Climate change: the state of the debate

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October 2007

Introduction

Go to an international climate change summit, or meet with policymakers in a national environment ministry, and the language you will hear – and almost certainly be employing yourself – revolves around terms like 'emissions intensity', 'policies and measures', 'cap and trade', 'Clean Development Mechanism'. What's usually missing is a robust account of how human behaviour, identity, values and aspirations fit in – of the stories that people tell themselves and each other, which will ultimately determine what they hear when someone says the phrase 'climate change' to them, and what they will do about it.

True, there is some polling data on how various groups think climate change is happening, whether they believe that humans are causing it, whether they believe that it's more important not to take long haul flights or not to leave their televisions on stand-by. But there is almost no data that can tell us *why* people give the answers that they do to such questions.

This discussion paper is intended to catalyse a deeper discussion about why climate change has become a big political issue; what's driving awareness of it among diverse publics; whether climate change will stay high on the agenda; and how future perceptions of the issue might evolve. It does not try to set out definitive answers to these questions, for the simple reason that no one currently has such answers. Instead, it explores questions of who influences whom in the global conversation about climate change.

The paper begins with a brief survey of the history of public perceptions of climate change since 1900, arguing that these perceptions have much deeper roots than is often realised: *Time* magazine ran a cover story on the idea of a warming world as long ago as 1939, for instance. The history section also stresses that perceptions of climate change have always been subject to peaks of interest followed by subsequent declines, and a constant ebb-and-flow of public attention. Above all, the history of climate change shows that perceptions of the issue are by no means driven only – or even primarily – by facts, evidence and rational argument: images, narratives, relationships and values matter at least as much.

Section two of the paper looks at a sample of recent polling data in an attempt to discover whether perceptions of climate change really did reach a 'tipping point' during 2006, as many media commentators believe. While opinion polls do appear to show a global public consensus that climate change is real, urgent and driven at least in part by human activity, the perceptions of what needs to be done – and by whom – are much less clear-cut. As well as examining polling data, section two explores the findings of qualitative research methods, which suggest that instead of attempting to understand 'public opinion' about climate change, it is essential to realise that there are diverse *publics* involved in the issue

– all with different ‘prisms’ or ‘frames’ through which evidence, facts, arguments and discussions are filtered.

The paper concludes that while climate change may have reached a tipping point of sorts in 2006 as far as perceptions of the *problem* are concerned, the same definitely cannot be said for perceptions of the *solution*. So far, we lack answers to fundamental questions such as which solutions will be favoured; who will back them and who will resist them; how much they will cost; and what benefits they are likely to deliver. As we argue, the direction of this debate will depend on how deep public concern is, and on whether what people ‘want’ (either consciously, or as expressed by their behaviour) in different countries diverges or converges.

So before any actor – whether government, investor or advocate – can seek to *influence* the climate debate effectively, it is essential to *understand* the drivers of that debate. For deal makers, knowledge and information about the politics of climate change is itself a global public good: the lack of clarity favours those who would prefer inaction. Here, the Intergovernmental Panel on Climate Change provides a model. Just as the IPCC has informed and then stabilised the ‘problem debate’, so we now need a similar knowledge bank on the perception and politics that make up and drive the solutions debate.

We also conclude that governments and businesses face huge political and financial risks as they navigate the climate debate. At present, their actions are based on vague, and mostly intuitive, views of what is driving change. Many professionals assume they know more than they do, or that climate change is basically a scientific and technical problem. This view is mistaken and now is an especially good time to correct it. The push for a replacement for the Kyoto Protocol is now beginning in earnest. This will stress existing beliefs, force apart current coalitions, and create the circumstances for new ones to be born. That’s why it’s now time to understand, study and track the state of the climate change debate.[i]

One ¦ A short history of perceptions of climate change

A warmer world? Climate change from the 19th century to the 1950s

You could be forgiven for thinking that climate change was a relatively recent discovery. After all, the First World Climate Conference was held in 1979, and the Second not until 1990; and the Intergovernmental Panel on Climate Change was only set up in 1988, producing its first report two years later.

But you would be wrong. French scientist Jean-Baptiste Fourier identified the greenhouse effect in 1827; and the idea that the planet was warming had entered the public imagination as early as the 1930s. *Time* magazine wrote in 1939 that "gaffers who claim that winters were harder when they were boys are quite right … weather men have no doubt that the world at least for the time being is growing warmer".[ii]

Yet as the climate historian Spencer Weart[iii] notes, most people then would still have scoffed at the idea that *humans* could exert an impact on the Earth's climate. When climate catastrophes occurred – Noah's flood, say – they were seen as divine acts. Nature itself was essentially stable. When, in 1938, the scientist GS Callendar presented evidence that fossil fuels could influence the climate through CO_2 emissions, he found that "the idea that man's actions could influence so vast a complex is very repugnant to some".[iv]

Even if human activity *could* have such significant impacts, the general assumption was that this would take a very long time, and moreover that the effect of increasing technological innovation would be benign. As the scientist Svante Arrhenius – who had proposed as early as 1896 that human-caused CO_2 emissions could affect the climate, even if the process would take millennia – suggested in 1908:

> "We may hope to enjoy ages with more equable and better climates, especially as regards the colder regions of the Earth, ages when the Earth will bring forth much more abundant crops than at present, for the benefit of rapidly propagating mankind.[v]

Yet the first half of the 20th century also offered a dramatic image of humanity's capacity to influence its environment. Keen to publicise the fearsome power of its nuclear strikes on Japan, the United States war department released an eye witness account of the attack on Nagasaki, by the 'embedded' New York Times journalist, William Laurence. The explosion, he wrote, was "a living thing, a new species of being, born right before our incredulous eyes." He described a giant mushroom, 45,000 feet high, that was "seething and boiling in a white fury of creamy foam, sizzling upwards and then descending earthward." After that, man's potential power over nature could never again be in doubt.[vi]

By the 1950s, there was increasing public awareness of the dangers of pollution, at least at the local level. The 1953 'killer smog' in London showed that manmade emissions could cause over ten thousand deaths in just a few days. This same realisation hit the United States when a similar event took place in New York – a national media hub – in 1966. Smog also showed the potential for environmental disasters to be insidious in their impact. "There weren't bodies lying around in the street and no one really noticed that more people were dying," recalled a London eye witness. "One of the first indications was that undertakers were running out of coffins and florists were running out of flowers."[vii]

But it was the continuing shadow of atomic weapons that really captured the public imagination during the 1950s. Fears were seared into popular consciousness by the media. Movies like 1959's *On the Beach* presented nightmarish images of the aftermath of an all-out conflict. As Weart observes, such visions presented a new set of ideas and stories that challenged the old view of nature as stable, and beyond humanity's capacity to influence:

> "The new threats awoke images and feelings that most people had scarcely experienced outside their dreams and nightmares. Humans were introducing unnatural technologies, meddling with the very winds and rain, spreading pollution everywhere. Would we provoke retribution? Would 'Mother Nature' pay us back for our attacks on her?[viii]

"A huge experiment": science and media from the 1950s to the 1980s

By mid way through the 20th century then, there had been a marked shift in the way that people thought about risk. As Anthony Giddens argues, "we started worrying less about what nature can do to us, and more about what we have done to nature."[ix]

In this context, manmade climate change seemed increasingly plausible. In 1955, the head of the US Weather Bureau said in a news conference that a general rise in average temperatures of two degrees Celsius had taken place over the previous fifty years.[x] In 1957, the respected oceanographer Roger Revelle said that humanity was – inadvertently – conducting a huge 'experiment' on the Earth's atmosphere.[xi] And then in 1961, there came a milestone in climate change science: CD Keeling announced that from 1959 onwards, he had detected an annual increase of carbon dioxide concentrations in the atmosphere. The increase was tracked throughout the following decade and beyond.[xii]

Again, mass communication emphasized these messages, as *Silent Spring*, Rachel Carson's seminal broadside against pollution, hit the bookstores in 1962. The book popularised critical messages that were already beginning to percolate through the public mind. The environment was no longer pure; pollution could cross-borders; and the 'invisible dangers' were to be especially feared.[xiii] Four years later, another milestone was passed with the first photograph of the Earth from space; four years after that, in 1972, came the

publication of the Club of Rome's *Limits to Growth* report, which introduced global systems analysis to the world and popularised the idea of "global carrying capacity", initiating a debate between 'neo-Malthusians' and 'cornucopians' that continues to this day.[xiv]

1972 also marked the first year in the twentieth century when widespread climate disasters, all over the world, burst into public and media consciousness. A serious drought hit crops in both the Soviet Union and the Midwestern United States; Peruvian fisheries collapsed during an El Niño event; the Indian monsoon failed; a multi-year drought in the Sahel peaked and threatened millions with starvation. Suddenly, global food security was on the agenda. Worries about scarcity only grew the following year, with the first OPEC oil shock: a shock that led to highly visible shortages and controversial policy responses, such as the year-round daylight saving time in the US, implemented only a few months after the crisis began.[xv]

'Energy independence' was also forced into the policy mainstream by the crisis, with President Nixon setting a goal for achieving self-sufficiency by 1980. "From its beginning 200 years ago, throughout its history, America has made great sacrifices of blood and also of treasure to achieve and maintain its independence," he told the nation. "In the last third of this century, our independence will depend on maintaining and achieving self-sufficiency in energy."[xvi]

Throughout the 1970s, science, scientists, and media coverage of scientific findings continued to fuel concerns about the climate's stability.

By the mid-1970s, scientists were increasingly convinced that the climate *could* change due to human action, but were less certain in which direction, to what extent, or how quickly. Global temperatures had been falling for thirty years or so, with airborne pollution the cause. Perhaps a new ice age was on its way. 'Global cooling' – the term is a later coinage – was taken seriously enough to prompt some research, though few if any peer-reviewed papers predicted an imminent and dramatic cooling trend.[xvii] It was widely recognised that, while airborne particulates would tend to decrease temperatures, carbon dioxide would increase them.[xviii] Paul Ehrlich, the neo-Malthusian doomsayer on population, neatly summarised this battle between clean and dirty pollution, and the uncertainty that the interplay of two factors caused. "At the moment," he wrote in 1968, "we cannot predict what the overall climatic results will be of our using the atmosphere as a garbage dump."[xix]

It was a single news article that gave global cooling its big break, taking the story well beyond the published science, and ensuring it would remain a factor in popular debates about climate change for years to come.[xx] Newsweek's 1975 cover story remains a fascinating read. It claimed 'ominous signs' that cooling was already taking place, with a new ice age a distinct possibility. However, it claimed, the impact was not evenly distributed, with equatorial areas experiencing a warming trend. Extreme weather events,

such as tornadoes, were also said to be on the increase. The consequences of adapting to a changing climate were vividly painted. Although urgent action was needed, politicians were thought to lack the will to do what was necessary. Big technological fixes, such as 'melting the Arctic ice cap by covering it with black soot', were considered, only to be dismissed as potentially creating more problems than they would solve. "The longer the planners delay, the more difficult will they find it to cope with climatic change once the results become grim reality," the article concluded.

But cooling did not stay on the agenda for long. As the 1980s got underway, climate science continued to improve, with computer models producing findings that were then replicated by ice cores drilled in Greenland and Antarctica. Awareness also continued to build. By 1981, a third of Americans had heard of the greenhouse effect, proving that the issue had broken out of purely scientific circles. Scientists found themselves having to become fluent in a new language: of TV interviews, newspaper deadlines and soundbites. As Spencer Weart writes,

> "A Senator might brush off an academic who came to speak with him or his staff, but the Senator paid attention if he saw the scientist on television. Scientists were generally uncomfortable talking with the media. Experience showed how journalists might grab a simple phrase, ignoring the details and qualifications that were inseparable from an accurate scientific account.[xxi]

But for scientists that could navigate this unfamiliar terrain, there were opportunities to take their findings to a much wider audience. Professional science writers became increasingly indispensable in explaining climate change to the public. At times, specific relationships proved decisive in setting off a 'domino effect' of coverage. Weart recounts:

> "When it came to deciding what scientific developments were news, American journalists tended to take their cues from the New York Times. The editors of the Times followed the advice of their veteran science writer, Walter Sullivan [who had] cultivated a set of trusted advisers in many fields. On the subject of climate, he began listening to scientists like [Stephen] Schneider and, in particular, James Hansen, conveniently located at a NASA institute in New York City. In 1981, Sullivan persuaded his editors to feature a story about climate change, based on a scientific article that Hansen sent the reporter a few days ahead of its publication in Science magazine. For the first time the greenhouse effect made page one of the New York Times.[xxii]

The summer of '88 and the birth of the IPCC

While awareness seems to have risen steadily, levels of public concern have ebbed and flowed, with a range of flashpoints driving surges of interest. As the shocks of the 1970s

receded, media coverage of climate change tended to fall. Extreme weather impacts on the scale of the 1972 spike had not been repeated, and fears of a potentially imminent catastrophe eased. Other environmental issues did, though, make an impression – notably rainforests, acid rain and (later) the 'ozone hole' over Antarctica, which led quickly to the agreement of the 1987 Montreal Protocol on ozone-depleting substances.

And then, in the summer of 1988, public concern over climate change reignited dramatically. Heat waves and droughts were already flaring up when NASA scientist James Hansen made his famous appearance before a Congressional committee chaired by Senator Tim Wirth as, outside the building, temperatures reached an all-time high. Hansen said to journalists afterwards that it was time to "stop waffling, and say that the evidence is pretty strong that the greenhouse effect is here".[xxiii] As the summer wore on – with Hurricane Gilbert, the worst forest fires in a century and the Mississippi River falling so low that barge traffic was halted – the media leapt on climate change as never before. The number of American newspaper articles about global warming rose tenfold between 1987 and 1988; and by September 1988, polling found that 58 per cent of Americans had heard or read about the greenhouse effect.[xxiv] Once again, though, coverage fell back, particularly as much of the world entered a recession around the turn of the decade.

But, as in the aftermath of the 1972 spike, the scientific community had emerged more energised than before. This time, there was a tangible outcome, which would in retrospect prove a decisive moment in establishing climate change as a global challenge of the first rank. For in 1988, the Intergovernmental Panel on Climate Change was set up – not least in order to come up with a clearer and more definitive statement of what scientists did (and did not) think about climate change.

According to Shardul Agrawala's fascinating account of the origins of the IPCC, its roots can be found in a workshop held in 1985 in Villach, organized by two United Nations agencies and the non-governmental International Council for Science (ICSU).[xxv] At the Villach workshop, a group of scientists, acting in a personal capacity, announced a consensus that "in the first half of the next century a rise of global mean temperature would occur which is greater than any in man's history." The need to deepen, extend and institutionalise this consensus was pushed in particular by the United States government – in part because it wanted to 'buy time' and delay a potentially costly policy response. The US wanted an *inter-governmental* mechanism and that's what it got. According to Agrawala, this formal insertion of scientific expertise was of great importance. The result was to pump sufficient *shared awareness* of the climate problem into the international arena, providing a platform for governments to enter into a serious negotiation.

The IPCC's dominant position in the debate also became self-reinforcing. "The more credible experts there were already in the IPCC, the more attractive it was for other

established experts to join, [and] the more internal strength the institutions had to defend its scientific integrity against political pressures."[xxvi] An *anchor* for global understanding of the issue, and perceptions of its seriousness, had been provided.

The politicisation of climate change: green NGOs and the Global Climate Coalition

The 1988 surge of awareness had one other lasting legacy: more than ever, climate change was framed as a "green" or environmental issue. Large NGOs like the Sierra Club, the Environmental Defense Fund or the Natural Resources Defense Council began to make global warming one of their top campaign priorities. Over the next few years, activists and campaigners from more radical NGOs like Greenpeace and from the nascent anti-corporate/anti-globalisation movement would join them.

Unsurprisingly, there was an equally determined push back against the emerging climate consensus, with well-organised and funded lobby groups taking on the task. They too had been galvanised by Carson's *Silent Spring*, which had been attacked by the chemical industry even before its publication. "If man were to follow the teachings of Miss Carson," warned an industry spokesman, "we would return to the Dark Ages, and the insects and diseases and vermin would once again inherit the earth."[xxvii]

The late 1980s saw the emergence of the formidable Global Climate Coalition, a grouping of car, oil and other industrial companies that operated from a base at the US National Association of Manufacturers. The coalition claimed to represent 6 million businesses and described itself as "a leading voice for business, both domestically and internationally." Critics accused it of disruptive and underhand tactics, claiming that its main purpose was to discredit climate change science, to sow doubt about the necessity of reducing emissions, and to stoke fears about the likely cost of corrective action. The coalition's opposition to the Kyoto Protocol was based on three arguments: that American economic prospects would be damaged, that consumers would suffer from 'skyrocketing' energy prices, and that large developing countries would benefit at the US's expense.[xxviii]

But the coalition found it hard to maintain unity in the face of growing evidence marshalled through the IPCC, which published its first three assessment reports in 1990, 1995 and 2001. In each of them, the consensus that humans were causing climate change, and that the consequences of this would be serious, steadily hardened. BP was the first company publicly to break ranks shortly before the Kyoto Protocol was agreed in December 1997. Its Chief Executive, John Browne, in a widely reported speech at Stanford University, argued that:

> "The time to consider the policy dimensions of climate change is not when the link between greenhouse gases and climate change is conclusively proven, but when

> the possibility cannot be discounted and is taken seriously by the society of which we are part. We in BP have reached that point.[xxix]

By the end of 1998, Shell too had left the coalition, followed by Ford in 1999 and then Texaco, GM and DaimlerChrysler in 2000. By 2001, following the IPCC's Third Assessment Report, business opinion was moving towards an endorsement of the reality of climate change. The GCCC was disbanded in early 2002.

Kyoto and its discontents: the intergovernmental policy process 1990 – 2004

During this period, the intergovernmental process under UN auspices was also gathering pace. After the Second World Climate Conference, held in Geneva in 1990, the 1992 Earth Summit in Rio agreed the UN Framework Convention on Climate Change. The Convention aimed to set 'an overall framework for intergovernmental efforts to tackle the challenge posed by climate.'[xxx] It came into force in 1994 and has now been ratified by 191 countries. Although it did not include any binding targets, it did establish a number of important principles, including the need to stabilize greenhouse gas concentrations at a level that would avoid 'dangerous' climate change, and the need for any solution to be equitable.

The Convention noted that "the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs."[xxxi] Industrialized, or Annex I, countries agreed in principal to reduce their emissions, while a subset of these countries, Annex II, also agreed to assist developing countries through technology transfer. The first Conference of the Parties to the Convention ("COP1"), held in Berlin in 1995, agreed to launch negotiations over what targets should be set – a process duly concluded at COP3 in Kyoto, two years later.

Under Kyoto, developed countries agreed to reduce their emissions by an average of 5.2 per cent below 1990 levels by the time the treaty expired in 2012. The negotiations were predictably bloody with the EU initially arguing for a 7.5 per cent cut by 2003 and a 15 per cent cut by 2010. Developing countries wanted a further target of a 35 per cent cut by 2020, while the US argued for simply returning to 1990 levels by 2012.[xxxii]

Kyoto was a battle between countries with different interests and priorities. This battle intensified when, in March 2001, President George W. Bush repudiated the agreement as "fatally flawed". The stage was set for a new bifurcation of opinion on climate change. But instead of being between business and environmentalists, the schism now appeared to be between multilateralism and unilateralism, and to run down the centre of the North Atlantic. All of a sudden, climate change was no longer just a 'green' issue. Instead, it was frequently mentioned in the same breath as the International Criminal Court, the

Comprehensive Test Ban Treaty, the nuclear Non-Proliferation Treaty and even the Geneva Conventions, as a debate emerged about the role of the US as 'the sole hyperpower'.

The growing transatlantic rift thrust climate change into the centre of the global spotlight once again, as Kyoto became a totemic *cause celebre* not just for environmentalists but for a much broader audience. As media coverage rose dramatically, so did references to global warming in film and the arts – which themselves drove further media coverage. *The Day After Tomorrow* (2004), for example, was seen by no fewer than a tenth of all Americans – and generated ten times as much media coverage as the IPCC's 2001 Third Assessment Report.[xxxiii] The movie, which shows the almost instantaneous arrival of an ice age, provoked much derision when it was previewed by an audience of climate change specialists in London.[xxxiv] Yet many felt that, if it increased awareness of the problem, then it would have done its job. Two years later, Al Gore's film, *An Inconvenient Truth*, was to have an even greater impact and, despite a British court finding some inaccuracies, a much stronger scientific basis.

The mass media could cut the other way, too: Michael Crichton's thriller novel *State of Fear* (2004), which presented climate change as a vast conspiracy, was (and remains) a huge bestseller. In the US, in particular, this message had considerable appeal. There was also strong support for the perceived unfairness of Kyoto. President Clinton did not send the Protocol to the Senate for ratification, at least in part because of the Senate's 95-0 support for the 1997 Byrd-Hagel Resolution, which rejected any agreement which did not require developing countries to take on commitments, and which argued that "any disparity of treatment… could result in serious harm to the United States economy, including significant job loss, trade disadvantages, increased energy and consumer costs."[xxxv]

The tipping point? – 2005 to the present day

There have been changes in the US since the Bush's repudiation of Kyoto – changes that are illustrative of a shift in leadership on the issue. In a trend that parallels the fate of the Global Climate Coalition, a consistent position *against* action on climate has proved hard to maintain.

According to analysis by Henrik Selin and Stacy VanDeveer, "a growing number of climate change leaders – and the political, legal, and practical actions [these leaders] take – increasingly shape debates and policy-making in the United States."[xxxvi] They argue that:

> "This growth in sub-national and private sector climate change initiatives is driven by a multitude of networked actors who pioneer climate change initiatives ahead of federal requirements. More specifically, network participants channel influence through four overlapping pathways: (1) the strategic demonstration of the feasibility

of climate change action; (2) the creation and expansion of markets; (3) policy diffusion and learning; and (4) the creation and promulgation of norms about the need for more aggressive climate change action. Combined, these pathways promote both moral and strategic reasons for policy change.

Support for these 'networked actors' has been forthcoming from outside the country. Europeans have actively attempted to unsettle the US stand on Kyoto by attempting to develop links with scientists, businesses, NGOs, and sub-national entities on the issue. The culmination of this work was the signing, in 2006, of a climate agreement between the UK and California, the latter represented by its governor, Arnold Schwarzenegger. The Europeans have also worked hard to underline the importance they attach to the issue. As British Prime Minister, Tony Blair made climate change one of his two key priorities for the UK-chaired G8 summit at Gleneagles in Scotland (the other was Africa). Germany's Angela Merkel has made the issue a similarly high priority. She has also shown herself willing to tackle the question of developing country responsibilities, arguing that a policy of 'intelligent growth' should be based on the principle of convergence of developed and developing country emissions towards equal per capita levels.

As throughout the course of climate change's gradual rise to prominence, certain events have continued to act as a lightning rod for spikes in concern. In 2005, Hurricane Katrina hit New Orleans. Whilst scientists had generally been careful to avoid attributing the blame for specific disasters at climate change's door (preferring instead to say that specific damages were 'consistent with predicted effects' of climate change), many media outlets in the US were less afraid of posing the question. *Time* magazine asked on its cover, "Are we making hurricanes worse?" – and concluded, on inside pages, that indeed we were.[xxxvii] What was more important, however, is the demonstration of how vulnerable an American city could be to an extreme weather event. Look at the fragility of modern society, was the message many people took home.

The Stern Review on the Economics of Climate Change, meanwhile, appealed to a different audience on a quite different level, and, like the IPCC, showed how expert commentary could help shape the broader debate.[xxxviii] The review was intended to answer two questions: how much would unchecked climate change cost? And what would be the price of a stable climate? Stern's success can be attributed in part to his ability to generate eye-catching figures: for example that climate change could cost as much as the twentieth century's two world wars and the intervening great depression combined. The review also provided much detail for other economists to chew on and had a great impact on economically-minded opinion formers. The Financial Times, for instance, hosted considerable discussion of its findings and, in an editorial, declared itself satisfied that there was now a robust case for tackling climate change. The review, it said, is "not only a counsel of hope, it is a necessary call for action".[xxxix]

So we reached – at least according to many media commentators – a watershed on climate change. *Business Week* called 2006 "the year global warming went from controversial to conventional for much of the corporate world".[xl] The *Observer* newspaper termed it "the year the world woke up".[xli] Momentum continued into 2007. The IPCC declared that warming was undoubtedly happening, and that there was a greater than 90 per cent chance that most of this warming was due to human activity. Climate change was reported to be the hottest topic of the 2007 World Economic Forum meeting in Davos. Just before the June G8 meeting, President Bush announced that the US recognised climate change as a 'serious problem'. UN Secretary-General Ban Ki-Moon convened an unprecedented head of state level summit to discuss climate change. And to cap it all, Al Gore and the IPCC shared the Nobel Peace Prize. You might have been forgiven for assuming that it was – almost – all over bar the shouting.

Conclusion

In the next section of the paper, we make an assessment of a range of polling data to try to determine whether perceptions of climate change really did pass a tipping point in 2006, and if so, what exactly has and has not tipped. But first, a brief review of some of the key themes we can discern in the history.

First, the importance of an ebb-and-flow dynamic in public perceptions of climate change is striking. The story of levels of interest and engagement about the issue is anything but a steady, linear increase in airtime and concern. Instead, perceptions of climate change have been characterised by peaks of attention followed by lapses back towards indifference. But each peak of focus seems to lay the foundation of the next – by catalysing higher levels of scientific engagement, or the development of the environmental movement, or in other ways *initiating conversations*. A geological metaphor seems appropriate. The 'earthquakes' of public or media focus and attention happen only irregularly. In between, the shocks, tectonic plates of opinion are shifting – but silently, below the surface.

Second, the history of perceptions of climate change often seems to be characterised by a dialectic between two opposed, or at least contrasting, schools of thought. From disbelief in the early years of the twentieth century that humans could influence a system so vast as the climate, to disputes between environmentalists and US conservatives, between sceptics and believers, or between unilateralists and multilateralists, debate has always been a key motor in driving the climate change agenda. Action will almost always awaken resistance. Understanding climate change requires a certain amount of 'looking ahead' to enquire which forces will be awakened if the debate moves in direction x or direction y. Europeans, for example, await eagerly a Democrat replacement for George Bush. If one should come, however, it is already clear that the front will simple move towards those who will paint any concession on climate as evidence of an un-American betrayal. Players need

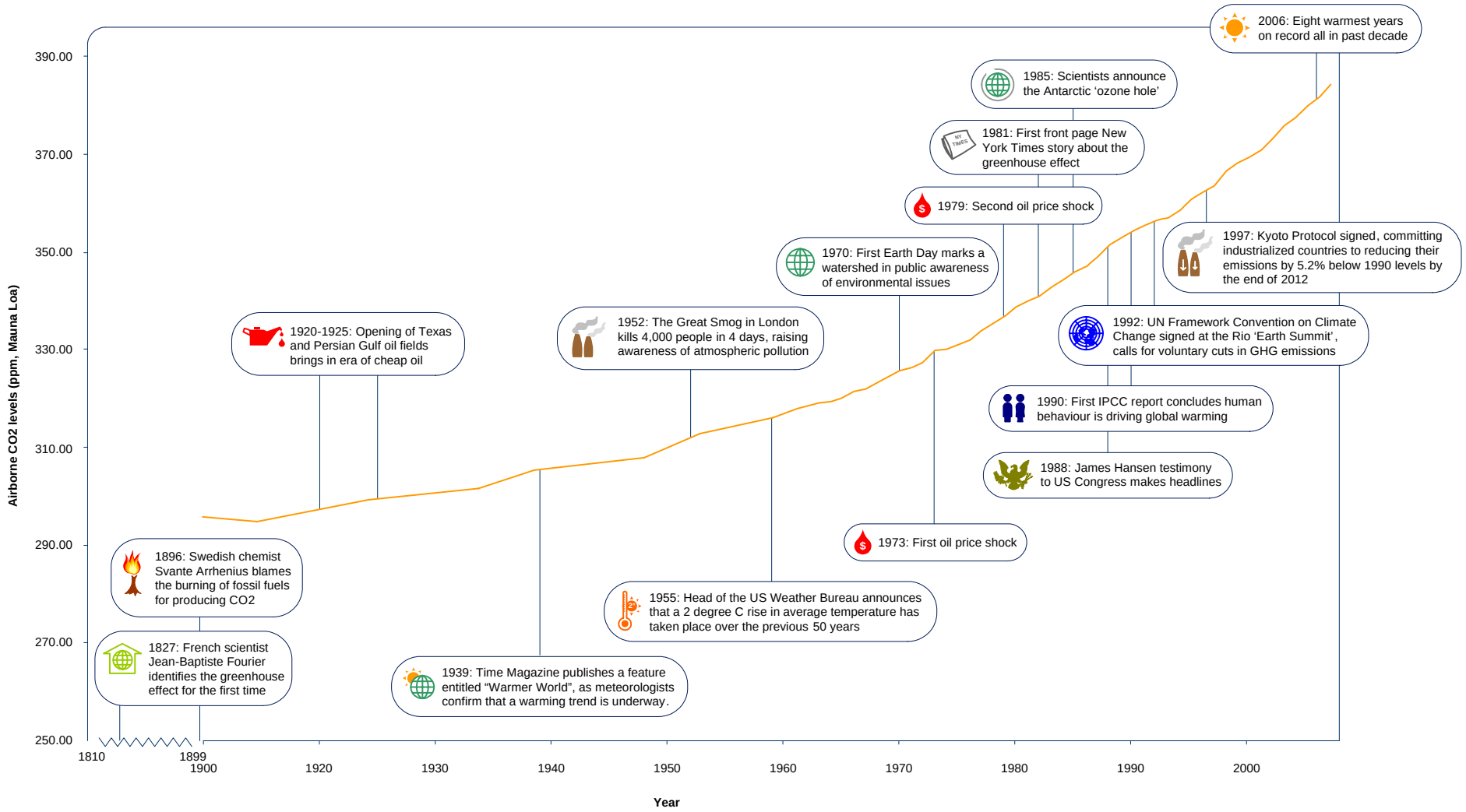
to have the vision to think two or three moves ahead, not be locked into the game as it stands today.

Third, it is crucial to notice that the history of climate change is not just about facts, evidence and argument. *Images* – of melting glaciers, of Kilimanjaro *sans* snow, or polar bears on ice floes – matter enormously. So do *relationships*, as with the friendships between James Hansen and Walter Sullivan or Senator Tim Wirth that were to lead to so much media coverage. *Values* count, too, much as they are often overlooked in analyses of social dynamics. So too do *beliefs*, both as in 'what people believe' and 'what people want to believe'. Finally, *myths* count a great deal, the deep stories that societies tell themselves about why they exist, about what is and is not taboo, and about their relationships with other societies and with the natural world. We are on dangerous ground indeed if we assume that perceptions of climate change are driven wholly – or even primarily – by rational considerations.

Fourth, it is worth noting the role played by shared concepts, vocabularies, conventions and institutions. The IPCC set a standard for describing the nature and extent of the climate problem, and laid the basis for consensus about its seriousness. The Stern Review did some of the same work in the economic sphere, detailing how much action and inaction would cost. The Climate Change Convention offered a framework for climate stabilization. There is a hierarchy here. The 'problem' consensus is stronger than the 'costs' one. The 'solutions' consensus is shakiest of all. Moreover, the consensus is not formed by the reports or agreements *themselves*, but by the 'informal conversations' that surround them.

Finally, it should be noted that the climate change 'aristocracy' – those who *matter* to an eventual agreement – is an increasingly large and diverse group. It may be comforting to believe that a solution will eventually come down to the views of three or four heads of state (the US, China, India, and whichever European leader is most eager to please), but it is also quite wrong. Foreign policy in the modern age is about many interlocking networks. Governments are only one participant in a distributed, multiplayer game. The number of pieces on the board will grow, not shrink, if the game shows any sign of moving towards an endgame. Climate change's 'informal conversations' will have to be extensive and wide-ranging if anything approaching a final settlement is to be reached.

Climate Timeline 1810 - 2007



(source: Global Gas Concentrations CO2, Earth Trends, World Resources Institute (http://earthtrends.wri.org/searchable_db/index.php?theme=3); and Mauna Loa CO2 monthly mean data, Dr. Pieter Tans, NOAA/ESRL (www.cmdl.noaa.gov/gmd/ccgg/trends))

Two ¦ Public attitudes in polling data

Surveying the surveys: what polling data can tell us

We now return to the question of whether – as many media commentators believe – climate change really did pass a tipping point in 2006. This section first explores available quantitative evidence, before using qualitative evidence to extend and deepen the picture. The aim is to juxtapose what the research tells with the narrative we have just laid out.

An arresting finding is the relatively sparse nature of opinion data that is on offer. Opinion polling, in general, takes place at national level, the unit which defines the 'market' both for traditional policies and for most products and services. Comparison of opinion across countries is therefore difficult. Similarly, there are few longitudinal studies, making it hard to show shifts in opinion over time. Finally, few surveys allow comparisons to be made between issues. The seriousness with which respondents view climate change when compared to other concerns is an important yardstick whose use, at present, we are denied.

The World Values Survey is probably the world's most extensive polling exercise. It covers multiple countries, but is only conducted every five years. A question on global warming was included in 2005 and allows some comparison across issues. However, there is no data from earlier waves and a quinquennial exercise is of limited use when looking for tipping points.[42]

GlobeScan, meanwhile, conducts annual research across a number of countries, working in association with the Program on International Policy (PIPA) at the University of Maryland. Among their findings:

- In 2003, respondents in sixteen countries were asked whether they believed 'climate change or global warming, due to the greenhouse effect' was a serious problem. This question was repeated in 2005. In 2006, 33,237 people in 30 countries were asked the same question.[43]

- In 2007, the research was sponsored by the BBC World Service. 22,000 people were interviewed in 21 countries and asked five questions on climate change (see below). The question on perceptions of the seriousness of climate change was not repeated, however. [44]

- GlobeScan also has further data for 2007, covering areas such as the expected roles of developed and developing countries, the sense of personal threat, and attitudes to carbon taxes and emission limits. This data will be released in November, but only to paying subscribers.[45]

A comparison of the 2003 and 2006 GlobeScan data does show an increase in perceptions of the seriousness of climate change. From 2003 to 2006, the number of respondents classifying climate change as 'serious' rose from 82 to 88 per cent (averaged across those countries for which there is comparable data); the figures for 'very serious' rose over the same period from 49 to 61 per cent.[46] Indeed, by 2006 nineteen countries out of thirty had populations with 90 per cent or more people regarding the problem as 'serious'; only in the USA, South Africa and Kenya did less than 80 per cent of people fall into this category. However, the range of people answering 'very serious' in 2006 is much greater, stretching from 90 per cent in Nicaragua to 39 per cent in China. The USA ranks twenty-fourth out of thirty. These findings are summarised in figures 1 and 2.

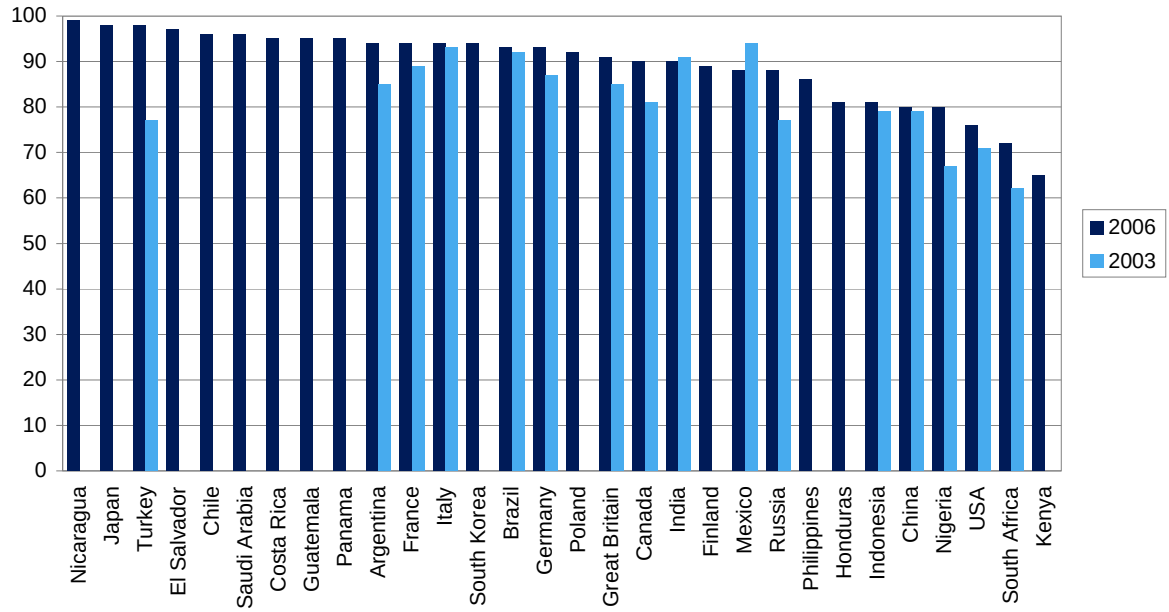


Figure 1 - Climate Change as 'Very Serious' and 'Somewhat Serious'
(*source: GlobeScan*)

The limitations of these data are obvious. However, they do provide some support for the assertion that a ‘tipping point’ has been passed, at least for those countries where a substantial majority of people regard the problem as ‘very serious’.

It is also worth noting that few people regard the problem as ‘not serious’. The US tops this measure with 21 per cent (down from 24 per cent in 2003). It also has the most people who regard the problem as ‘not at all serious’ – 9 per cent, down from 11 per cent in 2003.

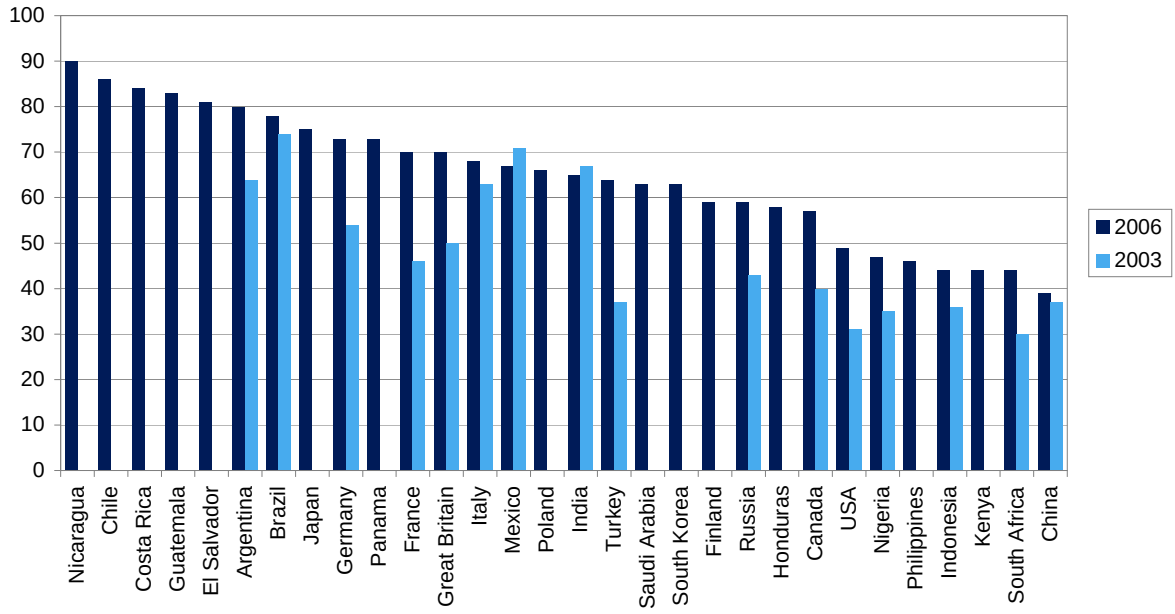


Figure 2 - Climate Change as ‘Very Serious’
(*source: GlobeScan*)

Perceptions in 2007

As explained, the World Service/GlobeScan 2007 data are not compatible with earlier findings, but they do provide more detail.

Awareness of climate change: A global average of 70 per cent of people had heard or read ‘a great deal’ or ‘some’ about global warming and climate change, versus 8 per cent ‘not very much’ or ‘nothing’. Awareness was highest of all in South Korea (where 94 per cent had heard or read ‘a great deal’ or ‘some’), followed by France (92 per cent) and the UK (90 per cent). The next two countries, though, were Australia and

the US (90 and 89 per cent respectively), suggesting that awareness of climate change did not follow the simplistic transatlantic rift that might be supposed, or that (cross-checking against 2006 data) awareness necessarily translates into concern. Chinese awareness of climate change was also above average (72 per cent). Perhaps the biggest surprise in the survey's findings is Russia (35 per cent): a score less than half that of China, and also substantially lower than that of India (48 per cent), the only other country in the 'G8+5' to score below the average in this survey (Japan was not included, however).

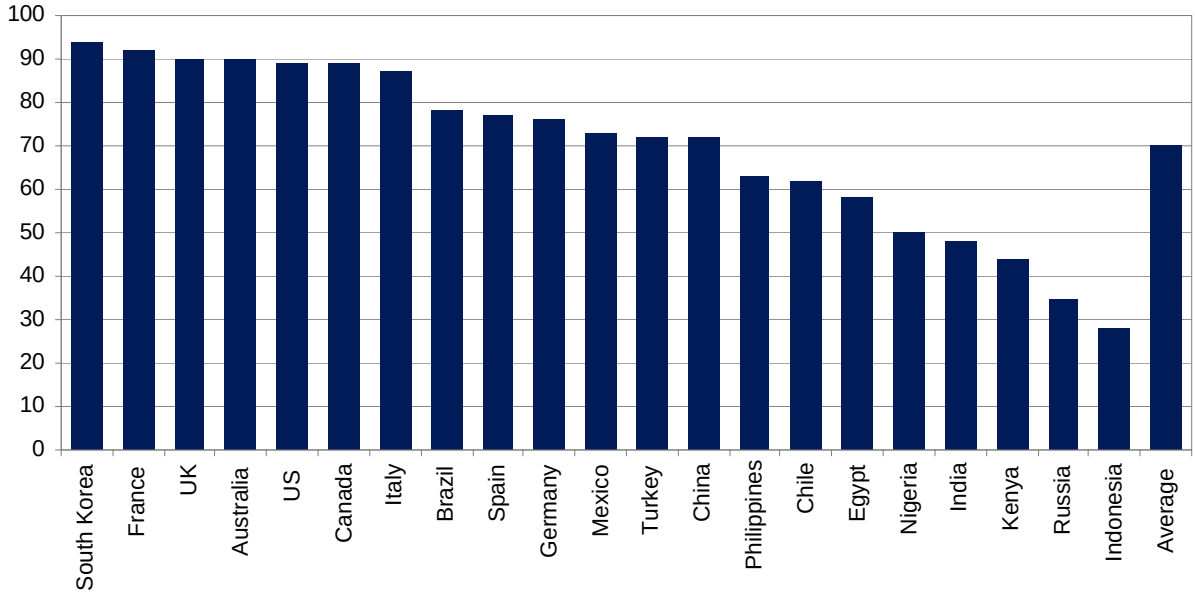


Figure 3 – 'Heard or read about global warming or climate change' (per cent)
(*source: BBC World Service/PIPA/GlobeScan*)

View of human activity as a significant cause of climate change: A global average of 79 per cent of people viewed human activity as a significant cause of climate change, versus 14 per cent who thought human activity was not. Interestingly, the survey found a rather weak correlation between whether people had heard or read about climate change, and whether they believed humans to be a significant cause of it.

While the US has the smallest proportion of people who see humans as a significant cause of climate change among any OECD country, there is still a clear majority of people (71 per cent) who do see humans as at least partially responsible. Interestingly, using 2006 data again, slightly more people seem to be concerned at

the seriousness of climate change than believe it is a manmade problem. The gap between the US and the next two lowest OECD countries (Canada and the UK, on 77 and 78 per cent respectively) is also not great. Overall, the data for countries is relatively tightly clustered between the 70 to 90 per cent band, with only India falling significantly outside it, and also beneath the threshold of an absolute majority who see humans as at least partially responsible for climate change (47 per cent).

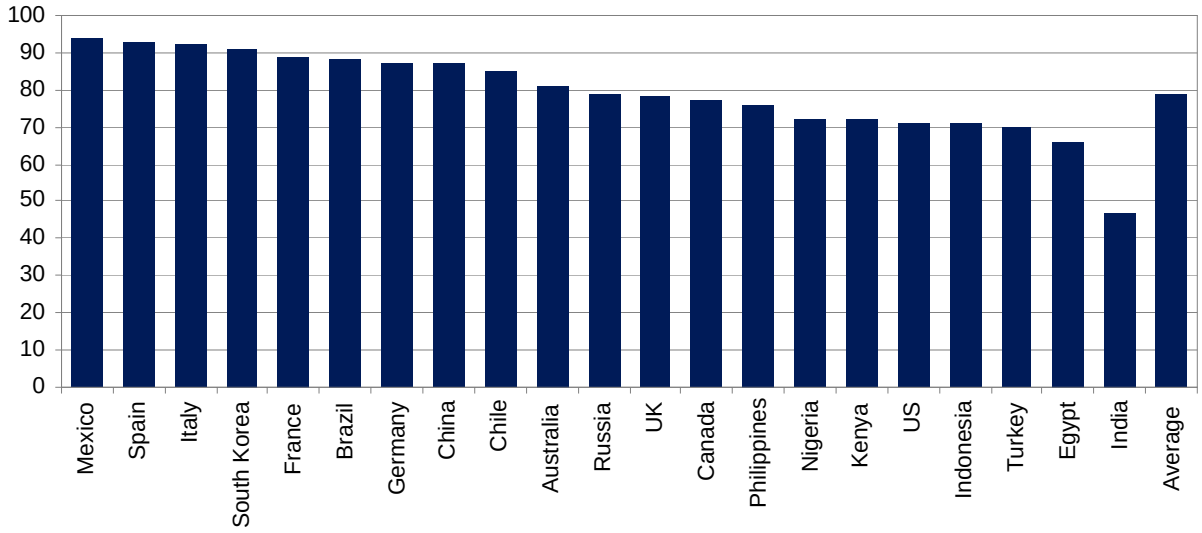


Figure 4 – 'Human activity is a significant cause of climate change' (per cent)
(Source: BBC World Service/PIPA/GlobeScan)

View of necessity of taking action: Overall, a global average of 65 per cent of people thought it was 'necessary to take major steps very soon', versus 25 per cent who believe it 'necessary to take modest steps in coming years' and 6 per cent who think it is 'not necessary to take any steps'.

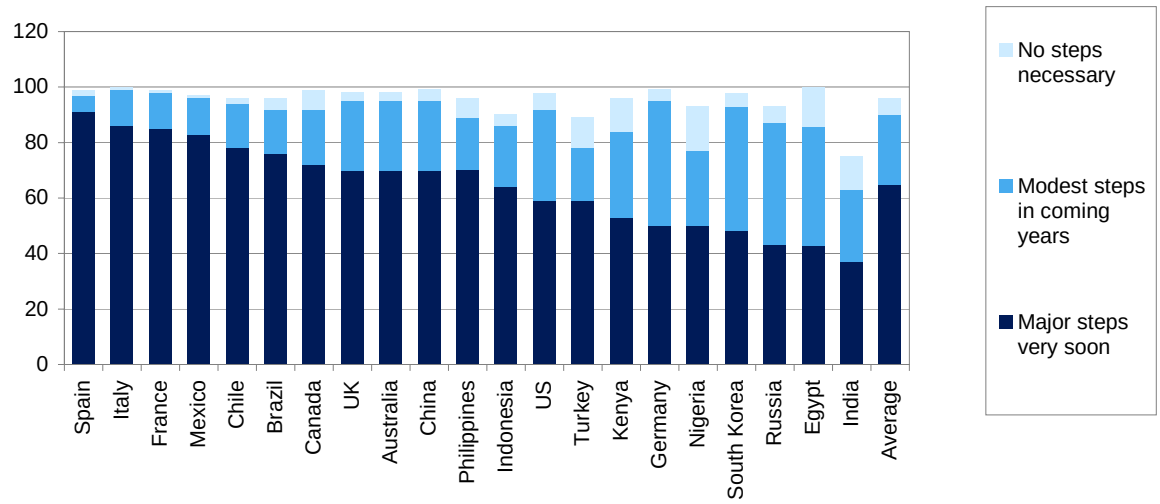


Figure 5 - Views of actions necessary to address climate change (per cent)
(Source: BBC World Service/PIPA/GlobeScan)

Here, the poll's findings get really interesting. First, it is striking that Germany and the UK – the two countries probably perceived to be the strongest leaders pushing for tougher action on climate change at the international level – are not among the very highest scorers for countries in which respondents believe that it is "necessary to take major steps very soon". Second, it is interesting that South Korea shows that it is entirely possible to be very aware indeed of the issue of climate change and strongly convinced that humans are partially responsible, but still find less than half of all respondents answering that major steps are needed soon.

All in all, the poll's findings suggest that there is a global quorum in favour of taking "major steps very soon" on climate change, and one that is by no means limited to developed countries. Add on those respondents in favour of taking "modest steps", and there are outright majorities in every one of the countries polled. At least at first glance, then, this polling data appears to back up the argument that, not only have people worldwide become convinced of the seriousness of climate change, some kind of threshold on action seems to have been passed as well.

Or has it?

A national case study: the UK

Since sufficient data does not yet exist to address this question in more detail at a global level, we now shift focus and 'zoom in' to the United Kingdom – not the most

engaged country in the polling data we looked at above, but certainly towards the top end of the spectrum, and a country where climate change has been high on the political agenda. Has public opinion passed a tipping point on climate change in Britain? In fact, while polling data on the UK does not directly contradict the worldwide survey, it does give a rather different picture.

For instance, a major 2007 report entitled *Tipping Point or Turning Point? – social marketing and climate change*[47] by the polling organisation Ipsos MORI found that while 88 per cent of the public thought that the climate was changing, and only a small minority rejected the idea that humans were causing it, there was nevertheless a large proportion of people who were yet to be fully persuaded. Moreover, the report continued,

> "The public continue to externalise climate change to other people, places and times. It is increasingly perceived as a major global issue with far-reaching consequences for future generations – 45 per cent say it is the most serious threat facing the world today and 53 per cent believe it will impacts significantly on future generations. However, the issue features less prominently nationally and locally, indeed only 9 per cent believe climate change will have a significant impact on them personally.

Furthermore, while the poll found that the British public looked to both government and business for action on climate change, it found that most people felt that their own actions were of little importance: "the public consider the local community and themselves as individuals to be minor actors – only 4 per cent perceive they have a large influence to combat climate change, while 33 per cent feel they have none".

So while the BBC/GlobeScan worldwide survey found large majorities who think that climate change is real and that humans are causing it, the Ipsos MORI poll of the UK found a public confused about climate change, who see the problem as real, but also as a problem that will mainly affect other people in other places. Similarly, while the BBC/GlobeScan survey found a clear quorum in favour of taking 'major steps very soon', the Ipsos MORI data suggest that to the extent that the British public is convinced that major steps are needed, it thinks that it is other actors that need to take them.

The same disjunct is noticeable in another survey of UK perceptions of climate change, this time conducted by YouGov for the Daily Telegraph in November 2006.[48]

While 85 per cent of respondents felt that global warming was happening, and 71 per cent feared that "the lives of future generations will be blighted by unchecked climate change", the poll also found that:

- 65 per cent opposed an increase in tax on petrol and diesel;
- Only 27 per cent would "definitely" be willing to take fewer holidays abroad;
- Just 25 per cent were willing to drive less; and
- Only 26 per cent were prepared to use fewer electrical appliances around the home

A similar picture is presented by the UK Government's own figures about public action on climate change, which find that:

- Less than 1 per cent of the population has switched to an energy company supplying renewable-sourced electricity;
- Under 0.3 per cent has installed a form a renewable micro-generation such as solar PV or thermal panels;
- Purchases of highly-efficient cars represent less than 0.2 per cent of new cars sold; and
- Just 2 per cent of people claim to offset their emissions from flying.[49]

A diversity of narratives: the qualitative dimension

Quantitative data can only take us so far, especially when its breadth and reach limits the analysis that is possible. With the datasets currently on offer, we can do little to work out what is driving changing perceptions. We must therefore turn to a qualitative approach for an alternative perspective.

Available tools include 'discourse analysis' (which as its name suggests, assesses the various vocabularies, narratives and stories that are at play in a given debate) or 'strategic frame analysis', an approach developed by the US-based Frameworks Institute. As the Frameworks Institute itself explains, "framing refers to the subtle selection of certain aspects of an issue in order to cue a specific response; as researchers have shown, the way an issue is framed explains who is responsible, and

suggests potential solutions conveyed by images, stereotypes, messengers and metaphors".[50]

Let's look at a specific example of this kind of approach working in practice. In the Institute for Public Policy Research report *Warm Words: how are we telling the climate story and can we tell it better?,* authors Gill Ereaut and Nat Segnit analysed debate about climate change in Britain, and identify a range of distinct climate change 'repertoires' – narratives used by different tribes of opinion to make sense of climate change through the various lenses that differentiate them.[51]

In overall terms, they clustered the repertoires into three groups. One, the *Alarmist* repertoire, proclaims that 'it's too late – it's the end of the world!'. Here, the kind of messages to be found in the media include examples such as

> **Alarmism** ('We're all going to die!'): *"The climate of fear" (Sunday Times) … "A world of climate chaos spiralling out of control" (The Independent) … "The Earth has passed the point of no return" (James Lovelock, author of the Gaia theory) … "Civilisational collapse is the likely outcome if [fossil fuel] use rises" (Mark Lynas, author of High Tide)*

In other words, the authors summarise succinctly, "we might as well slit our wrists, or carry on polluting". Here, climate change is "awesome, terrible, immense, beyond human control"; accordingly, it is common in campaigning materials, from the Department of the Environment to the Stop Climate Chaos NGO coalition.

The second group of repertoires is clustered around an overall *Optimistic* repertoire that essentially says 'it'll be alright' – without any particular action having to be taken. Within this grouping, the authors identify six distinct points of view:

> **Settlerdom** ('what's all the fuss about?'): *"It's not going to happen in my lifetime" (Vox pop, The Politics Show) … "When it's a cold day they say it's the end of the world, when it's a hot day the opposite" (Vox pop, The Politics Show) … "The doom-mongers… are always coming up with contradictions" (The Daily Mail)*
>
> **British comic nihilism** ('Oh, bugger it and open another bottle!'): *"Global warming has a lot to answer for. According to the scare stories, by 2050 Kent's chalky hillsides will be full of luxuriant vines, the oast houses will be turned into wineries…" (The Daily Telegraph)*

Rhetorical scepticism ('It's bad science, over-hyped'): *"A massive scam based on flawed computer modelling, bad science, and an anti-western ideology … a pack of lies and propaganda" (Melanie Phillips, Daily Mail columnist) … "Delusions of omniscience" (Robert Matthews, Financial Times, referring to scientists)*

Free market protection ('Ah, but what you haven't thought of is…'): *"The trouble is that we would all be too impoverished to cope with the consequences" (Philip Stott, leading UK climate sceptic) … "Even if we shut down every fossil-fuel power station, crushed every car and grounded every aircraft, the Earth's climate would still continue to change" (The Sunday Telegraph)*

'Expert' denial ('I beg to differ…'): *"The science of global warming is not settled, not as long as different methods of measuring temperatures give conflicting answers, not as long as weather satellites and weather balloons show little if any warming in the past 25 years" (Fred Singer, leading US climate sceptic) … "Every generation has had an apocalyptic climate myth" (Philip Stott, leading UK climate sceptic)*

Warming is good ('Relax, don't worry'): *"Global yields of wheat and rice are expected to rise by 18 per cent" (Sunday Telegraph) … "Yes, it will be warmer in the tropics, but it was probably that warm 100 million years ago in the tropics and lfe, though very different, was nowhere near to being extinguished" (Dr Thomas Crowley, Duke University)*

Third and finally, there is a *Pragmatic optimistic* repertoire, which says 'it'll be alright – *if* we do something'. Here, there are three sub-categories:

Techno-optimism *"My vision is for 'green fossil fuels' with much of their CO_2 captured and sequestrated underground" (Jeroen van der Veer, CEO of Shell) … "Our plans to generate electricity will shock you" (BP) … "Woking Borough Council has extensively used micro-generation methods – solar panels, small wind turbines, and a static fuel cell – together with energy efficiency measures. Both have cut carbon emissions." (The Guardian)*

David and Goliath ('A small number can change the world'): *"Charges against climate criminals include fraud, deception and putting the lives of*

millions of people at risk" (Greenpeace) … "Get Your Filthy Hands Off My Future" (Friends of the Earth) … "Just £3 a month will help Greenpeace bring about change…" (Greenpeace)

Small actions ('I'm doing my bit for the planet – and maybe my pocket'): *"It's all about … small changes" (Carbon Trust DVD) … "There are now so many ways to green your life that you've no excuse not to" (The Independent on Sunday) … "I can make a difference" (Energy Saving Trust advertisement) ... "Join the thousands of businesses saving millions of pounds on energy" (Carbon Trust)*

Conclusion

Comparing the quantitative and qualitative data allows us to inch towards some tentative conclusions.

First, it seems clear that, while there may be a consensus about the climate change *problem*, the debate about *`solutions* has barely begun.

People around the world seem convinced that climate change is real and, to a slightly lesser extent, that it is caused at least in part by humans. However, the problem is not necessarily an immediate one for them. Moreover, merely to observe that majorities in multiple countries think that 'major steps' are needed 'very soon' overlooks a fundamental point. There is little consensus about *what these steps should be* or *who should take them*. Few people are prepared to take expensive steps on their own behalf until these questions are settled.

The polling data we have only take us so far. If there has been a tipping point, what led to it? We don't really know if it was Al Gore earning his prize, the IPCC's position percolating out through opinion formers, people noticing changes in the weather, or politicians such as Angela Merkel leading from the front. Neither can we tell which data sources different groups of people are *programmed* to go looking for. People 'frame' the world in different ways and tend to look for facts to fit their frame. Faced by a contradiction, it's easier for them to look for 'better' facts than it is for them to construct a better frame.[52] These deeper issues – of people's sense of identity and the stories they use to make sense of the world – are hard, though not impossible, to capture in an opinion poll.[53] This is where qualitative approaches help out. They help

us switch from a focus on the ‘public’ towards a nuanced view of numerous ‘publics’, and then to burrow down into what matters for each of these groups.

All of which leads us to our second conclusion: unless we move beyond both aggregate data and a fact-centric world view, we will have little understanding of the deeper forces driving the debate. This is *especially* true when we are exploring the ‘solutions debate’ rather than the ‘problem debate’. The impact of climate change can easily be seen as a distant thing, but emissions reductions have a more immediate impact, as tension in countries struggling to meet their Kyoto commitments has shown.

This is where we hit obvious limits of IPPR’s discourse analysis. The ‘repertoires’ identified above are specific to Britain. Patterns of opinion will differ markedly in other countries. Similarly, were the lens of analysis to be focused on, say, the policy-making elites that discuss climate change at the supranational level, we would find another set of tribes; those who see climate primarily as a security issue; as an investment issue; as a global governance issue; as a market issue; as an issue of North-South equality, and so on.

Faced with so many possible ways of viewing the problem, it is clear that we need – and currently lack – a filter to sort the important from the unimportant. We don’t know who will *matter* in the climate debate in the years to come. Which groups will drive for a solution? Which will be more cautious or block progress altogether? And what alliances will emerge as the work to develop a post-Kyoto framework begins to galvanise interest groups from all sides, unlock funding for them to act, and provide them with an international stage on which to make their presence felt?

Three ¦ Putting it all together

The centrality of politics and perceptions

We have now looked at climate change from two different angles. Section 1 presented a historical narrative; Section 2, quantitative and qualitative research findings.

The ‘narrative’ perspective showed climate change’s steady rise to prominence as one of the major political issues of the modern age. The ‘research’ perspective threw further light on why this happened, exploring some of the factors driving public awareness. Some common themes emerged from the two sections. In particular, we have focused on the way in which ‘spikes’ tend to drive an upward trend in interest and concern, our limited understanding of key influencers, and the resulting uncertainty about what is driving the debate.

We have also distinguished between a ‘problems’ and ‘solutions’ debate, arguing that, while the former is mature and has reached a relatively settled consensus, the latter is immature and muddled. Of course, new findings on the extent of the problem will continue to emerge. However, their main impact is likely to be on whether solutions should be sought urgently or not, and how radical action should be. The ‘solutions’ debate is not about science, but about politics and economics. Which solutions will be favoured? Who will back and resist them? How much will they cost? And what benefits will they deliver?

The direction of this debate will depend on how deep public concern is and on whether what people ‘want’ (either consciously, or as expressed by their behaviour) in different countries diverges or converges. Sufficiently-motivated actors (whether governmental or non-governmental) will be able to shape the debate, but only if they can understand it first. Others will be able to muster sufficient power to disrupt an emerging consensus. This is an asymmetrical conflict: ‘winning the argument’ will require more energy than exerting ‘a blocking vote’. Governments, meanwhile, will be able to move ahead of their electorates, but not a great distance. Perhaps the best analogy is with politics in other transnational arenas such as trade or the European Union. Technorats will only have the power to push an issue so far. It can be one thing to strike a deal at an international meeting, another to ratify it at home, as can be seen from the fate of the European Constitution in referenda in France and the

Netherlands. The lessons of the Doha trade round are also salutary: stalemate, despite a proclaimed willingness on all sides to strike a deal.

Information: the oxygen of consensus

Understanding the 'solutions' debate matters – but it matters to different players for different reasons. Consider the needs of businesses and governments, for example.

Above all, businesses need to be able to make an informed estimate of the future price of carbon, a price that will rise and fall according to government action on climate change (as well as a number of other factors). The stakes are high, with trillions of dollars of investment decisions in play. *Understanding* the 'solutions' debate is therefore a potential source of comparative advantage for businesses, even before business lobbies start to think about whether they can *influence* the direction of that debate.

Governments, meanwhile, face a double challenge. Domestically, they need to *understand* the 'base' from which they can negotiate future commitments and the impact that implementing current commitments is having on that base. They will also have an interest in *influencing* behaviour domestically. Internationally, however, they face a much more complex problem. They also need to *understand* the state of the national debate for each of their major negotiating partners, and then consider the prospects of acting to *influence* it if is settling into a consensus that is detrimental to their interests.

Furthermore, at a collective level, 'deal makers' and 'deal breakers' have different informational incentives. Deal breakers have a hard time if they fight a conventional battle. This was the lesson of the Global Climate Coalition. Guerrilla warfare is a better option for them, slowing progress rather than seeking to block it, disrupting their opponents, rather than confronting them head on. Deal *makers*, on the other hand, benefit from openness. They need to get everyone on the same page, building a consensus 'snowball' that grows as it rolls. It is therefore:

- Strongly in the advantage of deal makers to increase access to information and to ensure these information resources are shared wherever possible. They need to play an open hand.

- Deal breakers, however, should do the opposite – keep their own information close to their chest and discredit knowledge provided by others as far as possible.

For deal makers, in other words, knowledge and information about the politics of climate change is itself a *global public good*. Its presence builds shared awareness and increases the chances of engagement; its absence removes essential fuel from the debate and makes a stalemate more likely.

Here, the IPCC provides a model. It has informed and then stabilised the 'problem debate'. We need a similar knowledge bank now that it is politics, not science, that is at stake.

Overcoming the data deficit: towards a 'state of the debate'

So what do we need to know? Future information/knowledge requirements can be broken down along four dimensions:

- *Basic data* on national climate performance, given that countries with a current comparative advantage in emissions, energy intensity and low carbon *technologies* are more likely to favour future action that increases the price of carbon.

- An understanding of the broad currents of *public opinion* – the kind of data that were discussed in section 2.

- An understanding of who the *key influencers* are within a key society and of the role they are playing in shaping the broader debate.

- An insight into the role *business* is playing, both in terms of investment patterns and its lobbying behaviour.

At present, climate performance data is surprisingly hard to find.[54] One would expect that, in moments, it would be possible to find up-to-date figures and attention-grabbing rankings for a country's per capita emissions, its greenhouse gas intensity, and for any domestic commitments it has taken on board since Kyoto. These data exist, but they are hard to find and poorly presented even when they are available. Trend data is even harder to access. Assessing changes in a country's relative strength is therefore difficult. Currently, countries don't have to *earn* leadership through their actions, they can simply assert it in a fiery speech or two. Nor are they even under pressure to define their terms. Bandy around a concentration target like 450 parts per million (ppm) and no-one will even think to ask if you are referring to

carbon dioxide or the CO_2 equivalent of all greenhouse gases (which themselves are measured in two different ways).

Public polling data we have discussed at length, and its weakness should be evident by now. Even the GlobeScan research only stretches back to 2003, six years after Kyoto was agreed. Meanwhile, our understanding of influencers is even more limited. Thanks to the IPCC, we know – more or less – what scientists think. Analyse the panel's reports and we can see how that thinking has changed over time. But we have no equivalent analysis of how the media, in aggregate, is treating the issue in different countries, and how this treatment is changing over time. What are the editorial positions of each outlet? What do op-eds tell us about opinion among the country's elite? The same applies to policy-makers. What position has each major political party taken on climate change in the world's main democracies? Where does each head of state currently stand? What kind of agreement would the parliament be prepared to ratify?

As a purely illustrative exercise, we conducted an informal straw poll of a range of UK policymakers, business people, campaigners and academics, to explore their thoughts about the state of the climate change debate, what sources had influenced their thinking, and what they felt would drive the discussion in future. As figure 6 below shows, interesting findings can be unearthed even with quite limited resources.

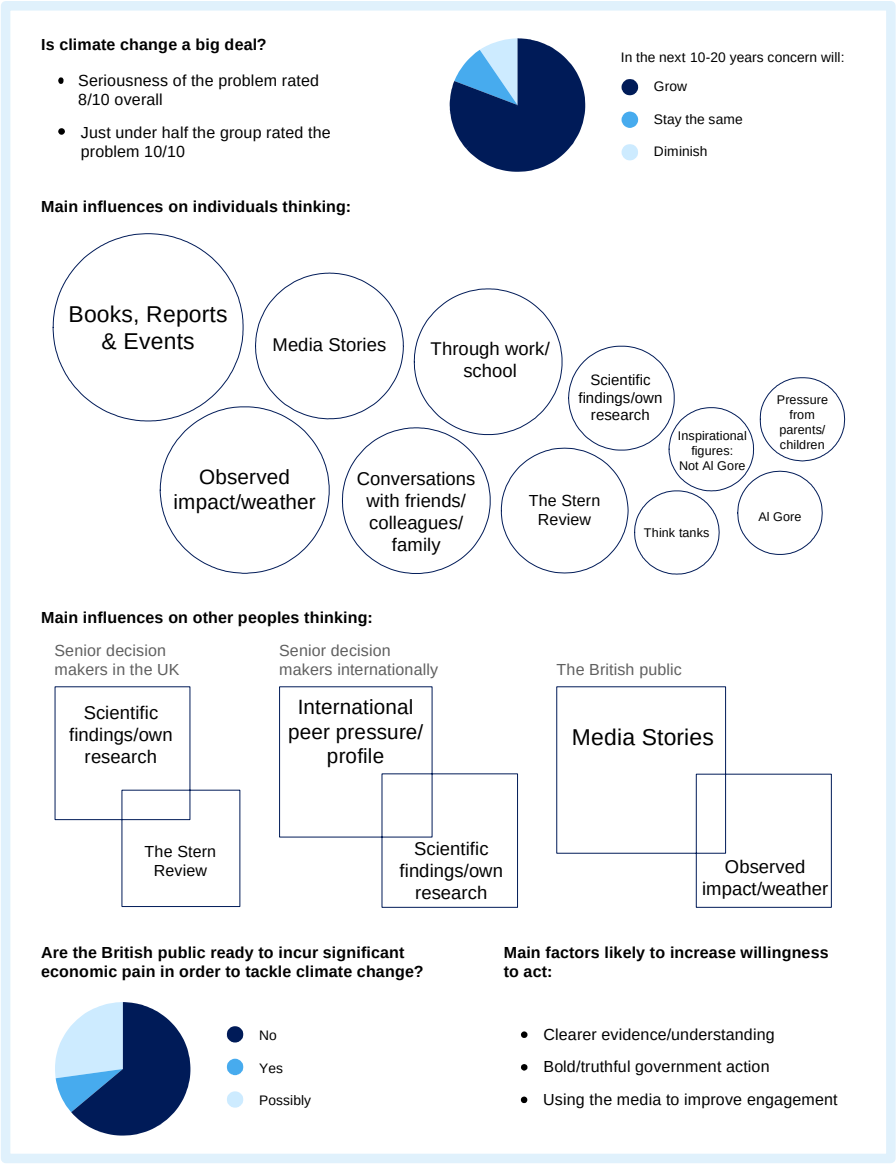


Figure 6 – A straw poll of UK opinion formers

And then there's the need to map networks within countries and across borders. We know that some people and some groups have disproportionate *influence* over the climate change debate. But concepts drawn from network theory are yet to be applied in a systematic way to the field. Worse than that, governments are working without any *theory* of what influence is and how it works, though some of the networked players (campaigners, lobby groups and the like) may be more sophisticated in this regard.

With business, the problem is slightly different. There are sources of information, but they are fragmented and need aggregation. The Carbon Disclosure Project, for

example, represents institutional investors with $41 trillion of assets under management.[55] It is gradually building a database of climate change and greenhouse gas emissions data from large companies. It approached 2,400 companies in 2007. Merrill Lynch and HSBC have both recently launched low carbon indices aimed at investors.[56] The World Economic Forum, meanwhile, assesses business opinion on a variety of areas including climate change; its Executive Opinion Survey questioned over 11,000 business leaders in 131 countries in 2006.[57]

But as far as we know, no-one is systematically tracking the activities of business lobbies: a significant omission, given the role of the Global Climate Coalition in the Kyoto phase of the solutions debate. More importantly, available information has not been pulled together into a format that allows comparison of the role being played by business in different countries, or, at a global level, of the impact of different sectors.

Turn to a different issue – international development – and we can see an example of what can be achieved with better data aggregation and integration. Want a ranking of where countries sit on the rich/poor continuum? Then look no further than the Human Development Index which "measures the average achievements in a country in three basic dimensions of human development: a long and healthy life, knowledge and a decent standard of living."[58] Data are available for 177 countries and stretch back to 1980. There is a plethora of similar measures, some covering areas that are hard to quantify such as corruption or democracy.

The data for HIV/AIDS are especially impressive in the way they allow comparisons of epidemics across countries, with figures that cover facts, behaviour and policy responses:

- *Basic facts* – number of people living with HIV; prevalence rate; deaths due to AIDS; number of AIDS orphans etc.
- *Behavioural data* – proportion of men and women who have had casual sex in the past twelve months; who used a condom when they last had casual sex; who had sex before they were fifteen; and who correctly identify ways to prevent HIV.
- *Policy data* – in particular, how much of its own money a government is spending on the epidemic.

The data are easy to find, easy to read and have been carefully selected. In particular, the behavioural data use a few simple figures to provide a snapshot of

fundamental human drivers. They're also there for every country in a standard format. Read them and you feel you really begin to *know* a country's epidemic. A similar window onto the climate debate is yet to be opened up.

Counter currents

As the 'solutions debate' intensifies, doubts will intensify too; as the psychotherapist Carl Jung wrote, "it is only at night that no shadow exists."[59] And as we have already seen, doubters will be most powerful if they can position themselves as guerrillas or insurgents, capitalising on 'David and Goliath' metaphors, as the UK's fuel protestors did to great effect in October 2000.

The British documentary '*The Great Global Warming Swindle*', shown on Channel 4 in March 2007, revealed a pent up desire among some constituencies to hear 'the other side of the story'.[60] It was a highly effective piece of propaganda, designed to hit people on an emotional level, with all of the main messages concentrated into the programme's first seventy seconds. "The ice is melting. The sea is rising. Hurricanes are blowing. And it's all your fault. Scared? Don't be. It's not true."

Online responses to the documentary on blogs and other websites – which served, in effect, as a free focus group for anyone interested in the debate – showed which messages in the film resonated most. Among them were beliefs such as that 'they've got the science wrong (and they're trying to suppress dissent)'; 'it's a vast left-wing conspiracy'; 'it's a religion – and we're being persecuted'; 'people are making money out of this' or 'it's the poor who are going to suffer'.

We need to expect much more of this. Inevitably, people will react emotionally as they feel their livelihoods, ways of life or treasured possessions threatened. The world has already seen many anti-globalisation (effectively, anti-change) protests in locations from Seattle to the French countryside. It may not be too long before the world sees its first riot against climate change policy in Paris or Mumbai.

A 'political conditions' knowledge bank would play a central role as a point of reference, countering the disinformation (deliberate or otherwise) that will inevitably flourish as the conversation becomes more heated. The need for such a reference point is already acute. For instance, a recent article in *The National Review*, a prime US conservative magazine, asked

> “Has anyone noticed, for example, that global temperature has been flat for the last decade, after two decades of slow and steady increase from 1980 to 1998? Most of the climate models suggest global temperature should be consistently warming with the rise of greenhouse gases, but it has stopped. This increasingly inconvenient truth will eventually become too obvious for even the media to ignore.[61]

The data to rebut the claims in this article are available – but only for those (unlike most journalists) with plenty of time to look for them. In the context of solution rather than problem, the informational deficit is even more acute. So whilst President Bush no longer dismisses the evidence for the problem of climate change, he feels free to present himself as a ‘thought leader’ on solving the issue. If, by contrast, the President of Nigeria attempted to portray the country as a world leader on anti-corruption, the answer would be simple: just look at the Transparency International Index.

Correcting the knowledge deficit

As we have already noted, the absence of this basic information is a classic public good problem. The gap results from a range of drivers, including:

- *Fragmentation* – everyone does their own research, so no-one sees the full picture.
- *Lack of economies of scale* – a small internal audience means it’s not worth doing the job properly (instinct or five minutes on Google will do).
- *National bias* – resources are held domestically, so countries study the problem nationally, but don’t join this up to a bigger picture.
- *Knowledge hoarding* – organisations traditionally ‘do their thinking on the inside’.
- *Attention deficit* – organisations ‘do it once, but do something different the next year’, thereby foregoing the gains that would come from building on historical data.
- *Data bias* – even when research *is* conducted, too little is spent on analysis, with the result that information is never turned into knowledge, and hence fails to change the decisions that are made.

Reversing this dynamic depends on understanding the process of *understanding* the solutions debate as an opportunity to *influence it*, through means such as building a common language and a shared set of concepts and understanding (an 'operating system', as we describe it), and shaping the debate as the Stern Review so successfully did. The principles for a more successful approach might therefore look like this:

- *Knowledge pooling* – do it together.
- *Economies of scale* – do it once, do it properly. The more who participate, the more it's worth spending; and the more we know.
- *Think quality* – focus investment on analysis, presentation and dissemination; then spend what you can afford on data. In other words, it is better to 'make do' on the data in year 1 and build up a more comprehensive dataset with time than to gather a gold standard data set that sits on a website which no-one looks at.
- *Think long-term* – even in a best case scenario – in which a comprehensive post 2012 agreement is concluded in 2009, and ratified within a year or so of then – the agreement will still need refining as science continues to improve, and the implementation will still be painful, as Kyoto shows. An alternative scenario is one closer to the Doha trade round, where a stalemate requires a generation of political struggle, painfully inching towards a solution. Either way, the need for decisive information will not end in the next few years.

'I will if you will': an integrating narrative?

Building this knowledge base should only be seen as a starting point. It seems clear that major themes discussed in the narrative history in section 1 will continue to influence the development of the debate. Take the position of the United States. Historically, it has been prepared to engage, but with the greatest of reluctance. The idea that Kyoto would have been ratified but for George Bush is wishful thinking; a Democrat administration would have faced a very hostile Senate. The same drivers still influence the US's position: a reluctance to see national interest sacrificed, especially if there is a feeling (however unjustified) that someone, somewhere else is not doing their bit. This is not, we believe, an example of American exceptionalism. The same tussle between *power* and *fairness* is certain to intensify in many other countries if there is any serious prospect of an agreement that will cause pain,

however short-term. We should start mapping these underlying drivers before they reach their full force.

Similarly, at individual level, it is important to understand how various elements of the solutions debate interact with each other. Within this debate, we would argue that the most important interaction is between the 'alarmism' story and the 'small actions' story. As we have seen, 'alarmism' makes extensive use of catastrophic language to paint a vivid picture of a challenge that risks overwhelming humanity's ability to cope. Climate change is here presented as the most vital and urgent global problem faced by humanity – a 'weapon of mass destruction'. On the other hand, the 'small actions' story tells us that climate change is manageable; indeed, overcoming it will entail a little minor inconvenience, no more. Far from having to make massive changes now to our lifestyles, the 'small actions' story tells us that all we need to do is turn our televisions off rather than leave them on standby; change our light bulbs to energy-efficient ones; recycle our waste.

Compared side by side as they are here, there is an immediate and obvious contrast between the two stories. One is arresting and meaningful, but leads to despair and inaction. The other is flat and enervating, even as it attempts to encourage people to commit to change. "Stressing the large scale of global warming and then telling people they can solve it through small actions like changing a light bulb evokes a disconnect that undermines credibility and encourages people to think that action is meaningless," argues IPPR's Simon Retallack, with great justification.[62]

As concrete solutions are put on the table, governments need to chart a middle way between these two extremes, and provide clarity on how individual actions will add up to a coherent whole and what it will look like. Increasingly, publics are likely to demand clarity on where we are actually trying to get to: a destination, not just a journey.

Conclusion

We began this paper by asking why climate change has become a big political issue; what's driving awareness of it among diverse publics; whether climate change will stay high on the agenda; and how future perceptions of the issue might evolve.

All of these questions are impossible to answer precisely. While polling is an indispensable part of the analyst's arsenal for understanding the social dynamics of

climate change, too many of the determinants of what and how people think about the issue – values, narratives, stories, social tribes, images, myths – are resistant to quantification. Yet the impossibility of precise, quantified answers does not preclude the possibility of structured analysis of the human dimensions of climate change.

True, these analytical systems remain – for now – in their infancy. We have invested millions of dollars in understanding the scientific and technological dimensions of climate change, and a pittance in understanding its social, behavioural and human sides. That oversight has not mattered much for our ability to comprehend climate change as a problem. As we discussed above in the section on history, the science has been the backbone of comprehension of the problem – even if non-rational factors (like images of polar bears stranded on ice floes, or chance friendships between particular scientists and particular journalists) have mattered a lot more than is often realised. The input from science has been institutionalised through the IPCC.

But the focus is now switching, as we have argued, from a ‘problems’ to a ‘solutions’ debate. Informing this debate will be vital to those who wish to engage in forming solutions. The lack of clarity favours those who would prefer inaction. Our conclusion then is that – for dealmakers, at least, but also for those who most want a predictable environment within which they can make investment decisions – developing a shared awareness of the climate change politics should be a vital priority.

Of course, an *IPCC for perceptions and politics* could not, and should not, be a formal intergovernmental mechanism. Political analysis will never be a sufficiently precise science to allow for that. But the simple iconic presentation of well-designed information can play a huge role in shifting debates, while a deeper mapping of what one climate expert has called the ‘complex geography of the imagination’ could prove decisive in any serious move towards a low carbon economy.

Governments and businesses face huge financial risks as they navigate the climate debate. At present, their actions are based on vague, and mostly intuitive, views of what is driving change. Many professionals assume they know more than they do, or that climate change is basically a scientific and technical problem. This view is mistaken and now is an especially good time to correct it. The push for a replacement for the Kyoto Protocol is now beginning in earnest. This will place stress on existing beliefs, force apart current coalitions, and create the circumstances for new ones to be born. That’s why it’s now time to understand, study and track the state of the climate change debate.

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