most of us would have the intuition that this is wrong, absent some good reason such as the fact that the vitamin is expensive, or that the parents have other priorities that are more pressing. Now imagine that parents in this case have a child with an IQ of 80 and the same vitamin could raise it to 110. If you think that having a higher IQ is better, what these people do in failing to do that intervention is just the same as in the earlier example, and it is equally wrong. The outcome is exactly the same and, absent some good reason, in failing to introduce the vitamin those parents are acting wrongly.

If we substitute other biological interventions, such as a drugs or even genetic manipulation, the only difference is that these may be more dangerous. But in so far as they are safe, we have a straightforward argument that it is wrong to fail to intervene to enhance people's biological and psychological abilities.

The second argument is that we are all in favour of better education for our children, just as we are all in favour of access to computing or information technology. People are trying to create a $100 computer so that everyone can access these. These interventions do not act mysteriously, but they actually change our brains. A recent experiment has shown that rats in a stimulating environment show the same brain changes and resistance to dementia as rats that have been given the drug Prozac. These changes are even being shown to be heritable: you can change the environment of rats in a way that causes their brain to change, and this is passed on to the next generation. I believe that there is parity, in the context of education, between internal cognitive enhancement, such as biological intervention, and external enhancement such as computers.

The third and last argument is that we often hear (and indeed, it is reflected in some of the declarations of human rights) that people have a right to a basic level of healthcare. Yet health is not an intrinsic, but an instrumental good. It is good because it allows us to achieve the sort of things that we want and to be happy. The goodness of health is what drives the moral obligation to treat and prevent disease but it is its impact on human wellbeing that generates its priority. A disease that has very little impact on someone's wellbeing is a very low priority, because what matters is how profound its impact on human wellbeing is. If wellbeing is what ultimately matters, it is not just disease that affects our wellbeing, but also states of our biology and psychology within a normal spectrum. So enhancement is not just a good thing, but can be

considered a basic human right, and just as we expect governments to intervene to provide a basic level of education and health care, it may be soon in the horizon that we expect governments to provide a basic level of human enhancement also, especially when those enhancements benefit significantly those who are worst off.

Incidentally, the US military is spending a lot of money on this topic. They make the claim that even a small enhancement of cognitive capacity in these individuals will probably have the same impact on the world economy as that of the internet. In short, I do not think that this project is too expensive or too exotic. As I said earlier, 3 IQ points would be expected to increase GDP by 1.5%, and that would more than pay for itself. As a result, one of the greatest priorities in this century, in my opinion, is not just engaging in further research to prolong life perhaps radically, but also to enhance life. We will have the necessary techniques to do so, and today I have argued that such enhancement should not be considered a luxury. Instead, it should be recognized as both a basic and a derivative human right to have access to interventions that arise from our scientific understanding of our biology and psychology and that increase human wellbeing, at least for those whose level of wellbeing falls below what we judge to be a sufficient level—but perhaps even for everyone. Furthermore, that right should be on a par with the right to education, healthcare and life. The most basic human interest is to have a good life and our own biology and psychology, as we are now beginning to understand, profoundly affect that; in some cases, they may even pose a significant obstacle to a minimally decent life.

Human Rights Section 2: General Discussion

NB: Nicolas Bratza, Chair
IK: Ian Kennedy
JS: Julian Savulescu

Roger Martin [Chairman of the Optimum Population Trust**]:** One thing you have not referred to in either of your fascinating talks is the issue of reproductive rights in general, rather than certain sub-aspects of them. Just two weeks ago, the Government's Chief Environmental Adviser was quoted in the papers as saying that 'to have more than two children is irresponsible' because it ratchets up the human population, thereby ratcheting up environmental degradation and ratcheting down the share that everybody else has of finite and dwindling natural resources. I wonder if you have any views, looking ahead in the 21st century, on whether this will loom ever larger and, if so, how democracies (as opposed to coercive systems) will have to deal with the problem of ever-growing human numbers impacting ever more strongly on the commons. I have seen the argument made that the medieval law of commons, which limits the number of animals any commoner may graze on a common public space, is simply common sense and should be applied to our species. One cannot help seeing a certain rationality in this argument, but the problems it raises are certainly difficult. Thank you

JS: This is indeed an interesting issue. I could have spoken about the possibility of radical prolongation of human life: There is probably no biological reason why we could not stop human aging. The animal models I have considered earlier live longer. Experts believe there are no fundamental biological obstacles to radically prolonging life. Indeed, a few weeks ago, there was a jellyfish discovered that rejuvenates itself and is it potentially immortal. So decisions that will have to be made include: when we say that people have a right to life, how long do they have a right to live for? And also, how many people should there be?

I think the reason I did not focus on this topic is that I do not have the answers, but I do believe these are fundamental and very profound questions, which we will have to face this century.

IK: The European Convention of Human Rights does, of course, recognize the right to found a family. And yet, it is questionable whether that right is enjoyed: the population growth in most of Western Europe is less than 2%. In this country there is currently a blip, as I understand it, due to waves of immigration from Eastern Europe. I do not think that figures are that dramatic that you can draw conclusions yet.

Putting that aside for a moment, this is also an interesting question as to where the rhetoric of rights is going to take you. This sort of issue is bound to turn quickly into a conflict of us against them, a matter that is dealt with against the background of politics and international relations. The rights discourse is not going to be used then. The question you ask, in a sense, has to be transferred into another arena of discourse to be understood and then addressed. The same

applies to problems such as water or fuel access, or even the availability of genetic techniques to the rich but not the poor.

Ezequiel Ben Ari [Director of Medical Research Council, France]: This is a question for Professor Savulescu: I was mildly puzzled by your lecture because a few things were not clear to me. There is no doubt that giving iodine to pregnant ladies, or other supplements, is obviously important. On the other hand, the genetic part of your argument is more debatable. I am much less optimistic because we know now that many of the things that we thought we understood about genetics have been proven false. The human brain is far more complicated—I could talk, for example, about disorders that were diagnosed as genetic until we realized the cause must lie somewhere else. In the case of disorders such as SLA and others, one can encounter the same disease being caused by environmental or by genetic factors. The influence of these two kinds of factors is extremely complicated.

JS: You may be correct in saying that genetics are far more complicated than this. Maybe we will not crack any genetic nuts this century: only time will tell. But what seems clear to me is that we will develop drug molecules and other sorts of interventions that will improve humans. We have already done this in various ways. It has been done very effectively in terms of physical performance, and I believe that we will develop drugs, at least, that improve human cognitive performance.

I did not intend to advocate genetic intervention necessarily. What I was advocating were targeted science-based interventions that affect our performance, that will probably arise in the first instance as an off shoot of developing treatments for diseases. I think there is a lot more optimism for the development of that sort of interventions, even if we do not make great progress at the genetic level. That does not really matter; what does is whether you have an intervention, what its risk/benefit profile is, how expensive it is and who should get it. And I think that we will start developing those sorts of interventions, but how quickly science progresses is, in any case, very difficult to predict. I did not mean to suggest that we will start having genetic interventions all around the world, at least during this century. But we will, on the basis of our increasing understanding of biology, be able to develop some sort of intervention that is not focused on changing society, on providing more security or education, but that actually operates at a biological level. I do not think it is morally relevant what that biological level is.

David Turner [BNC old member]: I have a couple of remarks addressed to Professor Savulescu. The first one is about the connection between IQ and poverty. I think the suggestion that most people are poor because they have a lower IQ is fairly outrageous. For example, the per capita GDP of Israel is 24 times higher than that of the Gaza strip. Yet I do not think anyone thinks that the right way to fix this imbalance is to give vitamins to people in the Gaza strip. If it's true, and it may be, that people who are poor have on average a lower IQ, this may be due to worse nutrition, worse education and so on. A further example: we have all come across wealthy people who appear remarkably stupid. Notwithstanding this, they are in no danger of poverty. My second point is that the notion of changing human biology seems dangerous and may alarm people. The danger is that biological changes will be introduced by authoritarian regimes to make citizens more obedient. If you remember, this was the fear of the Unabomber. His

manifesto focused on one claim: that as science advances, it will become possible to change human nature to make us more docile. He was so worried about this that he conceived his campaign against science.

JS: Let me clarify this. If I said that lower IQ causes poverty, it was incorrect. My point was that there is data showing that raising IQ can increase socio-economic opportunities. Of course, the data on this is hugely controversial and that claim may be false. I am not particularly interested in IQ, I simply picked that as an example that people can engage with. Equally, I also gave you the example of self-control. The point is that if there is some property of ourselves that is associated with our wellbeing—and of course, there will also be social contributors at play—we have a reason to intervene. Now it may be that it is more effective to use social mechanisms to tackle poverty, but I take it that if giving people cheap computers improves their opportunities and they can raise themselves and compete more effectively in the work force, then it is a good thing. Equally, if giving them drugs or interventions increases their ability to concentrate or focus and that increases their wellbeing, then that is a good thing too. So I simply think that we have to evaluate and consider these interventions alongside other interventions. I do not intend to be a messiah of biological interventions and, obviously, they have to correlate with people's wellbeing. If IQ has no correlation with it, it is irrelevant. But there will be things like self-control, empathy, etc that will affect how our lives go and we may change those, as well as changing social circumstances. As regards the Unabomber—there are crazy people out there and they perform crazy acts for all sorts of reasons. The Unabomber's belief maybe a reason to make us think about how people will react to this sort of development, but we should not form a policy solely on the basis of that.

John Fender [University of Birmingham]: I have a problem with the use of the vocabulary of rights in this context and I think there is a crucial omission from Professor Savulescu's talk. There is no mention at all of the resources required to give people these rights. We should consider what it actually means that an individual has a right to X. There are perhaps two ways of interpreting it: first, he has an absolute right to X. This means that we should do whatever is feasible to give this individual X. But, of course, that will not be feasible in many, many cases. Supposing rising IQ by whatever it is you decide is necessary requires 3 times our national product. That is not feasible. So it seems to me ridiculous to treat rights in this context as absolute rights. What we have to ask ourselves is whether we can afford to make the resources available to give people X. It seems to me much more sensible to approach this from a more utilitarian point of view, rather than from the point of view of rights. We have to make a decision on the basis of the benefits and costs of these enhancements.

JS: I agree with you completely, but I was asked to give a talk on human rights. Even if you want talk in terms of human rights, you are correct in saying that we have to measure the opportunity-cost, resource implications and so on. But remember that in so far as people have a right to education, we think that government funds should be provided for education. If interventions increase the educability of our children, we can measure the effect of such interventions, and they are cost-effective in comparison with other more traditional intervention methods, we have an argument that they should be considered as an alternative. But, on the whole, I do agree that nobody has an absolute right to anything.

IK: I always worry when economists start talking about costs and benefits because I do not think it is clear what constitutes a cost and a benefit. For example, the loss of a right could be a cost.

On a different note, I think that some rights are, perhaps, non-negotiable. The discourse of rights is quite familiar with the idea of social rights, qualified rights, etc. There is margin for gradation, so that the distinction does not need to be all or nothing. Non-negotiable rights include, for example, the right to be free from torture under all circumstances.

Susan Beaudy [BNC 1966]: I want to ask you both about respect for science and evidence. I do agree with Professor Savulescu's claims: controlled trials in prisons have shown how giving prisoners a good diet as well as supplements affects their behaviour and their employment prospects afterwards. Of course, the Home Office banned it immediately because of a lack of respect for evidence. Finally, I would like to ask you the old question of how much ethics teaching is needed to make a good doctor and how much ethics is needed to lead a good life. I am concerned that there is in fact very little evidence that ethics committees and ethics teaching at medical schools have improved the quality of care.

IK: Obviously, in your case ethics teaching was extraordinarily helpful because it allows you to engage in this kind of discourse. At any rate, there is always an argument in favour of not thinking, of relying upon intuition or whatever visceral response might arise when dealing with a fellow human being. Yet I would have thought you would be loath to do that, to tell those people who were caring for you not to worry too much, because you may not get the response that you really wanted. And then you are likely to want to enter a different realm, that of committing to a discourse by thinking, reasoning and being consistent.

I think, and you would probably agree with me, that medicine is a uniquely moral enterprise. That being the case, it is incumbent upon those who educate and train that those who practice healthcare, in whatever professional group, are as sensitized to the nature of that moral enterprise as possible. The idea of teaching medical ethics as an 'add-on' next to, for example, computing, is not the right way of doing it. The question is whom you select, how you educate, how you train and whom you subsequently certify. Unfortunately, we do not seem to do that very well in this country.

At the same time, God forbid that we have the wondering ethicist who walks up and down the hospital wards dispensing immediate solutions, which is what we encountered in the 1970s in some parts of the US. We have moved beyond that: this education and training is, in my view, at the heart of being a member of any professional group. To me, professionals only have duties, whereas patients have entitlements—call them rights, if you will. The more we can get that through, the more we will encourage the possibility of a conversation that is respectful of the fact that we are in a partnership.

JS: Let me just make two brief points. First, I think ethics is the ability to articulate reasons and to critically reflect on your arguments, to identify fallacies and to understand the importance of evidence in argument. The role of this ability and of values is absolutely critical, not just to professional life but to ordinary life. I therefore believe that everyone should learn more ethics. On the other hand, I also agree that ethics, considered in this way, is probably not what most ethics committees do.

The second comment that I would like to make is that we have a neuroethics project that is looking at the neuroscience in moral decision-making and judgment, and there is very interesting evidence emerging on the origin of our intuitions, their fallibility, their misfiring and misdirection in various particular practical circumstances. There is interest in researching the way in which this could relate to judicial decision-making. This may be used in empirical science to improve moral decision-making, if on a very small scale. Consider this example: one of the things you would expect from jurors is that they retain the information they hear, so as to be able to deliberate on the facts as they are presented. In a simple study, a researcher gives a set of facts to a group of people and measures their recall after 30 minutes or one hour; this is then compared with their recall when they are given various memory enhancers. It may be that in the future we decide to put our jurors on some of these drugs to improve their performance. I think we are going to find ways to think about moral judgment more scientifically, tailoring our practices, and also probably our teaching, to address that.

Part 4:

Environmental Challenges in a Warming World

Introduction

David Shukman:

Good afternoon and a very warm welcome to everyone. In the course of this series: disease, war and human rights abuses, and now perhaps what many think is our greatest threat that we face - climate change. When I came into my job six years ago as Environment and Science Correspondent for the BBC I came not as an expert; I have done other jobs in the past and when I took up the post some of my colleagues said, "David, I didn't realize you were a tree-hugger". I have never thought of myself as tree-hugger - I just thought of myself as a correspondent; certainly not a campaigner.

But a number of things have struck me in the last few years, which have confirmed for me the importance of the issue we are going to be hearing about this afternoon, and which we will then debating a little later. One is (and we will hear a lot more detail on this) in headline terms (which are the kind of terms I am very used to having to deal with in a newsroom, trying to convince the editor of a story): the science of climate change has become a great deal stronger. Most revealing was the publication two years ago by the Intergovernmental Panel on Climate Change of the Fourth Assessment Report, which provided a kind of foundation stone, certainly for us in the media, for coverage of climate change issues, because it concluded with a90 percent likelihood, that most recent warming was man-made. And that single statement, which again I have transposed into headline form, gave us, certainly the media, the BBC, a very strong foundation from which to cover this story.

But, a number of things have changed rather dramatically - the science has become a lot stronger. One reason the science has become stronger is because events have been rather more rapid than many had forecast. When I started the job in 2003, the forecast was that the Arctic might be without ice in the summertime by the end of this century. Then a year or two after that it was decided that it might be the 2080s or 2070s. Well, in 2007 in September the ice melted to an extent forecast for the 2040s and people said, well, maybe that was a one-off. Maybe the fact that the Northwest Passage has opened is just one-off. Well, I was up there again in September last year and it wasn't a one-off - the melt last year was almost as great as the extreme record set in 2007. So much so that the US Coast Guard, which for generations had never bothered patrolling the Arctic coast of Alaska, felt obliged to start deploying ships and planes and men up there, recognizing the strategic implications of global warming.

Another big change: I remember a few years ago being ushered, as we in the media often are, down to a basement meeting room at the US Embassy in Grosvenor Square; and there was the US chief negotiator Harlan Watson, a tough character, a character used to saying 'no' to all kinds of things in all kinds of forums; and he came up with this memorable quote. "David, never forget this about American policy: no targets, no timetables." And he just kept repeating this as a mantra. "No targets, no timetables." Well, we are now in an era where that has changed. The science has got stronger and the American approach has changed - as a second point.

Thirdly, when I started this job, when it came to global warming, I got emails, as you would expect, from the Met Office Hadley Centre, from the UNFCCC, from UNEP, Greenpeace, and

Friends of the Earth - warning about climate change. Now in addition to those emails, I also get emails from CitiBank, from major law firms, major accountancy practices - all kinds of people who you wouldn't think of necessarily engaging in this topic suddenly realizing that it matters. Suddenly they are taking up the challenge, sincerely or not, realizing that climate change poses all kinds of issues.

Perhaps one thing that hasn't really changed in the five or six years I have been covering this is actually the nature of our response. When the IPPC produced its report last 2007, the ultimate conclusion was: we have got about ten or fifteen years to do something about it; we have to get the carbon emissions graph leveling-off or declining - preferably declining - within about ten or fifteen years. We will hear more about this in the lectures to come. But, if you look at the major technologies, the major policies designed to deliver that reduction in the carbon emissions graph, they aren't really within that timeframe. If you look at the explosion in growth of coal fired power stations around the world, particularly in China, there is no way that carbon capture and storage technology will be ready to deliver that downward trend in the graph within that timeframe.

So from where I sit in the media, science is stronger, things are really happening, and I mentioned the Arctic - there is now this huge shift, because of the incoming President in the States, in American policy with the whole range of opportunities that brings. There is this groundswell shift of engagement. People who haven't thought of this topic before are now engaging on it, as I said - sincerely or not - but nevertheless it is on their agenda. But we will have this huge, as I see it, gap between what I see people are saying is happening and what is actually happening.

We have a glittering panel for you this afternoon. There will be a chance to put questions to this illustrious panel at the very end of this session. But, let me begin straight away by introducing our first speaker, Robert Watson. Bob Watson, as he is known to us in the media (if I may be that familiar) is chief scientist at DEFRA; various incarnations before that included head of the IPCC, famously edged out of that post by a combination of factors, one which probably has the word Exxon-Mobil in there somewhere. So let's welcome Robert Watson to the podium as our first speaker this afternoon.

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Environmental Challenges in a Warming World: I

Robert Watson
Department of Environment, Food and Rural Affairs

OVERVIEW

Most countries are attempting to achieve environmentally and socially sustainable economic growth. Developing countries seek poverty alleviation, and all countries hope to achieve food, water and energy security. Yet countries are trying to achieve these goals at a time of enormous global changes, including environmental degradation at the local, regional and global scale. Key issues include climate change, loss of biodiversity and ecosystem services, local and regional air pollution, and land and water degradation.

Within this context, we must see poverty as a multi-dimensional issue and recognize that poverty reduction is being threatened by an intertwined suite of environmental issues. Cost-effective and equitable approaches to address climate change and other environmental problems exist or can be developed, but this requires political will and moral leadership. The substantial measures needed to prevent environmental degradation from undermining growth and poverty alleviation are not yet in place. A combination of technological and behavioural changes, coupled with pricing and effective policies (including regulatory policies), are needed to address these global challenges across the local, national, and international scales, and across sectors.

PROBLEM: POVERTY REDUCTION AND ENVIRONMENTAL DEGRADATION

Poverty cannot be thought of using income metrics alone: elements of wellbeing include opportunity, security, and empowerment. These elements are strongly influenced by environmental conditions, including: the natural resource base; access to water and sanitation; air quality; ecological fragility; and the likelihood of natural disasters. Poverty reduction is therefore threatened by environmental degradation. For example, climate change, ecosystem degradation (loss of biodiversity, land and water degradation), and local and regional air pollution can undermine:

- Economic growth, poverty alleviation, and the livelihoods of the poor;
- Human health; and
- Personal, national, and regional security.

Given that environmental issues are closely inter-linked, the policies intended to address them should be too; we must ensure that our climate change policies and technologies positively, and not adversely, impact other aspects of the environment or human well-being.

CLIMATE CHANGE-RESILIENT DEVELOPMENT

To achieve poverty reduction we need to reduce environmental degradation, including climate change. This requires climate change-resilient development, which must consist of strategies to cost-effectively mitigate human-induced climate change and adapt to the projected impacts. To mitigate climate change we must minimize the emissions of greenhouse gases and transition to a low-carbon economy while recognizing that access to affordable energy in developing countries is a pre-requisite for poverty alleviation and economic growth. To adapt, we must integrate current climate variability and projected climatic changes into sector and national economic planning while taking into consideration the aspirations of local communities.

Climate change-resilient development must be equitable. Climate change and ecosystem degradation are inter- and intra-generational equity issues. Whereas the historical greenhouse gas emissions have come from developed countries, developing countries and poor people in developing countries are most vulnerable to the impacts of climate change. Furthermore, the actions of today will affect future generations. Mitigation and adaptation strategies must take these equity issues into account.

CLIMATE: THE CURRENT STATE OF AFFAIRS

The IPCC predicts with a high level of certainty (>90%) that the composition of the atmosphere and the Earth's climate have changed predominantly due to human activities. That these changes will continue regionally and globally is now inevitable. Temperatures in land areas in the high northern latitudes are expected to increase by 4-5°C by 2090 even under low-carbon emission scenarios, and by 10°C on average under high-carbon emission scenarios. Precipitation is more difficult to predict, however is likely to increase at high latitudes and in the tropics and decrease significantly in the sub-tropics.

Changes in temperature and precipitation are causing, and will continue to cause, other environmental changes, including:

- Rising sea levels;
- Retreating mountain glaciers;
- Melting of the Greenland ice cap;
- Shrinking Arctic Sea ice, especially in summer;
- Increasing frequency of extreme weather events, such as heat waves, floods, and droughts;
- Intensification of cyclonic events, such as hurricanes in the Atlantic.

The impacts of climate change are likely to be extensive, primarily negative, and cut across many sectors. Temperature increases, which will increase the thermal growing season at temperate latitudes, including in Europe and England, will be likely to lead to increased

agricultural productivity for temperature changes below 2-3°C, but to a decrease with larger changes. However, agricultural productivity will be likely to be negatively impacted for almost any changes in climate throughout the tropics and sub-tropics, areas of high hunger and malnutrition. Climate change will likely exacerbate biodiversity loss and adversely effect most ecological systems, especially coral reefs, resulting in potentially significant changes in ecosystem goods and services. Water availability and quality in many arid- and semi-arid regions will be likely to decrease; while the risk of floods and droughts in many regions will grow. Vector- and water-borne diseases, heat stress mortality and extreme weather-event deaths, and threats to nutrition in developing countries will be likely to increase. Tens of millions of people could be displaced due to sea-level rise.   These climate change impacts are most likely to affect populations in developing countries. Climate change, coupled with other stresses, can lead to local and regional conflict and migration depending on the social, economic, and political circumstances.

MITIGATING CLIMATE CHANGE

Europe – and also President Obama's – goal to limit global temperature changes to 2^oC above pre-industrial levels is excellent, but it must be recognized to be a stretch target and, unless political will changes drastically in the near future, it will not be met. Therefore, we should be prepared to adapt to global temperature changes of 4-5°C.   In addition, we must recognize that we cannot look at mitigation and adaptation separately.

The current level of greenhouse gases in the atmosphere, accounting for the offsetting effect of aerosols, is approximately 385 ppm CO2eq[38]. If we succeed at stabilizing at 400 ppm CO_2eq, there is a 50% chance that global temperature changes will be limited to 2^oC above pre-industrial levels, with a 5% probability of 2.8^{o}C. However, the likelihood of stabilizing at this level is low. If we stabilize at 550ppm CO_2eq, there is a 50% chance that global temperature changes will be limited to 3^oC above pre-industrial levels, with a 5% chance of a 4.8^{o}C.

To stabilize at 500ppmCO_2eq or lower, OECD countries would need to reduce their carbon emissions by at least 80% by 2050. Developing countries would also need to decrease their projected carbon emissions significantly over the same time period.   Clearly a range of tools (policies, technologies and practices) are needed to stabilize greenhouse gases in the atmosphere at 500pmm CO_2eq.

Previously, we assumed that an appropriate combination of technology and policy options could assist us to meet our stabilization goals and mitigate climate change. We now recognize that mitigation will require a combination of pricing and technological mechanisms, as well as good policies and behavioural change, i.e., pricing carbon emissions and understanding behavioural changes is critical.

The IPCC Fourth Assessment Report shows that putting a price on carbon can lead to significant emission reductions. Pricing mechanisms include emissions trading, taxation, and regulations across national, regional, and global scales and across all sectors.

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[38] ppm CO$_2$eq: parts per million of carbon dioxide equivalent

Technology use and transformation is needed to reduce emissions. Better use of available low-carbon technologies coupled with improved development, commercialization and market penetration of emerging technologies is required. Examples include:

- **Efficient energy production and use across sectors:** power generation (e.g. re-powering inefficient coal plants and developing integrated gasification combined cycle (IGCC)); transport (e.g., developing fuel cell cars; developing mass transit; and improving urban planning), buildings, and industries;
- **Fuel shift:** coal to gas;
- **Renewable energy and fuels:** wind power; solar PV and solar thermal; small- and large-scale hydropower; bio-energy;
- **Carbon capture and storage (CCS):** geological storage of CO_2 produced during electricity generation (e.g., IGCC – CCS);
- **Nuclear fission:** nuclear power;
- **Forests and agricultural soils:** reduced deforestation; reforestation; afforestation; and conservation tillage.

A suitable policy framework will facilitate the emergence of appropriate pricing and technological mechanisms. A voluntary agreement will not work. Instead, we need a long-term (e.g. 2030–2050), legally binding global regulatory framework that involves all major emitters, including the EU, Russia, the US, China, Brazil, and India. The agreement should allocate responsibilities in an equitable manner and should include immediate and intermediate targets. The framework should expand the range of eligible Clean Development Mechanism (CDM) activities to include avoided deforestation, green investment schemes, and energy efficiency standards. Sectoral and programmatic approaches should be considered.

Strengthening the science-policy interface for many environmental issues is also critical. National and international, coordinated, and interdisciplinary research is the critical underpinning of informed policy formulation and implementation. There is an urgent need for strengthening the scientific and technological infrastructure in most developing countries. Independent, global expert assessments that encompass risk assessment and risk management have proven to be a critical component of the science-policy interface. These include the International Stratospheric Ozone Assessments, the Intergovernmental Panel on Climate Change, the Millennium Ecosystem Assessment, and the International Agricultural Assessment of Science and Technology for Development. Such assessments must be policy-relevant rather than policy-prescriptive. Furthermore, we need a more integrated assessment process that encompasses all environmental issues within the construct of economic growth and poverty alleviation.

ADAPTATION

Mitigation is essential because there are physical, technological, and behavioural limits to the amount of adaptation that we can achieve: there are physical limits to adaptation on small, low-lying islands, technological limits to flood defences, and behavioural limits to where people live and why. The more we mitigate, the less we will have to adapt. Nevertheless, we know that adaptation is essential and must be made mainstream, particularly into sectoral and national

economic planning in developing countries due to their heightened vulnerability to climate change impacts.

The estimated costs of inaction related to climate change cover a huge range, but are expected to fall between tens and hundreds of billions of dollars in developing countries by 2050. Furthermore, a preliminary assessment shows that tens of billions of dollars per year of Overseas Development Assistance (ODA) and concessional finance investments are exposed to climate risks. Comprehensive project planning and additional investments to climate-proof development projects will require at least $1 billion annually. Primary public financial instruments are available, but funds flowing through them need to be substantially increased.

Failure to adapt adequately to current climate variability and projected change is a major impediment to poverty reduction. Most sectors are poorly adapted to current climate variability. Unless adaptation is recognized as part of the development process and integrated into development planning, ODA will be undermined. This requires a climate risk management approach that takes account of the threats and opportunities arising from both current and future climate variability in project design. This process must be country-driven and focus on national needs and local priorities. Delivery of adaptive responses depends on effective governance mechanisms.

LOSS OF BIODIVERSITY AND ECOSYSTEM SERVICES

Biodiversity is central to human wellbeing. Biodiversity provides a variety of ecosystem services that humankind relies on, including: provisioning (e.g. food, freshwater, wood and fibre, and fuel); regulating (e.g., of climate, flood and diseases); culture-enhancing (e.g., aesthetic, spiritual, educational and recreational) and supporting (e.g. nutrient cycling, soil formation, and primary production). These ecosystem services contribute to our wellbeing, including our security, health, social relations, and freedom of choice and action.

Biodiversity loss is growing for five reasons (**Error! Reference source not found.**):

- Habitat change, e.g., conversion of a forest into agriculture;
- Climate change;
- Invasive species, purposeful and accidental;
- Over-exploitation, especially over-fishing;
- Pollution – e.g. phosphorus and nitrogen.

Climate change has not been a major cause of biodiversity loss over the last 100 years but is likely to be a major threat in all biomes in the next 100 years.
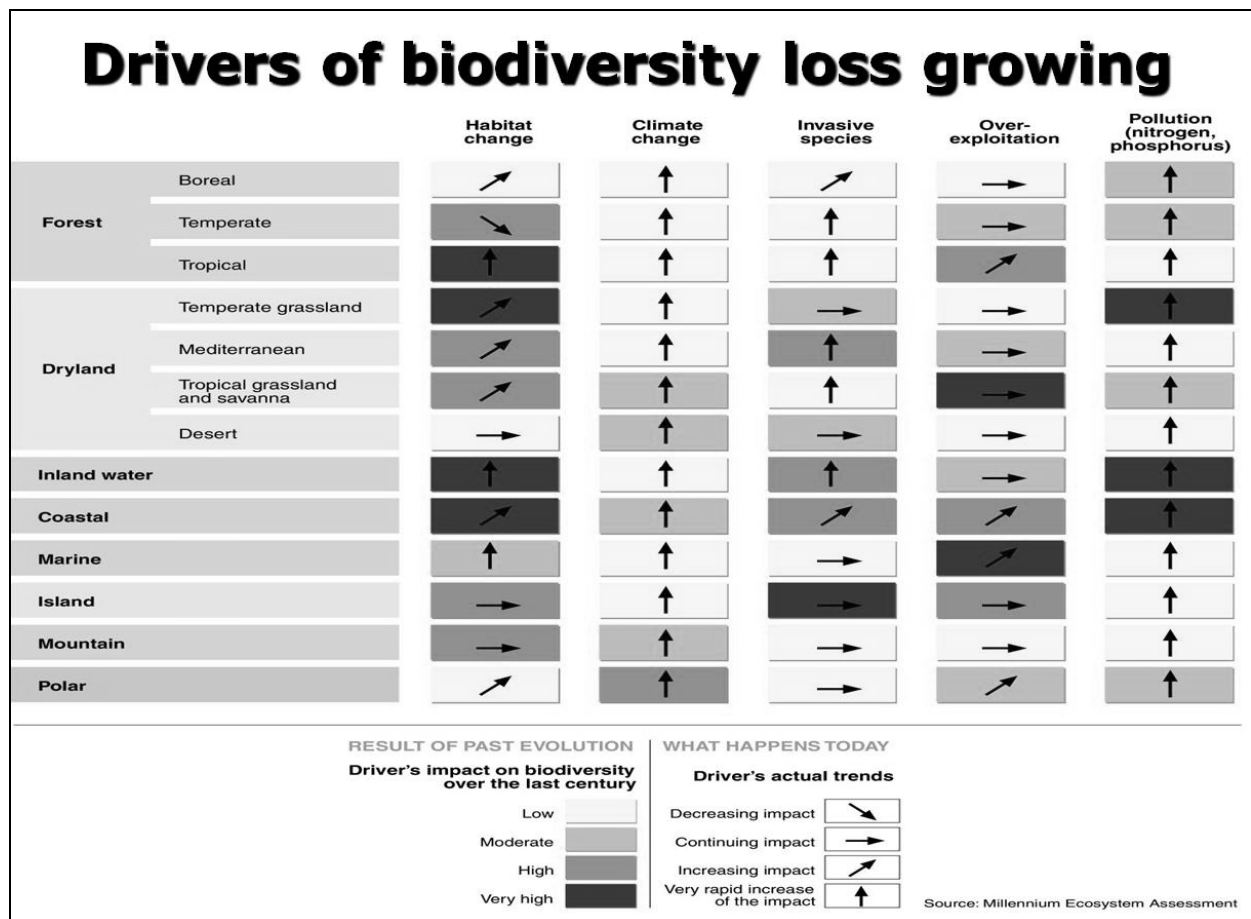
Drivers of biodiversity loss growing

		Habitat change	Climate change	Invasive species	Over-exploitation	Pollution (nitrogen, phosphorus)
Forest	Boreal	↗	↑	↗	→	↑
	Temperate	↘	↑	↑	→	↑
	Tropical	↑	↑	↑	↗	↑
Dryland	Temperate grassland	↗	↑	→	→	↑
	Mediterranean	↗	↑	↑	→	↑
	Tropical grassland and savanna	↗	↑	↑	→	↑
	Desert	→	↑	→	→	↑
Inland water		↑	↑	↑	→	↑
Coastal		↗	↑	↗	↗	↑
Marine		↑	↑	→	↗	↑
Island		→	↑	→	→	↑
Mountain		→	↑	→	→	↑
Polar		↗	↑	→	↗	↑

RESULT OF PAST EVOLUTION — Driver's impact on biodiversity over the last century

- Low
- Moderate
- High
- Very high

WHAT HAPPENS TODAY — Driver's actual trends

- Decreasing impact ↘
- Continuing impact →
- Increasing impact ↗
- Very rapid increase of the impact ↑

Source: Millennium Ecosystem Assessment

Figure 2: Drivers of Biodiversity Loss

Economic instruments, technology, policy making, and behavioural change can help to reduce the loss of biodiversity and ecosystem services. First, we need to change the economic background to decision-making. To do so, we must account for the value of all ecosystem services, not just those bought and sold in the market. We must remove subsidies to agriculture, fisheries, and forms of energy that cause harm to people and the environment. We must introduce payments to landowners for managing land in ways that protect ecosystem services that are of value to society, such as water quality and carbon storage. We must also establish market mechanisms that reduce nutrient releases and carbon emissions in cost-effective ways.

Second, we must develop and use environmentally-friendly technologies. We must invest in agricultural science and technology aimed at increasing food production with minimal harmful trade-offs and to promote technologies that increase energy efficiency and reduce greenhouse gas emissions.

Third, we need to improve policy, planning, and management. To do this, we must integrate decision-making between departments and sectors, as well as international institutions, and include sound management of ecosystem services in all planning decisions. We must empower marginalized groups to influence decisions that affect ecosystem services, and recognize local communities' ownership of natural resources. We must establish additional protected areas

and use all relevant forms of knowledge and information about ecosystems in decision-making, including the knowledge of local and indigenous groups.

Finally, we must influence individual behavior. We can do this by providing public education on why and how to reduce consumption of threatened ecosystem services, establishing reliable certification systems to give people the choice to buy sustainably harvested products, and providing access to information about ecosystems and decisions affecting their services.

FOOD SECURITY AND AGRICULTURAL PRODUCTION

Total food production has nearly trebled since 1960, per capita production has increased by 30%, and food prices and the percent of undernourished people have fallen, but the benefits have been uneven and more than 850 million people still go to bed hungry each night (**Figure**). Furthermore, intensive and extensive food production has caused environmental degradation.
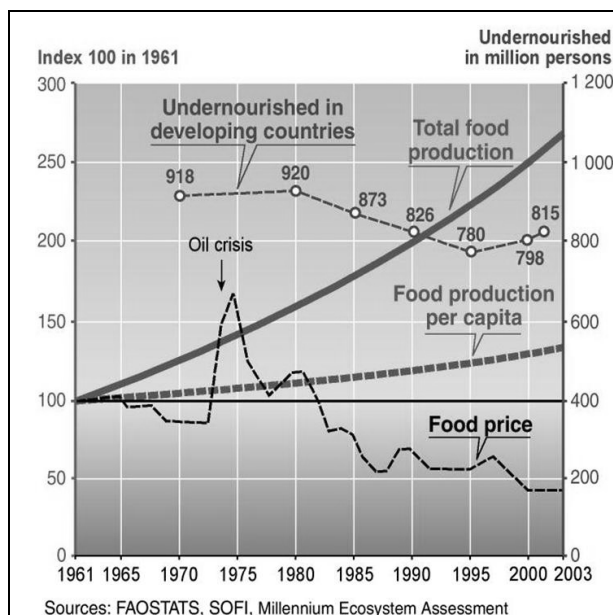

Figure 2: Food Production and Price Trends

Food prices increased during the last two years for six reasons that are unlikely to disappear in the coming decades:

- Poor harvests due to variable weather – possibly related to human-induced climate change;
- Increased biofuels use, e.g., maize in the USA;
- Increased demand in rapidly growing economies;
- High energy prices, increasing the cost of mechanization and fertilizers;
- Speculation on the commodity markets at a time of low stocks;
- Export bans from some large exporting countries to protect domestic supplies.

These increased prices pushed another 100 million people into hunger.

The demand for food will be likely to double in the next 25-50 years, primarily in developing countries. Furthermore, the type and nutritional quality of food demanded will change, e.g.,

there is expected to be an increased demand for meat. We need sustained growth in the agricultural sector to feed the world, enhance rural livelihoods, and stimulate economic growth. Yet these new demands are arising at a time when – in addition to the challenges highlighted above – the world has less labour due to disease and rural-urban migration, less water due to competition from other sectors, distorted trade policies due to OECD subsidies, land policy conflicts, loss of genetic, species, and ecosystem biodiversity, and increasing levels of air and water pollution.

Agriculture affects the environment; for example, tillage and irrigation methods can lead to salinisation and soil erosion, and fertilisers and other forms of agricultural production (e.g., rice production and livestock) contribute to greenhouse gas emissions, and extensification into grasslands and forests leads to loss of biodiversity at the genetic, species, and landscape level. Environmental degradation in turn reduces agricultural productivity.

We can no longer think of agriculture in terms of production alone. We must acknowledge the multi-functionality of agriculture, and place agriculture within a broad economic, social, and environmental framework.

We can feed the world with affordable food while providing a viable income for the farmer, but business-as-usual will not work. Most of today's hunger problems can be addressed with the appropriate use of current technologies, particularly appropriate agro-ecological practices (e.g. no/low till, integrated pest management, and integrated natural resource management). These must be coupled with decreased post-harvest losses.

Emerging issues such as climate change and new plant and animal pests may increase our future need for higher productivity and may require advanced biotechnologies, including genetic modification, to address future food demands. However, the risks and benefits of these tools must be fully understood on a case-by-case basis. The public and private sectors should increase their investments in research and development, extension services, and weather and market information.

Farmers must be central to all initiatives taken; local and traditional knowledge must be integrated with agricultural knowledge, science, and technology developed in universities and government laboratories. Innovation that involves all relevant stakeholders along the complete food chain is essential. As such, we must recognize the critical role of women and empower them (e.g. through education, property rights, and access to financing).

We will also need to employ global-scale policy reforms. This will include eliminating both OECD production subsidies and tariff escalation on processed products, and recognizing the special needs of the least developed countries through non-reciprocal market access. Governments should pay farmers to maintain and enhance ecosystem services.

WATER SCARCITY

Projections show that by 2025 over half of the world's population will live in places that are subject to severe water stress. This is irrespective of climate change, which will exacerbate the situation. Water quality is declining in many parts of the world. 50-60% of wetlands have been

lost. Human-induced climate change is projected to decrease water quality and availability in many arid- and semi-arid regions and increase the threats posed by floods and droughts in most parts of the world. This will have far-reaching implications, including for agriculture: 70% of all freshwater is currently used for irrigation. 15-35% of irrigation water use already exceeds supply and is thus unsustainable.

Freshwater availability is spatially variable and scarce, particularly in many regions of Africa and Asia. Numerous dry regions, including many of the world's major "food bowls," will be likely to become much drier even under medium levels of climate change. Glacier melt, which provides water for many developing countries, will likely exacerbate this problem over the long term. Runoff will decrease in many places due to increased evapotranspiration (**Figure 1**). In contrast, more precipitation is likely to fall in many of the world's wetter regions. Developed regions and countries will also be affected. For example, winters will likely become hotter and wetter in the UK, and summers hotter and drier; southeast England may receive 50% less rainfall during the summer by the 2080s.
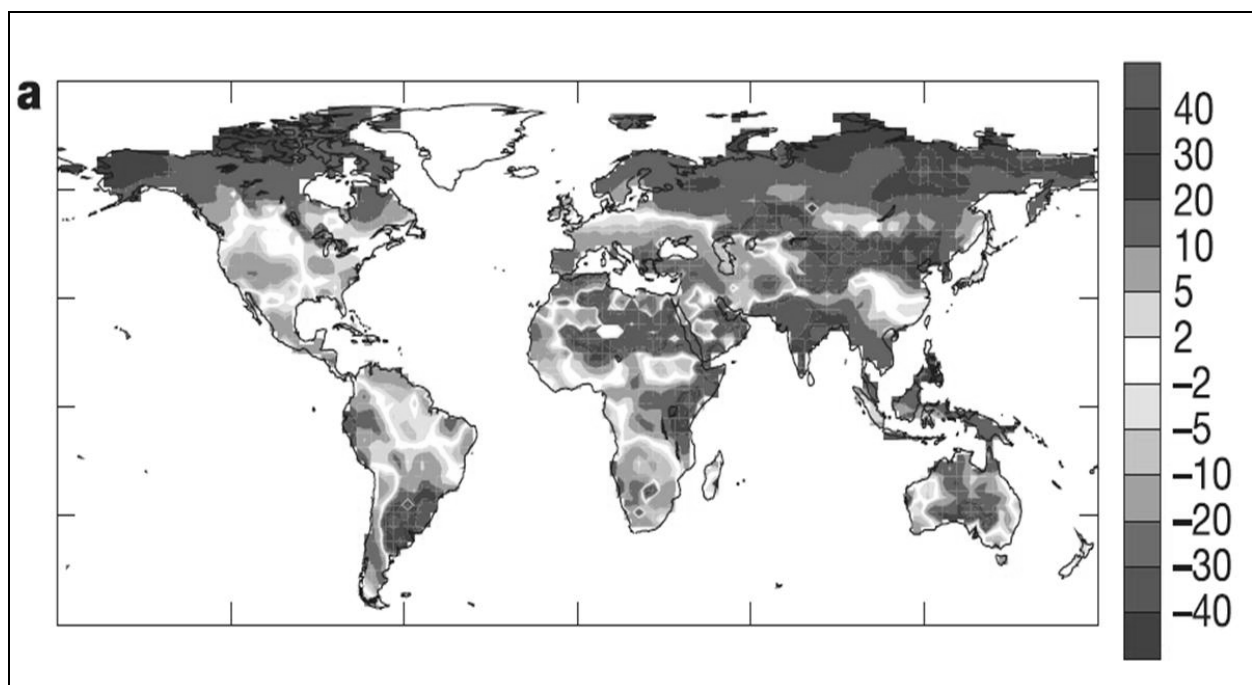

Figure 1: Percent Change in Runoff by 2050

Cost recovery for water – at only 20% – poses a major problem for water management. The principles known as the Dublin Principles should be implemented to help address the challenges associated with water scarcity. These include the:

- **Ecological Principle:**   river basin management (often transnational); multi-sectoral management (e.g. agriculture, industry, and households); and coupled land-and-water management;
- **Institutional Principle:**   Comprehensive stakeholder involvement (e.g. state, private sector, and civil society – especially women) in management action at the lowest level;
- **Instrument Principle:**   Improved allocation and quality enhancement via incentives and economic principles.

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Crucially, and controversially, we must get water pricing right.

CONCLUSION

Climate change is inevitable and a serious impediment to poverty reduction. There is no dichotomy between environmental protection and economic growth; indeed, environmental degradation undermines development and the Millennium Development Goals. Efficient resource use saves money for businesses and households. A green economy will be a source of future employment and innovation. The benefits of limiting climate change and sustainably managing ecosystems far exceed the costs of inaction, and delaying action can significantly increase costs.

Effective action needs stable and credible environmental policies that support the long-term shift to a low-carbon economy and the sustainable use of natural resources. We need not just a small improvement in resource efficiency, but a radical shift. Public and private sector decision-makers need to take a longer-term perspective. We must make advances in science and technology, with the emphasis on interdisciplinary research. We must get the economics right; this includes eliminating perverse subsidies by valuing ecosystem services and internalizing externalities.

The future is not pre-ordained. There are cost-effective and equitable solutions to address issues such as climate change and biodiversity loss, but political will and moral leadership is needed. We can limit changes in the Earth's climate and manage ecosystems more sustainably, but the changes in policies, practices, and technologies required are substantial and not currently underway.

Environmental Challenges in a Warming World: II

David King,
Smith School of Enterprise and the Environment, University of Oxford

It is a delight to be here, but perhaps not so much to have to follow Bob, who has covered the topic so comprehensively! So I will repeat a bit and then focus on one part of the issue.

All the new 21st Century challenges are driven by the remarkable improvement in wellbeing we have all experienced. Life expectancy has increased: in this country to about eighty, from forty or forty-five years at the beginning of the 20th century; and the follow-through from all of those benefits coming through to us is of course that the population grew. So we started last century at one and a half billion and we experienced population growth. At the end of last century the population was 6 billion and we are likely to plateau this century at about 9 billion. The dynamics of population growth country by country have become roughly the same. As wellbeing improves, female fecundity drops. Look at South America: Over the last thirty years the birthrate was at six and now it is down to 2.2 for that whole sub-continent. As it drops it means the population growth is coming under control. Female education and empowerment are still the key factors in the process of reaching a population growth plateau in individual countries and all around the world. Why start with this? We need to be planning for that median growth curve, which would be the sensible thing to do. That means by 2050 we plan for a population of 9 billion people.

Then to pick up on Bob's demand that we should be aiming to reduce emission by 50 percent globally by mid-century. To convert that into figures, today we are producing 36 billion tons of CO_2 per annum. Half of that is where we need to be at half century — down to eighteen billion tons globally or to two tons a year for each person. Currently on average each person in the world produces four and a half tons per annum, and to offer perspective on what we need to do, in the UK we produce eleven tons per person per annum. Decreasing from eleven to two is an eighty percent decrease; it is not only what we need to do — it is the new British policy. It is no longer a question of whether we implement that, but rather *how* we implement that policy and at the same time manage to improve our well-being.

As we move through the cultural transition, which I am going to suggest is being precipitated — potentially in the right direction - by the current financial crisis, we now need to move away from an economic system based principally on greed. For example, GDP growth will not be the best measure of our wellbeing; we have to look to new metrics. Let's move on from these old measures that did so well in the 20th Century. We are at eleven tons of CO_2 per person per annum, the United States at twenty-three, and further, we must work to correct an imbalance: India, at about one ton per person per annum, represents the other end of the spectrum. We also must recognize the broader dynamics at play in the balance of global development,

especially the need for growth in Africa at the expense of others shrinking their consumption. We need a massive transition and that transition is pretty well immediate.

New policy and technology must work together to address the needs of a changing climate and growing population. To help illustrate some of the complexity of this issue let me use an example addressing water resources. In the state of Victoria, in Australia, they have had seven to eight years of successive drought. Farmers are packing their bags and leaving the land. To handle the problem to provide fresh water for the cities and towns, they have been building large desalination, plants. Within one year one-third of the freshwater in the State of Victoria will come from desalinated water. But, this is not a good technological solution, because desalination is an energy intensive process. In Australia this is driven through coal burning which increases climate change, which leads to desertification, and will ultimately continue to reduce available water. Essentially, it is managing an immediate problem to create an adverse longer-term response, which only makes the situation worse. For the life of me I don't understand why we don't have desalination driven ONLY by solar energy. Typically desalination is needed in places that have a lot of sunshine. There are some simple solutions we need to seek and they are science and technology driven.

But moving on: this complexity means, in my view, that global organizations, whether the United Nations and all of its bodies, or the World Bank, or the International Monetary Fund - that were produced as an outcome of the two World Wars in Europe and the actions of a far seeing President in the United States - are perhaps no longer fit for our purpose. We have not designed our international governance systems to meet these new challenges of the 21st Century. We need two world-class leaders - the US and China, a G2 - to deal with these problems in a rational manner or we will reach a fork in the road. Do we manage the future by looking after our own country's resources at the expense of others, or do we talk to others about how to do it? President Bush approached the problem by declaring what was good for the US was good for global policy – the wrong road of the fork. Historians, if we continue down that road, will look at the Iraq war and say that was a war driven by resource issues. President Bush was facing up to the fact that the US has passed peak oil consumption, and seeking a purely national solution. By the way, he also introduced a policy to subsidise farmers to turn food crops – grain – into energy crops - biofuel - perversely resulting in a large hike in global grain prices last year. We have rising sea levels and we have changes in rainfall patterns which together means that we will need to manage land considerably better to produce fifty percent more food by 2030. We need to move away from this purely national response to shortages, and look at what each nation needs to do within a global view of how we manage *global* issues. We need a better global view and a holistic approach. This is my first point.

Now my second point. You may have begun to feel rather depressed. What have we done well? Some things we have done well in the 20th Century can guide us to do better in the future. Industrialization has certainly caused problems in our atmosphere. Let's look at smog in London in 1963. They got rid of it through the science of understanding that it is created by the incomplete combustion of coal and the production of smoke, that is, by carbon nano-particles meeting with high humidity to create smog. So the Government, understanding this, took the advice of scientists; and coal fires were banned in British cities. It was the end of smog. Government acted, having listened to science; and went well beyond the market place for required action.

Cars and emission are not so different. Prior to car exhaust regulations being introduced, all major cities suffered substantial pollution. Exhaust fumes were destroying the atmosphere. Here is an example of good progressive regulation at work, and in thinking about managing the challenges of CO_2 emissions we would do well to learn the lessons from this. For example, South Africa has no regulatory exhaust standards and the resulting pollution is obvious. The EU regulations are now so stringent that if we ran a diesel engined car in this room now, fitted with an exhaust catalyst and trap system which would meet next year's regulatory standard, it would clean up the air in the room. Technology and science driven by the right regulatory systems can provide solutions to many of our environmental problems. Despite car companies squealing each time regulations are ratcheted up, they meet the targets and pass the cost onto the consumer. The cost has always been transferred to the consumer, and created profits for the corporations. They have never lost money and I have never understood the argument for wholesale deregulation.

Let's look at another instance of science and policy working together to address environmental change. Ozone is necessary in our upper atmosphere, the so-called stratosphere; we need a few parts per billion for our survival. So when scientists at Cambridge found that a hole was developing in this critically important ozone layer it was important to find out why. Understanding that it was man-made CFCs that were destroying the ozone layer then made it possible to ban their use, through the Montreal protocol in 1987. Here we see that changes and obligations through international agreements have been possible: it has been so successful that we can expect by mid-century the ozone layer will be repaired.

What is required from the international negotiations leading up to Copenhagen in December (2009) if we are to manage to meet the challenges posed by climate change? I offer you four simple objectives to say whether current policy approaches have been successful. They are as follows. 1) Has a global stabilization level been agreed? Where are we going? Let's agree to place a ceiling on greenhouse gases in the atmosphere. 2) Agreed national targets for forward trajectories 3) Carbon trading and 4) Technology transfer and adaptation strategy for developing countries.

For 1) the global stabilization level: we have risen to 389 ppm CO2 this year; let's say we aim for 450ppm, maybe 500ppm – but let's agree. 2) The national targets must be for each and every country: forward trajectories in India, China, African countries as well as the OECD. In Britain we're looking at a downward trajectory or forward linear decrease down to 20% of present emission rates by 2050. 3) Carbon Trading is the fiscal system that could make this work at an international level, but individual countries would have to bring in a range of regulatory and obligatory measures to meet their internationally agreed targets. While the ETS has not yet been fully successful in Europe, that is part of the point. We need to try it out. With realistic caps for countries and a good trading price for carbon dioxide (clearly there are difficulties that still need to be ironed out). This system locks different mechanisms into place and avoids the carbon tax – a problem of democracy and its future demise in new administrations. But, this is not enough in each country – they will all need their own internal standards, procedures and laws. Unlike a tax, which future political parties can always remove, trading makes carbon a commodity and cannot be so easily undone. Further, it must be an international commodity comprising a world *trading* system and not a political one. And 4) Technology transfer and adaptation strategy for developing countries needs a significant stream of funds from developed

OECD countries to Africa, in particular, each year. How? This could be funded from the auctions of permits for carbon trading. Trading CO_2 in the EU has reached about £160 billion; global trading is likely to take this up to a trillion dollars, a percentage of which can be used for development projects in the developing world.
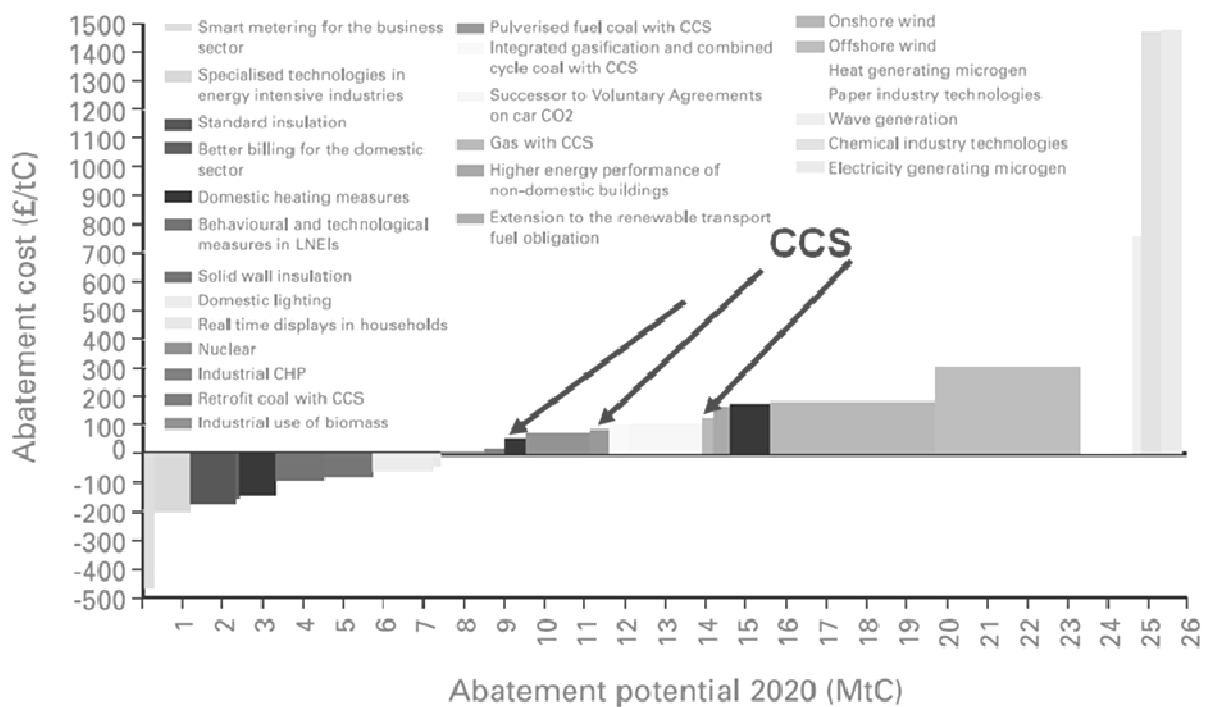

Figure 1: *Marginal abatement cost curves 2020.* (Source: Energy White Paper 2007, Page 286, Dr. Jon Gibbins, Imperial College, London)

So, how do we do this? Let's look at a carbon abatement cost curve (**Figure 1**). The idea is that by the time we get globally to a figure of 26 billion tons of carbon removed we have cracked the problem. The idea of the curve is to look at the cost of this. The policies are put down in order of abatement cost. If you are below the central line you have negative abatement costs because you are introducing energy efficiency benefits. For example, we must build new buildings efficiently to create negative abatement costs. Looking at what the abatement cost is for each of the different policies, some have positive and some negative costs. For example, energy costs go down when we have energy efficient building stuff. The key is the zero central line - which can be moved upwards by moving the price of carbon dioxide up. That is the whole point. If you put it sufficiently high, then the market assisted by regulation will deliver what's required. We need a cost at what this curve states is quite high – in terms of tons of CO_2.

The price would be high; for example, carbon capture and storage for a power station which I will get to later, I am going to suggest that it isn't cheap at all.
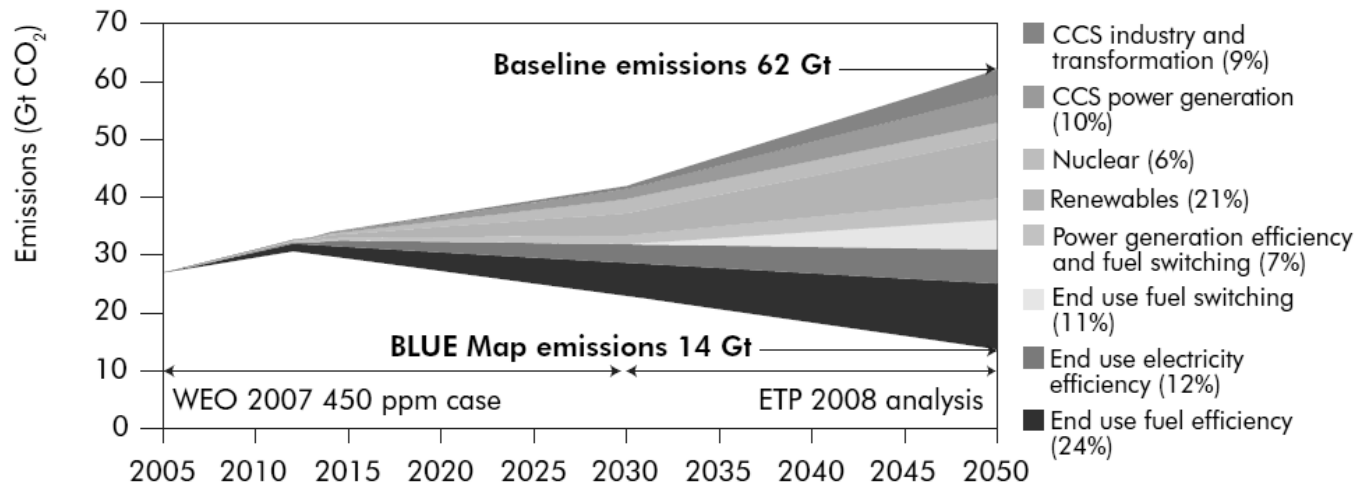
Figure 2. IEA energy technology perspectives (Source Dr. Jon Gibbins, Imperial College, London)

Looking at this curve (**Figure 2**) from the IEA energy technology perspectives 2008, getting down to two tons per person per annum is doable. Science and tech have not had the technology to address this problem because they have never before been placed with it as a particular challenge. They have not focused on low-carbon solutions before because we have always had abundant fossil fuels. Moving forward in Britain will require progressive regulation on our buildings. After 2017, every new building going up must be effectively zero carbon – must generate its own energy. As of 2023, each building will have to additionally pay back the carbon cost of putting it up in the first place. Contractors are thinking and planning for this now.

Developing such technology is a great position for science today – for example we have so much solar energy reaching the planet it could meet the energy needs of 9 billion people. Once we create low carbon energy generating technologies, then we can plug all cars onto the electricity main and we retain the conveniences of mobility without causing global warming. However I am sure that we will need to stem rampant consumerism to manage a sustainable coexistence of our large human population with the ecosystem services that our Earth can provide us.

When I was in government, I was heavily involved in the development of a new Energy Technologies Institute, announced by Gordon Brown in the House of Commons. Half–Government, half-private venture; and it is a £1 billion venture. The idea was that we need to pump money into the development of new low carbon energy sources by 2030. This institute was to prime the pump of the energy industry into thinking about low-carbon energy futures.

Let me go back to the Iraq war... Imagine if we went back to 2000 and someone was telling President Bush about depleting oil reserves in the USA, and saying: look for alternatives. What else could the oil hungry US have done? Stiglitz estimates $3 trillion was spent on the war, while finding technology driven low carbon alternatives would have cost less than 1110th of that and

delivered a zero oil economy for the United States. So the options are there and the question is if we are smart enough to recognize it.

Concerning energy production in the UK: in 2007, coal-fired power stations had the biggest carbon footprint in energy production. If we increased nuclear from 15% (in 2007) going up to 35% of maximum demand, which is around 70 GW, so that nuclear was used to put energy onto the grid right through the year, we would only need to switch on gas-fired turbines at times of high demand, so gaining much more than 35% carbon savings.

How do we deal with coal? We can consider carbon capture and storage (CCS). For example, the defunct idea of the depleted oil well off the coast of Scotland becoming the resource receptacle from the nearby energy station – take the CO_2 from the power station and put it in the well. It would be expensive. It would be cheaper, and BP understood this, to build new stations that can process carbon differently, with separation of CO_2 pre-combustion, rather than trying to retrofit existing power stations.

There is an energy cost involved in these processes as well as the huge cost to put in carbon capture systems – the energy cost of capturing and sequestering is 10-40% of total energy output of the power station. This is a big part of the cost. Pre-combustion capture with a purpose built station is easily the best way forward. Examples have been very effective, if expensive. If one tries to capture it after: you need MEA, which is highly corrosive and is very expensive – not the best way forward in my view. CCS will be an important way forward given the number of world power stations, but perhaps not the best way forward and certainly not easy.

If we look long term – 2050 - I have no doubt that solar energy is going to be a major part of the answer.

Let me say something kind to finish about China. They are working to address this problem seriously. They are putting a ceiling on their coal usage in the future and they are turning the desert into an energy source. They are building a I gigawatt photovoltaic power station that covers over 30 acres. They are also looking into big use of nuclear energy, building about 60 GW of nuclear energy now – attempting to move away from fossil fuel. Given the new leadership in the US and China, with Obama and Jintao we can feel much more optimistic than we did seven or eight years ago.

Coal: The Dirtiest Word in the English Language

We cannot hope to stop climate breakdown unless we leave fossil fuels in the ground

George Monbiot

I intend to start this lecture by uttering a very dirty four-letter word, beginning with 'c'. If you don't want to hear it, please cover your ears now. Coal. There, I've said it. I hope I have offended you. If the biosphere and humanity are to have a good chance of survival, you must object to it in the strongest possible terms.

There is something very odd about official climate change policy. The governments of almost all the rich nations claim that they are seeking to reduce our demand for fossil fuel. They urge us to change our lightbulbs, insulate our lofts, buy more efficient cars. But not one of them, as far as I have been able to discover, seeks to reduce the supply of fossil fuel. In other words, they have a demand-side policy for tackling climate change. None of them has a supply-side policy.

Or perhaps I should say that they do have a supply-side policy: to extract as much as they can. Since 2000 the British government has given coal firms £220m to help them open new mines or to keep existing mines working. According to the energy white paper, the government intends to "maximise economic recovery … from remaining coal reserves."[39]

The British Government also has a policy of "maximising the UK's existing oil and gas reserves"[40]. Its climate change policy works like this: extract every last drop of fossil fuel then pray to God that no one uses it. The same wishful thinking is applied worldwide, where governments everywhere are seeking to get the stuff out of the ground as fast as they can.

But no one mines fossil fuels as a hobby. They are removed from the ground for one purpose only: to be burnt. The Khazzoom-Brookes Postulate suggests that the best energy efficiency policies on earth cannot prevent climate breakdown if supply is unrestricted. I cannot imagine that anyone in such a distinguished audience doesn't know what this is, but just in case any of you have forgotten, let me explain it. The Postulate hypothesises that as efficiency improves,

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[39] Department of Trade and Industry, May 2007. Meeting the Energy Challenge: a white paper on energy. Para 4.07, page 107.

[40] Department of Trade and Industry, 19th December 2006. West of Shetland task force forge ahead into new year.
http://www.gnn.gov.uk/environment/fullDetail.asp?ReleaseID=251607&NewsAreaID=2&NavigatedFromDepartment=False

people or companies can use the same amount of energy to produce more services. This means that the cost of energy for any one service – the implicit cost in other words - has fallen. This has two effects. The first is that money you would otherwise have spent on energy is released to spend on something else. The second is that as processes which use a lot of energy become more efficient, they look more financially attractive than they were before. So when you are deciding what to spend your extra money on, you will invest in more energy-intensive processes than you would otherwise have done. The extraordinary result is that, in an unconstrained market, energy efficiency *increases* energy use.

The only certain means of restricting the demand for fossil fuels, in other words, is to restrict the supply. When you review the plans for fossil fuel extraction around the world, the horrible truth dawns on you that every carbon-cutting programme on earth is a complete con.

I suggested that no country seeks to restrict supply. That's not quite true. The members of OPEC, who understand their position very well, tighten the taps by a notch or two whenever the price of oil looks as if it is about the slide. How do our responsible, eco-friendly governments respond? By angrily demanding that they increase the flow, so that we can get back to consuming as much of the stuff as possible. They are simply not serious about climate change.

But let me return to the subject of the lecture, the dirty word I mentioned at the beginning. There's a particular problem with the very black stuff: it is even more polluting than the alternatives. When you take into account its higher carbon density and the fact that coal-burning power stations, on average, are less efficient than gas-burning plant, you find that coal produces roughly twice as much carbon dioxide per megawatt hour of electricity production as natural gas[41].

I will attempt to put this problem into perspective. Most of the world's climate scientists are agreed that to prevent some extremely grave impacts and the possibility of runaway climate breakdown, we have to ensure that there is no more than two degrees Centigrade of global warming. In its fourth assessment report, the Intergovernmental Panel on Climate Change lays out the cuts in greenhouse gases required to prevent warming beyond this point[42]. If these projections are correct – and the IPCC suggests they are almost certainly underestimates – then, if we are to aim for equitable carbon emissions per capita, rich nations like the United Kingdom must cut the carbon dioxide pollution they produce by at least 90% by 2050.

The UK's energy generators have been preparing planning applications for at least six new coal-burning power stations. These first six will, if they are built, produce 54 million tonnes of carbon

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[41] Coal contains an average of 24.1 kilogrammes of carbon per gigajoule of energy, while natural gas contains just 14.6kg [The Royal Commission on Environmental Pollution, June 2000 Energy - The Changing Climate, paragraph 3.36. http://www.rcep.org.uk/newenergy.htm]. So, if all else were equal, burning gas rather than coal would produce about 40% less carbon dioxide for every watt of electricity it generates. But coal is even worse than this suggests. A modern gas-burning power station turns about 52% of the energy its fuel contains into electricity [ibid, para 3.38]. The best coal-fired generators have an efficiency of just 40% [Bennett Daviss, 3rd September 2005. Coal goes for the burn. *New Scientist*].

[42] Intergovernmental Panel on Climate Change, 2007. Fourth Assessment Report. Climate Change 2007: Synthesis Report. Summary for Policymakers, Table SPM.6. http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf

dioxide a year[43]. This is almost exactly 10% of the UK's total emissions. So we could run those eight power stations. But nothing else. We could have no other thermal plant, no transport, no heating, no food. I hope this gives you some idea of how great and disproportionate the threat from coal is.

Aha, you say, but what about carbon capture and storage? Well, what about it? Yes, I accept that CCS is likely to be a safe and viable means of disposing of carbon dioxide: extracting it from the exhaust gases of power stations, then pumping it underground into old gas reservoirs or salt aquifers. But the problem is as follows. We know that the sooner we cut our greenhouse gas pollution, the greater the chance we have of preventing runaway climate breakdown. We know that coal burning plant will start producing CO_2 on the day it opens. We know that CCS, if it is ever applied, will mitigate these emissions, but that this will not happen for several years at best, for several decades, perhaps never, at worst. This is not a wager anyone should be prepared to take.

We have heard a lot about the CCS demonstration project the Government proposes at the Kingsnorth power station in Kent, if a new coal burning plant is built there. What we have heard less of is that this demonstration plant, if it goes ahead, will have a much smaller capacity than the power station: it will remove only a small proportion of Kingsnorth's emissions.

As for tackling the wider problem: well, maybe, somewhere over the rainbow. In January 2008, Greenpeace obtained an exchange of emails between Gary Mohammed, the civil servant drawing up the planning conditions and E.ON[44]. E.ON is the company hoping to build the new plant, which inspired the memorable slogan at last year's climate camp, "E.ON, F.OFF". Reading the exchange, you might wonder who is running this country. Mohammed begins by sending the following email "Drafting the conditions for Kingsnorth. If possible I would like to cover CCS … I admit this suggested condition could be without justification and premature but no harm in trying to gauge your opinion." (This "suggested condition" was actually Government policy.) E.ON replied by claiming that the secretary of state "has no right to withhold approval for conventional plant" (in fact he has every right). All it would allow the Government to specify was that the potential for CCS "will be investigated." Mr Mohammed wrestled with his conscience for all of six minutes before replying. "Thanks. I won't include. Hope to get the set of draft conditions out today or tomorrow."

Now all Mr Mohammed was proposing is that the new Kingsnorth power station should be CCS-ready. What does this mean? Only that enough space is left on the site to bolt on a carbon capture plant if at some future date someone rather bolder than Mr Mohammed decrees that it should be built. Alternatively, the space could be used to expand the coal-burning plant.

The only policy that is guaranteed to prevent this carbon pollution from being released is not to build the new power stations; and not to mine the coal that would otherwise have fired them.

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[43] Greenpeace makes this calculation as follows: "10.6 GW [the generation capacity of the six plants] x 7884 hours of generation per year, assuming 90% operational = 83.57 TWH/y. 83.57 TWH/y x 0.65 = 54 mt/CO2/y".

[44] you can open the emails on this page: http://www.greenpeace.org.uk/media/press-releases/government-climate-policy-dictated-by-german-utility-giant-20080131

But far from discouraging coal mining, the British Government, as I have suggested, is seeking to maximise economic recovery of remaining coal reserves. And what this means, in almost all cases, is opencasting.

The reason for this is largely technological. The size and power of modern mining equipment means that it is now cheaper just to take the ground away than to send teams of men underneath it to dig out the coal. The scale of the machinery is mind-boggling. The 1300 horsepower earthmovers they use, for example, are about the size of an average British house. I know them quite well, as I have spent a very cold, very wet, winter's day chained to one by my neck.

It is hard to overstate the impact – in terms of landscape and the quality of life of local people - of a large opencast coal mine. When you think of the fuss made about a few wind turbines, it is extraordinary how little concern has been raised about the dozens of new opencast coal mines being approved and planned in the UK.

Or perhaps not so extraordinary. Opencast coal mines tend to be built in places with coal. This means around former mining communities, where people are poor and their voices are seldom heard.

I first became involved in this issue by accident, when conducting some research on coal supply. I came across a mine which, at the time, was almost unknown outside the immediate area, yet it is going to be by far the biggest in the UK. When I heard what was happening I went down to Merthyr Tydfil to take a look, and I was astonished by what I saw.

The construction had just begun of a pit – the Ffos-y-fran mine - which will eventually be two miles across and 600 feet deep. The wall of this pit will come to within 36 metres of the nearest homes. The digging and infilling will last for 17 years, with explosives used to loosen the rock and machines working from 7 in the morning until 11 at night, generating smoke and dust[45]. While the World Health Organisation identifies 55 decibels as causing "serious annoyance"[46], the planning conditions set maximum noise levels at 70dB[47]. When local people say that the scheme is ruining their lives, I do not believe they are exaggerating.

There are 432 local authorities in the United Kingdom. Life expectancy in Merthyr comes 429th[48]. As a result of the legacy of heavy industry, smoking and bad diet, it has the highest rates of

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[45] Clive Nield, 8th November 2004. Report on the application by Miller Argent (South Wales) Limited: Land Situated at Ffos-Y-Fran, East Merthyr.
The Planning Inspectorate, Caerdydd. File ref: APP/U6925/X/04/514548. Para 110, page 21.
[46] World Health Organisation, 1999. WHO Guidelines for Community Noise. Table 4.1.
http://www.ruidos.org/Noise/WHO_Noise_guidelines_4.html
[47] National Assembly for Wales, 11th April 2005. Planning Conditions Attached to Planning Permission of 11th April 2005 in Respect of Planning Application Ref. 030225. Reference A-PP 152-07-014. Section 18.
[48] Office for National Statistics, 2006. Life expectancy at birth (years) and rank order, by local authority in the United Kingdom, with 95% confidence limits, 1993-1995 and 2003-2005.
http://www.statistics.gov.uk/downloads/theme_population/LE_UK_2006.xls#'UK LA rank order - M'!A1

chronic obstructive pulmonary disease, strokes and certain heart conditions in Wales[49]. All these diseases are exacerbated by air pollution and stress. The pit is being dug into a steep hillside overhanging the town. But no health impact assessment has been conducted, so no one knows what the effects will be.

How was this allowed to happen? Well when the developers of Ffos-y-fran and several other pits applied for planning permission, there was no planning guidance for opencast mining in Wales. Or rather there was, but it was kept in draft form until planning permission for the new mines had been granted. That meant that neither buffer zones nor health impact assessments were required to win permission. The people of Merthyr believe that the guidance was deliberately held back in order to allow these mines to go ahead.

The objectors in Merthyr received one possible clue about how this came about from the freedom of information requests they made. They unearthed two letters sent from Ministers in the Westminster Government to Rhodri Morgan, the first Minister of Wales, demanding that he granted planning permission for Ffos-y-fran and other mines, "with the minimum of further delay"[50],[51]. So much for devolution.

A group of us launched a direct action campaign against the mine. We lost the battle but we won the war: last month, partly as a result of the publicity we generated and the wave of repulsion in Wales towards what had happened to the people of Merthyr, the Welsh Assembly Government agreed that there should be a buffer zone of 500 metres between new coal workings and the nearest homes[52]. Because the mining villages were built over the coal measures, this effectively brings coal mining in Wales to an end. But for many communities, of course, it has come too late.

Lobbying for opencast mines is not the only support the Government has given to coal mining. Between 2000 and 2002 it gave Britain's coal producers £162 million in subsidies, much of which went into opencasting[53]. In 2003 and 2004 it gave the industry a further £58.5m[54].

In late 2006, the government established a body called the Coal Forum, composed of coal producers, electricity companies and government ministers and officials, whose purpose was to lobby for the future of coal[55]. The opencast companies used the forum to rail against the planning laws which allow local people to hold up their schemes and to demand a faster

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[49] Ffos-y-fran Health Impact Assessment Steering Group, 29th June 2007. A report of a health impact assessment study of an opencast scheme at Ffos-y-fran, Merthyr Tydfil, page 15. This was written by independent researchers: the council refused to accept it, on the grounds that it had no statutory duty to do so.

[50] Stephen Timms MP, Department of Trade and Industry, 20th January 2004. Letter to Rhodri Morgan AM.

[51] Mike O'Brien MP, Department of Trade and Industry, 14th December 2004. Letter to Rhodri Morgan AM.

[52] BBC News Online, 20th January 2009. Buffer zones for new coal mines.
http://news.bbc.co.uk/1/hi/wales/7839977.stm

[53] UK Coal Operating Aid Scheme: Coal Subsidy Programme / 823100 Cops0010 - Expenditure Profile by Tranche. http://www.berr.gov.uk/files/file34209.xls

[54] 31. Department of Trade and Industry, 2006. Coal Industry in the UK. http://www.dti.gov.uk/energy/sources/coal/industry/page13125.html

[55] Department of Trade and Industry, 11th July 2006. UK Energy policy shapes up to new global energy landscape. Press release.

approval process[56]. They asked for a Government statement explaining the benefits of a diversity of energy sources, in order to prevent climate policies from favouring gas[57]. They hoped that this would appear in the energy white paper[58],[59]. They have received everything they wanted. We know that the Labour Party has a long-standing relationship with coal miners and their unions. But while New Labour has maintained its support for the industry, its allegiance appears to have switched from the workers to the bosses.

We have, in other words, two very good reasons to get out of coal: its contribution to climate breakdown and its impact on the lives and landscapes of communities all over the world. But all the evidence suggests that the world is getting into it again.

There's another 'c' word I've been too polite to mention: China. It's not the only one of course: India and several other developing nations are also intending to use coal to supply many of their future energy needs. All I will say on this point is that we are currently in a weak position to lecture these countries on switching to less polluting fuels. China's emissions per capita are still less than half of ours. Many of them are employed to produce the goods we import. And if we sought to stop them, they would ask us why we want them to do as we say but not as we do.

There's another reason why coal might, if we don't act very fast, have a glowing future.

As the chief economist of the International Energy Agency admitted to me in a recent interview, global supplies of conventional petroleum are likely to plateau in about 2020[60]. Those governments which are prepared to engage with this issue are looking into alternatives to petroleum, to prevent their economies from running out of road. There's one which, if the oil price is high enough, they can deploy almost everywhere: producing synthetic crude oil from coal. Coal-to-liquids technology was developed by the Nazis as a substitute for the oil they were denied during the Second World War. It was refined by South Africa's apartheid regime as a result of the oil embargo. The technology has an unsavoury past, in other words, and it could have a catastrophic future. It is so polluting that it makes petroleum look green. We have to prepare for peak oil not by replacing our transport fuel but by greatly reducing our demand for it. As I have shown elsewhere, this can be done quite easily without threatening our quality of life.

Ladies and gentlemen, we have the technology required to prevent climate breakdown. It is cheap, it is simple and everyone who has studied this subject agrees that it will work. It is called....leaving fossil fuels in the ground.

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[56] Department of Trade and Industry, 14th November 2006. First Meeting of the UK Coal Forum, paras 10-11, page 4. http://www.berr.gov.uk/files/file37293.pdf

[57] Department of Trade and Industry, 23rd January 2007. Second Meeting of the UK Coal Forum, section 5, page 6. http://www.berr.gov.uk/files/file37592.pdf

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[60] http://www.guardian.co.uk/environment/video/2008/dec/15/fatih-birol-george-monbiot

Environmental Challenges in a Warming World:
Consumption, Costs and Responsibilities

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Mainstream politicians would have us believe that climate change can be tackled at relatively low cost and without major implications for our lifestyles and standards of living. Tackling climate change might even enhance economic growth, and there is much political talk about 'greening the economy' being a way out of the current severe economic recession. Mitigating and adapting to climate change are, it is claimed, less a threat and more an opportunity.

This new conventional wisdom was given a powerful foundation by the immensely influential Stern Report.[61] At its core is an old conventional view about economic growth and Keynesian economics, and it had the (politically) satisfying conclusion that climate change could be tackled at around 1% GDP, whilst in the background GDP could continue to increase forever at around 2–3%. Not surprisingly politicians around the world jumped on the 1%, which was repeated in speech after speech by most of the world's leaders.

To many environmentalists, the message in the Stern Report was hard to handle. On the one hand, if politicians could be convinced that climate change could be solved at such a low cost, they were more likely to 'go green'. On the other hand, many environmentalists were imbued with a very different view—that economic growth and consumption-driven economies were likely to bring environmental disaster because they were not sustainable. A world with 9 billion people by 2050 and with ever greater demands being placed on what many took to be finite resources would lead to the destruction of the rain forests, the pollution of the oceans, and ever greater emissions into the atmosphere.

In this lecture, these two conflicting views will be explored. At stake are the sustainability of the world economy and the prospects of future generations. The starting point is necessarily conceptual: how to think about economic growth and sustainability, and the relationship between consumption and the environment. This clears the ground to consider what needs to be done to address the global environmental destruction which is the hallmark of our age, and whether this can be done whilst expanding consumption along current lines. Once the sustainable path is identified, we then have a benchmark to consider how well current policy is addressing these environmental problems—whether the Kyoto Protocol framework has had much impact, and whether the proposals for a post-2012 regime are likely to make much difference. We can then see how sustainable or otherwise is the path we appear to be on.

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[61] Stern, N, HM Treasury and Cabinet Office (2006), "The Economics of Climate Change, The Stern Review", Cambridge University Press, November.

THE CONCEPTUAL FRAMEWORK

In conventional economic growth theory, inputs (like labour and capital) are efficiently translated into outputs through a production function. Inputs can be substituted for each other, and there are various combinations of inputs which can produce the same output. By improving the quality and quantity of the inputs, output can be increased. For labour, improvements in education and health improve the quality, and greater population increases the quantity of labour. For capital, technical progress is what matters. Since all these dimensions of labour and capital are increasing, and are likely to go on increasing for the foreseeable future, we can expect economic growth to continue at around 2–3% per annum. And since there is no reason to think that technical progress (and probably human capital) will not increase indefinitely, we can anticipate that future generations will always go on being better off, aside from the odd recession and even depression from time to time interrupting the path to nirvana.

This is indeed what the Stern Report assumes as the context within which to consider climate change. Once we reflect on the power of compound interest, we can see, to borrow the title of one of Keynes' essays, that the economic prospects for our grandchildren are truly awesome. By 2100, China and India will have surpassed the current standards of living of most developed countries, and even in these developed countries people will be many times wealthier than now. Just reflect for a moment on how each of us would spend, say, four to six times as much money as we have today. Perhaps another car, more foreign holidays, air conditioning, and a couple of spare houses? If we consider what very wealthy individuals now spend their fortunes on, the implications for this level of consumption for the many are awesome.

Is this really likely? Or even possible? Or, to use the modern and much-abused term, is it sustainable? Sustainability is about the ability to endure and carry on: it is about the capacity of our environment to absorb all this extra consumption without serious negative feedbacks. In the conventional growth theory, even environmental damage does not *per se* undermine consumption possibilities, provided the pace of adding human and man-made capital outpaces the environmental damage. As long as the inputs in aggregate keep going up, then so too can economic growth and the consumption that goes with it. In other words, we can compensate for the loss of our climate and biodiversity with new ideas, inventions, houses, roads, cars, and air conditioning. The loss of the swallow and the tiger are traded off against the gains in buildings and iPods. There is a one-for-one substitution between the inputs, of which the biodiversity and the climate are but examples. There is, on this view, nothing *special* about the environment.

This substitutability assumption looks suspect. The environment is hardly just another input: it is foundational to all the other factor inputs and it is also an output. Some substitutability is possible—indeed, that is what humans have been doing for thousands of years. Nature has been tamed for the purposes of agriculture. Cities have been built. Land has been reclaimed. Sewage and rubbish have polluted rivers and seas to allow the current level of consumption to take place. In the process, human populations have multiplied, tripling in the Twentieth Century, and are projected to rise by another 3 billion from the current 6 billion by 2050—adding more people than the entire world population in 1950. We have been doing a lot of substituting for nature.

Can this go on *ad infinitum*? It looks doubtful. The climate itself is changing as the concentrations of greenhouse gases in the atmosphere rise—at an increasing rate. We are well on the way to doubling CO_2 concentrations in the atmosphere from a pre-industrial 275ppm to 550ppm. Already we are at 400ppm, increasing at about 2ppm per annum. As we shall see, nothing has yet been done to slow this down, and 750ppm is not just business-as-usual but also probable. On biodiversity, we are on course to eliminate perhaps half the species on earth by 2100, along with almost all the rainforests. Critical thresholds will be crossed in this process of degradation: labour will be impaired and capital will be damaged. At the limit, people may starve and there may be considerable conflict over basic resources.

The implication is that we are living beyond our environmental means: that our current consumption does not pay due allowance to the environmental costs. Depending on the view taken about the thresholds and the impact of all these extra people on resources, this gap is likely to widen, and at an accelerating rate. So the question arises: can we do something about this gap, and design our economies in a way that increases consumption without causing so much damage? Can we decarbonise? Can we stop destroying biodiversity? These are the key policy questions of our age.

HOW MUCH WILL IT COST?

Surprisingly on climate change—given the sheer scale of the damage at present and projected forward by scientists—the conventional answer given to the question "How much will it cost?" by, for example, the Stern Report is: not very much. Indeed, decarbonisation might even make growth and consumption even higher. It is that beguiling and politically seductive answer so beloved and quoted by our political leaders. Perhaps as little as 1% GDP, perhaps even positive. Why? How could this be?

To see why this is probably too good to be true, we need to examine both the conceptual context and the empirical assumptions that lie behind this policy optimism. Part of the justification is macroeconomic. The conceptual bit relates to the way spending—any spending—feeds through into growth. If, for example, the Government spends money on wind farms—or subsidises the private sector to do so—this creates aggregate demand. It increases investment, and through the multiplier it increases consumption. Income is just consumption plus investment, adjusted for imports and exports. And income equals expenditure equals output at the aggregate level. Therefore, by spending on low carbon technologies, we increase growth and therefore future consumption. This is a kind of crude or 'crass' Keynesianism which now grips our political leaders as they grapple with the recession. Spend more on virtually anything and growth will go up.

Keynes himself never of course advocated anything so simplistic, and he would no doubt have been appalled by the current spending plans, as he was critical of the New Deal in the US in the 1930s. For many resources are—even when there is unemployment and excess capacity—scarce. In the general macroeconomic context, financial capital is scarce now, and the corollary of all the proposed spending is borrowing—creating a mortgage on the future. We got into this credit crunch and recession through excess borrowing, and the proposed solution is yet more borrowing. This was not just financial: we have been writing a large environmental mortgage on the consumption possibilities of future generations by borrowing the atmosphere and

biodiversity from them. They—of course—have not been consulted. If we assume they will be so much better off than we are, then it is argued that this is precisely what we should do. But, as argued above, the climate and biodiversity damage may well reduce their prospects. Indeed, it may even reverse them.

So closing the gap may have real costs to our—and future generations'—standards of living. We may have to preserve more now, lowering our standards of living, not only to make good all the financial borrowing, but the environmental borrowing too. That is bound to be painful. And when we look at the costs in detail—at the micro level—it is also far from obvious that they are small. Perhaps the weakest chapter in the whole of the Stern Report is the one on costs. It is largely an argument by assumption, and the assumptions in the supporting paper are subject to appraisal bias and to appraisal optimism. Low carbon technologies are *assumed* not only to be not much more expensive than conventional ones, but are going to get relatively cheaper over time.

The numbers are not borne out by experience. Take wind for example. It is currently expensive relative even to nuclear power. There is little technical progress. It is intermittent. It needs coordinated networks to cope with this smaller scale decentralised power. The actual costs of wind after a decade of targets have not gone down. Yet it is on wind that the 2008 EU climate change package relies so heavily for its 20% renewable target by 2020. There may be other low carbon technologies where progress has been more positive. But in aggregate the costs are higher than many have suggested. In particular, there have been two related problems: the policy costs have been high not low (or strictly ignored in the Stern Report's calculation of the 1% number), and the policy interventions have attracted a host of lobby groups and vested interests, chasing after the economic rents. In wind, this has been extreme: lobbyists misleadingly often ignore intermittency and network costs with claims about the number of houses to be served by each turbine and the costs, and in Britain they benefit from one of the most expensive and costly support systems in the developed world. One way of thinking about this is to ask: what is the question to which a wind farm in, for example, the Outer Hebrides is supposed to be the answer? It is easy to conclude that a good part of the answer is the maximisation of income to crofters and developers. It is much harder to see any link with even 1ppm CO_2 in the atmosphere.

It would be nice to think that we could decarbonise and maintain or even increase the growth rate of our standard of living. The reality is very different: we will pay more—potentially much more—for our energy and transport, and this will reduce our projected standard of living.

HOW MUCH MUST WE PAY

An obvious response to this claim about higher costs is to point out that we have the Kyoto Protocol in place, and indeed some European countries might actually meet their individual Kyoto caps (especially now there is a severe recession and economic growth is negative). If we were to ratchet up our targets a bit—as the EU now proposes—surely this would not make that much difference to our standard of living?

This challenge is partly correct: Kyoto has not cost us much, and nor will the 20% target for 2020. But before we relax, let us consider why this is so. Kyoto does not cost very much because

it does not do very much. Indeed, it might so far have contributed to *increasing* global emissions. How could this be? Kyoto measures carbon production (how much we emit nationally) not how much carbon we consume (how much carbon is embedded in our consumption). Consider Britain as an example—a country which has already reduced its greenhouse gases by around 15% since 1990. How did it achieve this apparently impressive feat? Two factors dominated: de-industrialisation and the closure of most of the coal industry. Quite a lot of carbon production was simply outsourced abroad. We then imported the carbon intensive goods back to Britain and then consumed that carbon. With colleagues, I have calculated that the impressive 15% reduction in carbon production turns out to be matched by a 19% increase in carbon consumption over the same period.[62] Britain's performance on a production basis is exemplary—as its political leaders have rarely missed the opportunity to trumpet; but on a consumption basis it has been terrible.

This is not some academic debate about concepts. On the contrary, it has been going on on a global basis: put simply China, India, and other developing countries have been rapidly expanding their carbon-intensive exports to rich, developed countries. It is not the Chinese who are consuming the outputs from its coastal economic boom. The extra two large coal stations per week in China are being built partly for export manufacturers. And since it is likely that the efficiency of coal-fired generation is lower in China than in developed countries, outsourcing carbon intensive industries may be more polluting—before adding in the pollution from shipping and other transport back to developed countries.

This focus on carbon consumption explains why things have been going so badly whilst Kyoto targets are being achieved. At the global level, coal is the growing fuel source, up from 25% to 28% in the last few years, and on a path towards 35% by 2030. And it translates into an accelerating rate of increase in global emissions. The example of the wind farm in the Outer Hebrides makes little difference to these major and detrimental global trends.

The focus on carbon consumption has a further implication: it points the finger at those who do the consuming. Our responsibility for carbon emissions is not confined to what we produce. The corollary is that the Chinese too are not wholly responsible for what they produce. The US is roughly 25% of world GDP, and the EU is not far behind. Japan is the second-largest economy in the world. Together their combined populations of less than 1 billion are responsibly for around one half of all consumption, leaving the other 5 billion to do the rest. As a very rough approximation, this suggests that the US, the EU, and Japan should pay for around half of *all* the global emissions reductions—a staggeringly higher figure than that suggested by Kyoto.

But, in addition to paying for half the emissions now, China and other developed countries can point to two other reasons for a yet higher cost burden on the developed economies—that they put the existing stock of carbon up in the atmosphere during their industrialisation, and that they have much higher per capita income and emissions. And for good measure, these costs are before any consideration of their role in causing the deforestation at the global level and the destruction of biodiversity. Some of this is linked directly to climate change—such as the scandal of some of the biofuels like palm oil causing direct rainforest destruction, and other biofuels like corn-based ethanol driving up world food prices and hence causing marginal land to be brought

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[62] Helm, D. R., Smale, R. and Phillips, J. (2007), 'Too Good to be True? The UK's Climate Change Record'.

under intensive production. Western consumers have a lot to answer for, and a much higher bill to pay if the sustainability criterion is to be met.

SO IS THERE ANY HOPE?

The implications of a consumption-based approach to assigning the responsibility (and costs) of tackling climate change and biodiversity loss are immense, and very disruptive to both the status quo and the likely course of post-2012 climate change negotiations. We already know that China will not accept quantitative production targets (and as argued above, for good reasons). We know that 20% EU and US production targets by 2020 will not make much difference to the increase in CO_2 in parts per million.

What the considerations set out here suggest is that a sustainable carbon and biodiversity policy framework would require a very substantial transfer of income from the US, Japan, and the EU to developing countries in order to halt their carbon-intensive industrialisations, and in particular to arrest the "dash-for-coal" (and to a lesser extent other fossil fuels). It is not that we are about to run out of fossil fuels (as the naïve peak oil theorists assume). We have more than enough to fry the planet. The task is to apply (much) more expensive low-carbon technologies in countries like China *quickly*. That will, in turn, require the developed countries to transfer considerable sums (considerably more than 1% GDP per annum) to countries like China so that they can increase their competitiveness and be low-carbon. The corollary is that Americans and Europeans will have to correspondingly lower their own consumption considerably – and quickly.

This would be a hard sell in the best of times. Indeed, in the recent boom years, the temptation to tell people they could solve climate change and carry on much as they have done was just too tempting. Indeed quite the contrary: politicians have claimed that we can have new runways, rapidly expand aviation, and across the US and the EU build lots more coal-fired power stations long before the emitted gases might be sequestrated. Consumers are told they can look forward to more and more holidays overseas as their income rises, and benefit from cheaper and secure coal-generated electricity. And recognising that this transfer to China is to an authoritarian Communist government just adds another hurdle to the task of persuading people to lower their consumption to a sustainable level.

THE ENVIRONMENTALISTS ARE RIGHT

What then can we conclude? First, the conventional economic growth model is at best highly misleading when applied to the big environmental question of our time. The environment is not just another factor input. Second, our consumption is far too high, and incompatible with sustainability. Third, by focusing on consumption rather than production, the developed countries have a dominant responsibility to reduce carbon emissions and biodiversity destruction – including much of that happening in developing and poor countries. Fourth, the solution to our environmental problems is therefore a significant transfer of wealth, resources, and technology to the developing world.

Is there much chance of this happening? It would take a very optimistic person to conclude with a resounding 'yes'. There is not much in the study of human nature—and indeed human

biology—to give support to the optimist. Yet it is not impossible. It is a matter ultimately of human wellbeing and ethics. What will not help is politicians falling over themselves to promise both decarbonisation and no significant costs.

A final—pessimistic—note is added by reflecting on the responses to the current severe recession. It is to borrow yet more to maintain current consumption, writing a very large mortgage on the next generation. They will pay for our debts, our pensions, and our health care—and our generation will have had a party, living beyond our means and risking ruining our planet in the process.

The solution to our environmental problems is not wishful thinking. It is cold, hard realism. That has not been helped by the selective quoting by politicians from the Stern Report. It is time to tell voters some unpleasant facts.

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Environmental Challenges: Panel Discussion

Panellists:

David Shukman, Chair

DH: Prof. Dieter Helm
DK: Prof. David King
GM: George Monbiot
RW: Prof. Robert Watson

Q1. Robert Lowson [GMES Coordinator, European Environment Agency, BNC old member]: The world is currently facing unprecedented economic turmoil. Governments are spending vast amounts of money that they don't have to stimulate consumption that has led to environmental degradation. Should we not instead regard this current upheaval as an opportunity to launch "The Global Green New Deal"? In this Deal, we could put conditions on the dollars that we don't have but that we are spending to ensure the outcomes that we want. Countries such as Korea, which will spend US$38 billion over the next four years to create 960,000 jobs and 36 "green" projects, are doing this. Can we not do this globally, too?

DH: We certainly can and should do this. We should not, however, do so by putting another big mortgage on the future. If we look back to 1945, we see that in the UK we had a war-time economy and heavy debts, and that we had to change these conditions. To do so, we suppressed consumption as much as possible and invested the surplus from consumption. We should do this again. Instead, President Obama and Prime Minister Brown propose to borrow money that is unfinanced. Consequently, a new generation will have to pay for the irresponsible and unsustainable lifestyles we led for decades. We should take this opportunity to decrease consumption, not increase it.

GM: The old New Deal was also a green new deal in many ways and perhaps we can learn from it. While we would not call everything in Roosevelt's original New Deal "green" today – predator control and afforestation, for example – the Civilian Conservation Corps embarked on park enhancement, soil erosion control, forest conservation, and other green endeavours that in many ways kickstarted environmentalism in the US. A present-day "carbon army" should focus, for instance, on mass investment in insulation. Such investments, however, require structural policies that prevent us from doing the wrong thing – namely continuing to burn more fossil fuels – in addition to encouraging us to do the right thing.

DK: We need "joined-up thinking" in Government. Recently, Prime Minister Brown has delivered many speeches related to the economy, but the climate change speeches he gave a few years

ago have not been integrated into them. This global crisis should kickstart a move away from a level of consumerism that is not fit-for-purpose in the 21st century.

RW: We will not achieve our goals on a pure consumption basis. It is naïve to think that we can move forward in the 21st Century without using coal as an energy source; there is simply too much of it. We have to advance CCS as soon as possible. I would also include a demand-side policy to complement a major focus on CCS. If we can bring CCS into the market-place by 2020 while also using nuclear energy and reducing consumption, we could stabilize greenhouse gas emissions at approximately 450 ppm CO_2eq.

GM: But it is not enough for us to reduce greenhouse gas levels to 450 ppm CO_2eq: we have to aim for 350 ppm CO_2eq.

DK: We must recognize that "CCS ready" must mean pre-combustion capture. Post-combustion capture, the most common approach, is expensive and uses poor technology. This requires an entirely different design focus.

DH: We can agree that current policy is not advancing rapid development of pre-combustion CCS technology.

RW: We must push hard for IGCC. China is looking at this seriously. We must combine CCS with IGCC, recognizing that we will need to retrofit existing coal plants with post-combustion CCS technology. We must also accept that even if we make a radical shift to energy efficient consumption, energy production still has to come from somewhere.

GM: The great thing about electricity is that it can be generated in many ways. We will not phase coal out immediately, but we have to start now. We can take advantage of sources such as nuclear, gas-based CCS, or a hydrogen-economy based on coal, but we must also recognize the potential for delivering electricity from trans-continental solar power and from loading more renewable energy onto the grid.

Q2. Hilda Rapp [Center for International Peace Building]: Unsustainable consumption patterns by some of humankind have led to unsustainable development. Could this premise form the foundation of an equitable carbon market mechanism that acknowledges the linkages between the earth's systems and the right to have one's basic needs met by sustainable development?

RW: Certainly we need to look at the world holistically. All environmental issues are intimately linked and policies, technologies, and behavioural change are required to address them. This does, indeed, boil down to sustainable consumption.

Q3. Alexander Bozmoski [BNC graduate student]: The environmentalists are right about the costs of combating climate change, however it seems that they also aim for the most expensive solutions. Why is the European trajectory one of choosing such expensive solutions when cheaper solutions are available now?

DH: The answer is politics. Over the last 25 years, Europe's main political parties have gained a declining share of votes. Consequently, the ability of small groups to push governments to form

coalitions has grown. Organisations such as Greenpeace and Friends of the Earth are heavily anti-nuclear and have therefore placed significant emphasis on renewable energies, while saying very little about coal. Consequently, the EU package is not about base load, supply security, or rapid emissions reductions. This is why in the UK we have committed only around £200 million for a single demonstration plant that will test post-consumption CCS, perhaps starting in 2015. Imagine the progress we might have made if instead we had invested a small proportion of the total cost on CCS instead. While this is not the only answer, we might at least be making some progress. We might ask why there has been no political reaction to the costs: this is because the targets are back-end loaded and will not affect the consumer until 2015-2020 when we are trying to run a grid system with 20-25% wind.

RW: We have overlooked deforestation. It will not be easy, but avoiding deforestation will almost certainly be part of any post-Kyoto deal. It will not be as cheap as we might expect, but it will be important. It will be even harder, however, to bring in agricultural emissions. Although we should certainly focus on energy production and use, this accounts for only 70% of our emissions and thus we must also look at improved land management.

GM: Politics is certainly the key to this problem. The current Conservative party policy on renewables, for example, focuses on micro-renewables even though they are very expensive and offer virtually no returns. We would do much better to spend money on massive offshore wind. Unfortunately, everybody loves the idea of an individualized, atomized consumer society. The problem is that we do not typically live in high-energy environments. We should produce energy where it is abundant and deliver it to where it is needed. We need a smart grid with a high voltage direct current cable to minimize losses.

Q4. Helen McNeil**:** Nuclear energy is now seen as a green alternative. What has happened to the question of nuclear waste?

DK: I will only speak for one country at a time, but let me address the situation in Britain. We have been reprocessing spent fuel from nuclear reactors for some time in Cumbria. We could meet 35% of our energy requirements for 40 years if we used the supply of uranium that we currently have, and for much longer – perhaps 100 years – if we continued to reprocess. From an energy security perspective, this means that we would not have to import any more uranium.

I believe that the only safe option is to turn it into fuel. We can take the uranium and plutonium that we have and turn them into mixed oxides (MOX). This eliminates the ability to use plutonium for nuclear weapons. Furthermore, firing neutrons at the MOX to convert them into radioactive waste with lower activity so that they can be buried underground generates electricity. We can safely get rid of our uranium and plutonium by treating it not as a waste – which is expensive – but as a fuel. We therefore need power generators that are MOX-ready.

Regarding radioactive waste management, I see no reason to move the waste that we have in Cumbria. We can dig a hole into the granite on which it sits and bury it. This should not be maintenance free; the waste should be checked at all times.

GM: I'm more relaxed about nuclear now than I once was because the climate change threat has become so significant. A lot of documents have helped to move my thinking, including by Posiva, the Finnish waste disposal authority and UK's Sustainable Development Commission. These documents have demonstrated, among other things, that ionizing radioactive waste management can be done safely and that the average coal plant produces considerably more ionizing radiation than a nuclear plant. I would argue, however, that we should not build new nuclear plants until we have decided what to do with the waste generated by current ones. Currently there is no political will to address this problem.

RW: A plan to manage the waste exists, however there is no final decision on where to place the waste. Cumbria is the likely destination.

DH: All technologies have waste and pros and cons should be weighed. The important thing to note is that the economics of nuclear power are different than those for other energy sources. Nuclear energy requires large initial capital investments and has a long life, low marginal cost, and high average costs. You have to commit future generations to pay for the power that will come from nuclear, which is not possible in a regular liberal market. For this reason, nuclear policy has to be well-established, and this is not the case in Britain where we have made enormous mistakes. Conversely, there are 59 well-operating pressurized water reactors in France, in part because partnerships with political structures were established. If we are to proceed with nuclear in Britain, we must not repeat our mistakes.

Q5. Roger Monk [Technical Director, Hybrid Air Vehicles]**:** There has been little discussion of transportation and yet the aviation sector is the fastest growing emissions sector: it is growing 5% annually or cumulatively 700% by 2050. We need to consider technologies that marry the old concept of airships with advances in lifting body aerodynamics. It is the only technology that could make an order of magnitude difference in emissions. Lockheed Martin is investing in this technology in the US. Why are there not more efforts in the UK?

RW: One of our greatest challenges is certainly personal transportation, including in developing countries. We need to advance mass transport and more effective urban planning, as well as development of electric cars that run on fossil-free electricity. These advances require behavioural change. In aviation, however, a technological solution is critical.

DK: We must address the lack of fuel taxation in the aviation sector that creates an imbalance between land and air transport. We need to replace short-haul flights with fast rail; this has to be one of our investment priorities. Long-haul flights remain a problem but airships may have a limited place, in part because travel speed is limited. Nevertheless, we should not turn a blind eye to any solution, including second-generation biofuels. I have a research group at the University of Cambridge looking to produce kerosene from non-fossil fuel sources. We need the right research and development atmosphere to ensure that all of these alternatives are properly researched.

GM: Currently, green airliners or those using different fuel types do not exist, nor are they likely to. The most likely option is second generation biofuels use to make synthetic kerosene but where will the cellulose come from? The danger is that it will come from the conversion of tropical forests or agricultural land. We are already talking about a "biomass crunch." Instead,

we must recognize that aviation is a luxury that should be low on the list of priorities for biomass use.

Airships might be suitable for freight but they are slow and their timing is difficult to predict, therefore their use for passenger travel is unlikely though should not be discounted. I would urge people to stop flying.

Q6. Roger Martin [Optimum Population Trust]**:** Today's discussion has largely ignored the root of the problem, which is the number of carbon emitters in the world today. Everyone has a carbon footprint. Can we start to break the taboo on this issue?

RW: This is not a taboo subject, although it is a sensitive one. Most population growth will come from developing countries and we should be culturally sensitive to this. Culturally acceptable contraception, education for girls, and empowerment of women are critical. But it is important to recognize that the biggest stress between now and 2050 will be the fourfold increase in wealth, not the increase in population *per se*. Both of these issues are important.

DK: Steady state population occurs when 2.1 children live to maturity. It takes two generations for women to empower themselves and bring their fecundity down to 2.0. This dynamic is true worldwide and we can influence it. There are massive challenges, but this is possible. Nevertheless, unless we have a massive disaster, we should be realistic, assume a population of nine billion by 2050, and plan accordingly.

DH: I am averse to single-problem definitions. We need to look at the timescale: if the "solution" is a population-side one, we might achieve it in the medium to long term. Yet we know that we must address climate change faster than that. Consider compound interest: we can increase our consumption incredibly fast. Pricing is what really matters. We are not currently paying enough and therefore we need a long-term price of carbon that makes us, the polluters, pay.

GM: Population growth is not exponential; it will peak at about 9 billion in 2060 and will come down to 8.5 billion by the end of the century. The only thing that affects economic growth, conversely, is a recession. I see a huge overemphasis on population. The Malthusian fear that the poor will continue to increase exponentially still exists. Instead, we must place blame where blame lies, namely on economic growth, of which population is only a small component.

Notes on the 2009 Tanner Lecturers at Brasenose College, Oxford

ROBIN WEISS is Professor of Viral Oncology at University College London and a Fellow of the Royal Society. In 2007 he was awarded the Ernst Chain Prize for his original contribution to the understanding of human infectious disease. His work is widely acknowledged as having deepened our understanding of HIV/AIDS. He is currently leading a $14m international research consortium in the search for an HIV vaccine, funded by the Bill and Melinda Gates Foundation.

JANE CARDOSA is the founding Director of the Institute of Health and Community Medicine of the Universiti Sarawak, Malaysia (UNIMAS). Her education in the United States was complemented by an Oxford D.Phil. After post-doctoral training at the Scripps Clinic she returned to Malaysia to continue research into dengue haemorrhagic fever. She is a member of the scientific board of the Bill and Melinda Gates Grand Challenges for Global Health. Her current preoccupation is with the development of affordable vaccines against Japanese encephalitis and EV71 encephalitis.

EDDIE HOLMES was educated at University College London and Cambridge University, before becoming Tutor in Biology at New College, and a University Lecturer in the Zoology Department, University of Oxford. He is currently Professor in Biology at the Centre for Infectious Disease Dynamics, Penn State University, and Eberly College of Science Distinguished Senior Scholar. He pioneered new ways of analysing the evolutionary dynamics of pathogens, such as influenza virus and HIV, combining the approaches of epidemiology and phylogenetics. He was awarded the Zoological Society of London's Scientific Medal in 2003.

WILLIAM JAMES is a Fellow of Brasenose College and Professor of Virology in the University. He studied Genetics at Birmingham University, and completed his DPhil in Oxford under Joel Mandelstam. He has worked at the Sir William Dunn School of Pathology since the mid-1980s, focusing principally on the molecular cell biology of HIV. He is a Fellow of the Higher Education Academy, and is currently Associate Head of the Division of Medical Sciences.

PAUL KLENERMAN is a Fellow of Brasenose College whose research focuses on T cell responses to persistent viruses, especially hepatitis C virus (HCV). He is currently Professor of Immunology in the University, where he heads a research group in the Nuffield Department of Clinical Medicine. His early medical education was delivered at Cambridge and Oxford, where he competed his D.Phil before migrating to Zurich. His work in Oxford since 1992 has been largely funded by the Wellcome Trust.

TIM PETO is an alumnus of Brasenose College and Professor of Infectious Diseases at the

Centre for Clinical Vaccinology and Tropical Medicine, Oxford University and the MRC Clinical Trials Unit, London. He is a consultant in infectious diseases and general medicine at the Oxford Radcliffe Hospitals NHS Trust. He is a clinical trialist and epidemiologist. For over 20 years he has conducted international studies funded by the MRC or Wellcome Trust on HIV, TB, malaria, meningitis and pneumonia. More locally in Oxford he has worked on chronic fatigue syndrome and is now studying the epidemiology of hospital acquired infection including MRSA and diarrhoeas.

HAROLD JAFFE is Head of the Department of Public Health in Oxford University and a Fellow of St Cross College. Professor Jaffe spent most of his career at the US Centres for Disease Control and Prevention, where he served as the Director of the National Centre for HIV, STD, and TB Prevention. In Oxford, he has helped to establish a new MSc course in Global Health Science. His current interests are in international health, HIV/AIDS, and AIDS-related cancers.

JOHN NAGL is a retired officer of the United States Army, widely regarded as a leading expert on counterinsurgency. After West Point and studying international relations as a Rhodes Scholar in Oxford, he served as a tank platoon leader during the Gulf War, before resuming doctoral studies in Oxford, which led to the publication of his book *How to Eat Soup with a Knife.* After a spell as a professor at West Point he returned to active service in Iraq. Lt Col Nagl is affiliated with a group of military intellectuals who have given advice to General Petraeus; he is now a Fellow of the Center for a New American Security in Washington D.C.

LEO DOCHERTY served with the British Army in Iraq and Helmand (where he was aide-de-camp of the British commander), before resigning his commission in protest. His account of campaigns he condemns as poorly conceived, clumsily pursued and counterproductive is contained in his bestselling book *Desert of Death: British Military Intervention in Helmand Province and the Comprehensive Approach.*

PADDY DOCHERTY studied history at Brasenose. He is a historian and natural resources expert, with a particular interest in South Asia. He is author of *The Khyber Pass*, a *Financial Times* Book of the Year in 2007.

ANA RODRIGUEZ GARCIA is Programme Coordinator of the Society for the Preservation of Afghanistan's Cultural Heritage (SPACH), a leading provider of local and international support to preservation of historical remains in the country. A long-term resident of Kabul, she is currently undertaking research in Cambridge.

ALAN MACDONALD is Chief of Staff at the Mine Action Centre for Afghanistan (MACA), based in Kabul. A former British Army Officer, he has been involved in mine clearance for two decades in Eritrea, Angola, Sudan, Mozambique and elsewhere, and has worked in Afghanistan periodically since 1995.

JOHN BINGHAM is a senior correspondent for *The Daily Telegraph.* A former undergraduate in Modern History at Brasenose, he has reported on the British deployment in Afghanistan on more than one occasion. As chief reporter at the Press Association he was closely involved in

the reporting of Prince Harry's deployment in Helmand.

SUSANNE VARGA NAGL was a graduate student at Brasenose in the early 1990's. Married to John Nagl, she has an unusual insight into the problems faced by service families in the US.

JOANNA BUCKLEY was until last year Political Advisor in the Office of the Special Representative of the European Union for Afghanistan (EUSRA). She has now joined the UN Assistance Mission in Afghanistan, and has a special interest in security sector reform.

GEORGE NOEL CLARKE has been involved in promoting the political process in Afghanistan for a number of years, working with the British government, the UN and the EU amongst others. He studied Classics & English at Brasenose.

VERNON BOGDANOR has been a Fellow of Brasenose College for over forty years and is Professor of Government in the University. A Fellow of the British Academy and CBE (awarded for his services to constitutional history), he has written widely on constitutional matters, on which his latest book will appear shortly. He has advised a wide range of governments throughout the world and served as specialist adviser to committees of both Houses of Parliament. He is a frequent contributor to TV and radio programmes and to the press. He was presented with the Sir Isaiah Berlin Prize for Lifetime Contribution to Political Studies at the annual Political Studies Association in November.

KATE ALLEN is an Honorary Fellow of Brasenose College, where she read PPE; and has been Director of Amnesty International (UK) since 2000. After opening her professional career in London local government she moved to the Refugee Council to direct the UK emergency evacuation programmes for Bosnia and Kosovo. While on secondment to the Home Office she worked on the 1999 Immigration and Asylum Act.

SIR SCOTT BAKER is an Honorary Fellow of Brasenose College and has been a Lord Justice of Appeal since 2002. He became a Judge of the High Court in 1988, and the Presiding Judge of the Wales and Chester Circuit three years later. He was a Member of the Committee of Inquiry into Human Fertilisation (Warnock Committee) and of the Parole Board, 1999–2002. He sat as coroner for the recent inquests into the deaths of Diana, Princess of Wales, and Dodi Al Fayed.

SIR IAN KENNEDY is Emeritus Professor of Health, Law, Ethics and Policy at University College London. A long-standing member of the General Medical Council, he is a former president of the Centre of Medical Laws and Ethics, which he founded in 1978. He is a member of the Ministry of Defence's Advisory Committee on Medical Countermeasures and Working Party to Review the Code of Practice for the Diagnosis of Brain Stem Death. He has been Chairman of the Healthcare Commission since 2004.

JULIAN SAVULESCU is Professor of Practical Ethics in the University of Oxford. He came from Australia to be Director of the Oxford Uehiro Centre for Practical Ethics and of the Programme on Ethics and Biosciences in the James Martin 21st Century School. The Centre is devoted to research, education and stimulating open public discussion around the ethical issues which arise in everyday life and which relate to the changes in society, particularly those involving technological advancement. As both a doctor and a philosopher he has brought to medical

ethics an accessible analytic philosophical approach. He is the author, with Tony Hope and Judith Hendrick, of *Medical Ethics and Law: The Core Curriculum.*

SIR NICOLAS BRATZA is an alumnus of Brasenose College and has been a High Court Judge since 1998, when he was also elected as one of the five Section Presidents of the European Court of Human Rights in Strasbourg, of which he is now Vice-President. He is a member of the Advisory Council and former Vice-Chairman of the British Institute of Human Rights, a member of the Advisory Board of the British Institute of International and Comparative Law and a member of the Editorial Board of the European Human Rights Law Review.

ROBERT WATSON has been the Chief Scientific Adviser for the Department for Environment, Food and Rural Affairs (Defra) since September 2007. His main role is to provide ministers with the best possible scientific advice and build on existing measures to ensure that science and technology are used to inform policy. Professor Watson was previously Chief Scientist and Senior Advisor for Sustainable Development at the World Bank. He has also held senior positions at NASA and at the White House, where he was responsible for ensuring that science underpinned policy making.

SIR DAVID KING is Director of the newly formed Smith School of Enterprise and the Environment at Oxford University. After a distinguished career as a chemist at Cambridge, he became Master of Downing College and was the British Government's Chief Scientific Adviser until 2007. Founded by a benefaction from the Martin Smith Foundation, the Smith School conducts multidisciplinary research on private sector solutions to environmental problems, and promotes environmental study as part of mainstream social science degree programmes.

DIETER HELM is Professor of Energy Policy at the University of Oxford and a Fellow of New College, specialising in utilities, infrastructure, regulation and the environment. He concentrates on the energy, water and transport sectors in Britain and Europe and is Chairman of the Academic Panel at the Department of Environment, Food and Rural Affairs (Defra), and a member of the expert panel for the Department of Transport's Review of the Regulation of Airports, and of the Advisory Panel on Energy and Climate Security, Department for Energy and Climate Change. Recent editions of his books include *Energy, The State and the Market,* and *Climate-change Policy*. He is an alumnus of Brasenose College.

GEORGE MONBIOT is an author and comments on environmental issues for *The Guardian.* His books include *Heat: How to stop the planet burning; The Age of Consent: A manifesto for a new world order* and *Captive State: The corporate takeover of Britain.* His investigative journeys have taken him to Indonesia, Brazil and East Africa. Back in Britain, he joined the roads protest movement and helped to found The Land is Ours, which has occupied land all over the country, including 13 acres of prime real estate in Wandsworth belonging to the Guinness corporation and destined for a giant superstore. A BNC alumnus, he has held visiting fellowships and professorships at Oxford and other universities. In 1995 Nelson Mandela presented him with a United Nations Global 500 Award for outstanding environmental achievement.

DAVID SHUKMAN is the environment and science correspondent for BBC News. His previous role as world affairs correspondent involved providing regular studio analysis of the Iraq crisis and the United States-led war against terrorism. In a broadcasting career that began in 1985, his

assignments have ranged from reporting from East Berlin during the fall of the Wall, to securing the first filming of Soviet nuclear weapons, to gaining rare access when covering war in Angola. He has reported on the conflicts in Northern Ireland, the Gulf, Bosnia, Sri Lanka, Israel and East Timor. His reports were cited as part of the Royal Television Society award to BBC News for its coverage of the Kosovo conflict in 1999.