

# Why We Resist the Truth About Climate Change

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Clive Hamilton<sup>1</sup>

## Repudiating science

Let me begin with a pregnant fact about United States' voters. In 1997 there was virtually no difference between Democratic and Republican voters in their views on global warming, with around half saying warming had begun. In 2008, reflecting the accumulation and dissemination of scientific evidence, the proportion of Democratic voters taking this view had risen from 52 to 76 per cent.<sup>2</sup> But the proportion of Republican voters fell from 48 per cent to 42 per cent—a four percent gap had become a 34 per cent gap. What had happened?

The opening of the gulf was due to the fact that Republican Party activists, in collaboration with fossil fuel interests and conservative think tanks, had successfully associated acceptance of global warming science with “liberal” views.<sup>3</sup> In other words, they had activated the human predisposition to adopt views that cement one's connections with cultural groups that strengthen one's definition of self.<sup>4</sup> In the 1990s views on global warming were influenced mostly by attentiveness to the science; now one can make a good guess at an American's opinion on global warming by identifying their views on abortion, same-sex marriage and gun-control.

That global warming has been made a battleground in the wider culture war is most apparent from the political and social views of those who reject climate science outright. In 2008 they accounted for seven per cent of US voters, rising to 18 per cent if those with serious doubts are added.<sup>5</sup> Among those who dismiss climate science, 76 per cent describe themselves as “conservative” and only three per cent as “liberal” (with the rest “moderate”). They overwhelmingly oppose redistributive policies, programs to reduce poverty and regulation of business. They prefer to watch Fox News and listen to Rush Limbaugh. Like those whose opinions they value, these

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<sup>1</sup> Professor of Public Ethics, Centre for Applied Philosophy and Public Ethics, Canberra  
[mail@clivehamilton.net.au](mailto:mail@clivehamilton.net.au). Thanks are due to Riley Dunlap for comments on a draft.

<sup>2</sup> Edward Maibach, Connie Roser-Renouf and Anthony Leiserowitz, *Global Warming's "Six Americas" 2009: An audience segmentation*, Yale Project on Climate Change and George Mason University Center for Climate Change Communication, 2009

<sup>3</sup> The story has been well told by: Peter Jacques, Riley E. Dunlap and Mark Freeman, 'The organisation of denial: Conservative think tanks and environmental scepticism', *Environmental Politics*, 17(3), June 2008; Aaron McCright and Riley Dunlap, 'Anti-reflexivity: The American Conservative Movement's Success in Undermining Climate Science and Policy', *Theory, Culture & Society*, 27(2-3): 100-133, 2010; and, Naomi Oreskes and Erik Conway, *Merchants of Doubt*, Bloomsbury Press, New York, 2010.

<sup>4</sup> See, eg., Dan Kahan, 'Fixing the communications failure', *Nature*, 463: 296-7, 21 January 2010

<sup>5</sup> Maibach et al., *Global Warming's "Six Americas"*

climate deniers are disproportionately white, male and conservative—those who feel their cultural identity most threatened by the implications of climate change.<sup>6</sup>

Those on the left are as predisposed to sift evidence through ideological filters; but in the case of global warming it happens that the evidence overwhelmingly endorses the liberal beliefs that unrestrained capitalism is jeopardising future well-being, that comprehensive government intervention is needed, and that the environment movement was right all along. For neo-conservatives accepting these is intolerable, and it is easier emotionally and more convenient politically to reject climate science.

The United States is a deeply polarised society. In Europe, the absence of a long-running and rancorous culture war explains the relative weakness of climate denial. Where it does prevail it is associated with parties of the far right. It seems perfectly natural, for example, that the British National Party should adopt a denialist stance. In Italy and some former Eastern bloc countries, where anti-communism and remnant-fascism still influence right-wing politics, denial is more potent.

The aggressive adoption of climate denial by neo-conservatism was symbolised by the parting gesture of George W. Bush at his last G8 summit in 2008. Leaving the room he turned to the assembled leaders to say: “Goodbye from the world’s biggest polluter”.<sup>7</sup> It was a defiant “joke” reflecting the way US neo-conservatives define themselves by their repudiation of the “other”, in this case, the internationalist, environmentally-concerned, self-doubting enemies of “the American way of life”. Conceding ground on global warming would have meant bridging two implacably opposed worldviews. Bush’s words, and the fist pump that accompanied them, were read by those present as a two-fingered salute to everything the Texan opposed.

### **The fragility of the Enlightenment**

In these circumstances, facts quail before beliefs, and there is something poignant about scientists who continue to adhere to the idea that people repudiate climate science because they suffer from inadequacy of information. In fact, denial is due to a surplus of culture rather than a deficit of information.<sup>8</sup> Once people have made up their minds, providing contrary evidence can actually make them more resolute,<sup>9</sup> a phenomenon we see at work with the upsurge of climate denial each time the IPCC publishes a report. For those who interpreted “Climategate” as confirmation of their belief that scientists are engaged in a conspiracy, the three or four reports that subsequently vindicated the scientists and the science proved only that the circle of conspirators was wider than previously suspected.

In a curious twist, climate deniers now deploy the arguments first developed by the radical social movements of the 1960s and 1970s to erode the authority of science. This was perhaps first noticed by Bruno Latour when he lamented the way climate

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<sup>6</sup> See Dan Kahan et al., ‘Culture and Identity-Protective Cognition: Explaining the White-Male Effect in Risk Perception’, *Journal of Empirical Legal Studies*, 4(3): 465-505, November 2007

<sup>7</sup> <http://www.independent.co.uk/news/world/politics/bush-to-g8-goodbye-from-the-worlds-biggest-polluter-863911.html>

<sup>8</sup> The evidence contradicting the information deficit model is overwhelming, so that those who continue to cleave to it, *ipso facto*, demonstrate its falsity. Faith in the power of information prevails over the power of information.

<sup>9</sup> Kahan, ‘Fixing the communications failure’

deniers set out to explain away the evidence using a narrative about the social construction of facts.<sup>10</sup> However, while constructivists developed an epistemological critique of science, climate deniers, adopting the heroic mantle of “sceptic”, claim to be protecting official epistemology from internal corrosion. The strategy required an attack on the system of peer-review<sup>11</sup> and sustained attempts to “deconstruct” the motives of climate scientists. They are always on the lookout for biases and prejudices that could lie behind the claims of climate scientists, explaining away the vast accumulation of evidence by impugning the motives of those who collect it. That was the genius of the “Climategate” scandal—the emails were hard evidence that the “hard evidence” had been fabricated. The leaking of routine private exchanges between professional colleagues tarnished the public image of scientists as white-coated experts too preoccupied with their test tubes and retorts to be political.

Since the founding of modern science, matters of fact have been established through the common assent of those qualified to judge under rules laid down in the 17<sup>th</sup> century by the Royal Society. The break from the past lay in the fact that the “potency of knowledge came from nature, not from privileged persons”.<sup>12</sup> “Climategate” allowed deniers to claim that climate science indeed emerged from privileged persons rather than disinterested nature. In their study of Robert Boyle’s struggle to found the new scientific method of experimentation observable by suitably qualified others, Shapin and Schaffer note that “democratic ideals and the exigencies of professional expertise form an unstable compound”.<sup>13</sup> Deniers have adroitly used the instruments of democratic practice to erode the authority of professional expertise, including skilful exploitation of a free media, appeal to freedom of information laws, the mobilisation of a group of vociferous citizens, and the promotion of their own to public office.<sup>14</sup> At least in the United States and Australia, democracy has defeated science.

Innocently pursuing their research, climate scientists were unwittingly destabilising the political and social order. They could not know that the new facts they were uncovering would threaten the existence of powerful industrialists, compel governments to choose between adhering to science and remaining in power, corrode comfortable expectations about the future, expose hidden resentment of technical and cultural elites and, internationally, shatter the post-colonial growth consensus between North and South. Their research has brought us to one of those rare historical fracture points when knowledge diverges from power, portending a long period of struggle before the two are once more aligned.

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<sup>10</sup> Bruno Latour, ‘Why has critique run out of steam? From matters of fact to matters of concern’, *Critical Inquiry*, 30(2), Winter 2004

<sup>11</sup> See, eg., Frank Furedi, “Science’s peer system needs a review”, *The Weekend Australian*, 20-21 February 2010.

<sup>12</sup> Steven Shapin and Simon Schaffer, *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*, Princeton University Press, Princeton, 1985, p. 298

<sup>13</sup> *Ibid.*, p. 336

<sup>14</sup> Some have also used illegal practices, including hacking into computers and engaging in various “black ops”. See [http://www.clivehamilton.net.au/cms/media/documents/articles/abc\\_denialism\\_series\\_complete.pdf](http://www.clivehamilton.net.au/cms/media/documents/articles/abc_denialism_series_complete.pdf)

## Popular forms of denial

The fragility of Enlightenment thinking appears not only in outright denial of climate science but also in the reluctance of the public to take in the warnings of the scientists. After all, the conservative counter-movement's success in undermining climate science and slowing policy responses would not have been possible unless it had been able to exploit a weakness in the popular psyche—the desire to discount or disbelieve the warnings of scientists.

When climate scientists conclude that, even with optimistic assumption about how quickly emissions can be cut, the world is expected to warm by 4°C this century it is too much to bear.<sup>15</sup> Who can believe that within the life-time of a child born today the planet will be hotter than at any time for 15 million years? When scientists say we will cross tipping points leading to chaotic weather for centuries we retreat to incredulity.

In 1930 Martin Heidegger commented on a rash of popular books that drew on broad philosophical ideas to characterise the contemporary situation and make prophecies about the future. The leading work was Oswald Spengler's *The Decline of the West*, first published in 1918. Today, books such as *The Clash of Civilizations* (Samuel Huntington), *The End of History and the Last Man* (Francis Fukuyama) and *The Collapse of Globalism* (John Ralston Saul) show that the appetite for this kind of world-historical prognosis is undiminished. Heidegger explained their popularity in this way:

Is there anyone who does not wish to know what is coming, so that they can prepare themselves for it, so as to be less burdened, less preoccupied and affected by the present!<sup>16</sup>

Well, the answer is 'yes', there are many who would prefer not to know what is coming if the forecast is based on distressing facts rather than entertaining speculation. And that is why, to a greater or lesser degree, we are all climate deniers.

If the Earth seems to be locked on a path leading to a very different climate, a new and much less stable era lasting many centuries before natural processes eventually establish some sort of equilibrium, how do we respond psychologically to the scientific warnings? A paper by Tim Kasser and myself<sup>17</sup> draws on psychological research into the various “coping strategies” we might use to defend against or manage the unpleasant emotions associated with the dangers of a warming globe—fear, anxiety, anger, depression, guilt and helplessness.

Many members of the public engage in what might be called “casual denial”. Less vociferous than outright denial of the science, casual denial relies on inner narratives such as “Environmentalists always exaggerate”, “Didn't those leaked emails show it's

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<sup>15</sup> See Clive Hamilton, *Requiem for a Species*, Earthscan, London, 2010, Chapter 1.

<sup>16</sup> Martin Heidegger, *Fundamental Concepts of Metaphysics: World, Finitude, Solitude*, Indiana University Press, Bloomington and Indianapolis, 1995, p. 75

<sup>17</sup> Clive Hamilton and Tim Kasser, 'Psychological Adaptation to the Threats and Stresses of a Four Degree World', A paper for *Four Degrees and Beyond* conference, University of Oxford, 28-30 September 2009 [http://www.clivehamilton.net.au/cms/media/documents/articles/oxford\\_four\\_degrees\\_paper\\_final.pdf](http://www.clivehamilton.net.au/cms/media/documents/articles/oxford_four_degrees_paper_final.pdf)

all rubbish?” and “I’ll worry about it when the scientists make up their minds”. Anxiety can be reduced simply by restricting exposure to upsetting information or viewing it through a cloud of doubt. The desire to disbelieve is activated by conservative news outlets each time they give undue prominence to stories that create the impression that climate scientists cannot agree or that the science is politically tainted.

Most people do not deny climate science, but use various techniques to blunt the emotional impact of the scientific warnings. We might “de-problematise” the threat by making its scale seem smaller, or distance ourselves from it by emphasising the time lapse before the consequences of warming are felt. Narratives such as “Humans have solved these sorts of problems before” and “It won’t affect me much” are effective. Alternatively, we might divert attention from anxious thoughts and unpleasant emotions by engaging in minor behaviour changes (like changing light-bulbs) that mollify feelings of helplessness or guilt.

Blame-shifting is a form of moral disengagement whereby people disavow their responsibility for the problem or the solution. Belittling out-groups can help solidify one’s sense of self and ward off threats to it, a tactic in play whenever we hear someone say: “China builds a new coal-fired power plant every week.” Or we might cultivate indifference to global warming and its implications. Apathy is typically understood as meaning the absence of feeling, but it can often reflect a suppression of feeling that serves a useful psychological function.<sup>18</sup> Who at times has not thought: “If I don’t care I won’t feel bad”?

One of the most widespread methods of avoiding the full force of the warnings is to practice wishful thinking. Cultivating “benign fictions” can be comforting in an often unfriendly world, yet such fictions become dangerous delusions when they are clung to despite overwhelming evidence.<sup>19</sup> The climate debate is rife with wishful thinking, deploying narratives such as “Technology [carbon capture and storage, nuclear power, biochar, geoengineering, etc.] will save us”, “We’ve solved these problems before and we will do it again” or simply “Something will come along”.

History can illuminate the present in a way contemporary analysis cannot. So let me dwell on three historical episodes that can give us a more nuanced understanding of the nature of climate denial. The first, the campaign against Einstein’s general theory of relativity, provides an uncannily complete template for the conservative attack on climate science eight decades later.

### **Anti-relativism in Weimar Germany**

It is hard to imagine a scientific breakthrough more abstract and less politically contentious than Einstein’s general theory of relativity. Yet in Weimar Germany in the 1920s it attracted fierce controversy with conservatives and ultra-Nationalists reading it as a vindication of their opponents—liberals, socialists, pacifists and Jews. They could not separate Einstein’s political views—he was an internationalist and

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<sup>18</sup> Renée Lertzman, ‘The myth of apathy’, *The Ecologist*, 19 June 2008

<sup>19</sup> Shelley Taylor, *Positive Illusions: Creative self-deception and the healthy mind*, New York: Basic Books, 1989

pacifist—from his scientific breakthroughs, and his extraordinary fame made him a prime target in a period of political turmoil.

Nineteen twenty was a turning point. A year earlier a British scientific expedition had used observations of an eclipse to provide empirical confirmation of Einstein's prediction that light could be bent by the gravitational pull of the sun. Little-known to the general public beforehand, Einstein was instantly elevated to the status of the genius who eclipsed Galileo and Newton.<sup>20</sup> But conservative newspapers provided an outlet for anti-relativity activists and scientists with an axe to grind, stoking nationalist and anti-Semitic sentiment among those predisposed to it.<sup>21</sup> In a similar way today, conservative news outlets promote the views of climate deniers and publish stories designed to discredit climate scientists, all with a view to defending an established order seen to be threatened by evidence of a warming globe. As in the Weimer Republic, the effect has been to fuel suspicion of liberals and "elites" by inviting the public to view science through political lenses.

At the height of the storm in 1920, a bemused Einstein wrote to a friend:

"This world is a strange madhouse. Currently, every coachman and every waiter is debating whether relativity theory is correct. Belief in this matter depends on political party affiliation."<sup>22</sup>

The controversy was not confined to Germany. In France, for example, a citizen's attitude to the new theory could be guessed from the stance he or she took on the Dreyfus affair, the scandal surrounding the Jewish army officer falsely convicted of spying in 1894, whose fate divided French society. Anti-Dreyfusards were inclined to reject relativity on political grounds.<sup>23</sup> In Britain, suspicions were less politically grounded but relativity's subversion of Newton was a sensitive issue, leading Einstein to write an encomium for the great English scientist prior to a lecture tour.

Like Einstein's opponents, who denied relativity because of its association with progressive politics, conservative climate deniers follow the maxim that "my enemy's friend is my enemy". Scientists whose research strengthens the claims of environmentalism must be opposed. Conservative climate deniers often link their repudiation of climate science to fears that cultural values are under attack from progressives—witness the natural incorporation of climate denial into the story of elite conspiracy that drives the Tea Party, the movement of those who demand their fair share of injustice.

In Weimar Germany the threat to the cultural order apparently posed by relativity saw Einstein accused of "scientific dadaism", after the anarchistic cultural and artistic movement then at its peak. The epithet is revealing because it reflected the anxiety

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<sup>20</sup> Jeroen van Dongen, "Reactionaries and Einstein's Fame: 'German Scientists for the Preservation of Pure Science', Relativity, and the Bad Nauheim Meeting", *Physics in Perspective*, 9: 212-230, 2007, p. 213

<sup>21</sup> van Dongen, "Reactionaries and Einstein's Fame", p. 219

<sup>22</sup> Quoted by Jeroen van Dongen, "On Einstein's opponents, and other crackpots", *Studies in History and Philosophy of Modern Physics*, 41: 78-80, 2010

<sup>23</sup> David Rowe, "Einstein's Allies and Enemies: Debating Relativity in Germany, 1916-1920" in Vincent Hendricks et al. (eds), *Interactions: Mathematics, Physics and Philosophy, 1860-1930*, Springer, Dordrecht, 2006, p. 234

among conservatives that Einstein's theory would overthrow the established Newtonian understanding of the world, a destabilisation of the physical world that mirrored the subversion of the social order then under way. Relativity's apparent repudiation of absolutes was interpreted by some as yet another sign of moral and intellectual decay. There could not have been a worse time for Einstein's theory to have received such emphatic empirical validation than in the chaotic post-War years.

Although not to be overstated, the turmoil of Weimar Germany has some similarities with the political ferment that characterises the United States today— deep-rooted resentments, the sense of a nation in decline, the fragility of liberal forces, and the rise of an angry populist right. Environmental policy and science have become battlegrounds in a deep ideological divide that emerged as a backlash against the gains of the social movements of the 1960s and 1970s.<sup>24</sup> As we saw, marrying science to politics was a calculated strategy of conservative activists in the 1990s,<sup>25</sup> opening up a gulf between Republican and Democratic voters over their attitudes to climate science. Both anti-relativists and climate deniers justifiably feared that science would enhance the standing of their enemies and they responded by tarnishing science with politics.

Einstein's work was often accused of being un-German, and Nazi ideology would soon be drawing a distinction between Jewish and Aryan mathematics.<sup>26</sup> "Jewish mathematics" served the same political function that the charge of "left-wing science" does in the climate debate today. In the United States, the notion of left-wing science dates to the rise in the 1960s of what has been called "environmental-social impact" science<sup>27</sup> which, at least implicitly, questioned the unalloyed benefits of "technological-production" science. Thus in 1975 Jacob Needleman was writing: "Once the hope of mankind, modern science has now become the object of such mistrust and disappointment that it will probably never again speak with its old authority."<sup>28</sup> The support of denialist think tanks for geoengineering solutions to global warming can be understood as a reassertion of technological-production science over impact science.<sup>29</sup>

The association between "left-wing" opinion and climate science has now been made so strongly that politically conservative scientists who accept the evidence for climate

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<sup>24</sup> Aaron McCright and Riley Dunlap, "Defeating Kyoto: The Conservative Movement's Impact on US Climate Change Policy", *Social Problems*, 50(3): 348-73, 2003; Jacques, Dunlap and Freeman, 'The organisation of denial'

<sup>25</sup> Chris Mooney, *The Republican War on Science*, Basic Books, New York, 2005

<sup>26</sup> According to one conception, which had wide currency at the time, even among "pro-Semites", Jews were "innately inclined towards algorithmic, analytic, or abstract thinking, whereas Aryans tend to think intuitively and synthetically". David Rowe, "'Jewish Mathematics' at Gottingen in the Era of Felix Klein", *Isis*, 77(3), September 1986, p. 424

<sup>27</sup> McCright and Dunlap, "Anti-reflexivity"

<sup>28</sup> Adding: "The crisis of ecology, the threat of atomic war, and the disruption of the patterns of human life by advanced technology have all eroded what was once a general trust in the *goodness* of science." Jacob Needleman, *A Sense of the Cosmos: The Encounter of Modern Science and Ancient Truth*, Doubleday & Company, New York, 1975, p. 1

<sup>29</sup> Clive Hamilton, "An evil atmosphere", *New Scientist*, 17 July 2010. For a longer version see "The powerful coalition that wants to engineer the world's climate" *The Guardian* (online), 13 September 2010.

change typically withdraw from public debate, as do those conservative politicians who remain faithful to science.<sup>30</sup>

The motives of Einstein's opponents were various but differences were overlooked in pursuit of the common foe, just as today among the enemies of climate science are grouped activists in free-market think tanks, politicians pandering to popular fears, conservative media outlets like *The Sunday Times* and *Fox News*, disgruntled scientists,<sup>31</sup> right-wing philanthropists including the Scaifes and Kochs, and sundry opportunists such as Christopher Monckton and Bjorn Lomborg.

While Einstein's theory posed no economic threat and industrialists were absent from the constellation of anti-relativity forces, climate denial was initially organised and promoted by fossil fuel interests. In the last few years, climate denial has developed into a political and cultural movement. Beneath the Astroturf grass grew.

### *Campaigning methods*

While the social conditions in which anti-relativism and climate denial flourished have similarities that are suggestive, the organisational and tactical parallels between the two anti-science camps are more striking. The first requirement of a campaign is to counter the dominant science with an alternative science, one wrapped in as much credibility as possible. Between the first publication of Einstein's theory in 1905 and its explosion onto the public stage in 1920, the theory had naturally attracted intense debate and criticism within the scientific community. Some eminent physicists not only rejected relativity but were eager to make their arguments in public. The two most prominent were Ernst Gehrcke and Philipp Lenard.

Gehrcke was an experimental physicist who believed the aether theory could be rescued. In 1913 he published a refutation pointing out the absurdities and contradictions of relativity theory.<sup>32</sup> He challenged Einstein at various colloquia, leading Einstein to comment pungently to a friend that if Gehrcke "had as much intelligence as self-esteem, it would be pleasant to discuss things with him".<sup>33</sup> Gehrcke was the only scientist to speak at the raucous anti-Einstein meeting at the Berlin Philharmonic in 1920, described below.

Philipp Lenard was a Nobel Laureate whose experimental approach to physics was being overshadowed by the abstract theories of the mathematical physicists. Lenard's hostility to the Weimar Republic combined with professional resentments to see him link up with proto-fascists to oppose Einstein, a path that led him a decade later to become the Chief of Aryan Physics under the Nazis with the task of rooting out "Jewish physics" from the academy.<sup>34</sup>

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<sup>30</sup> In the United States calls are being made to ban the teaching of climate science in schools, or at least to "balance" it with the views of climate deniers. <http://www.prwatch.org/node/9097>

<sup>31</sup> Myanna Lahsen, "Experience of modernity in the greenhouse: A cultural analysis of a physicist 'trio' supporting the backlash against global warming", *Global Environmental Change*, 18: 204-19, 2008

<sup>32</sup> Rowe, "Einstein's Allies and Enemies", p. 242

<sup>33</sup> Quoted by Rowe, "Einstein's Allies and Enemies", p. 244

<sup>34</sup> Curiously, the English translation of Lenard's book on great men of science, which excluded Einstein, was still widely used in schools and universities in Britain in the 1950s.



It would be incorrect and offensive to suggest that climate-denying scientists such as Frederick Seitz, Fred Singer, Patrick Michaels and Ian Plimer share Lenard's anti-Semitism or Nazi sympathies, but they do share Gehrcke's dogged resistance to the consensus view, his willingness to trade on his reputation to promote his views in public and his close association with right-wing organisations. They also mimic many of Gehrcke's claims, although not his insistence that Einstein was guilty of plagiarism (as well as fraud).

Anti-relativists became convinced that their work was being suppressed, excluded from the professional journals by the "Einstein crowd", in the same way that some "sceptics" believe the "Climategate" emails vindicated their claim that their work has been buried by a self-protective in-group.<sup>35</sup> While opposition to relativity came from both scientists and political activists, it soon became difficult to separate the two, just as today those scientists who reject climate science are quickly drawn into the web of right-wing think tanks at the heart of climate denial. The most prominent ones now appear at the conferences of the Heartland Institute, currently the most active group.<sup>36</sup>

Ernst Gehrcke developed an elaborate account of "mass hypnosis" to explain the public's gullibility in accepting a theory that was so manifestly untrue, an argument he laid out in a book published in 1924.<sup>37</sup> Climate deniers have also been required to explain why most members of the public accept climate science and the need for abatement policies and to this end denier Fred Singer has channelled Gehrcke's theory with his argument that climate science is a form of "collective environmental hysteria".<sup>38</sup>

The foremost political agitator against Einstein was a proto-Nazi and anti-Semite named Paul Weyland. An engineer by training, Weyland was a minor demagogue who declared that he and his political associates would "strive to free German science from Jews".<sup>39</sup> Towards this aim, Weyland founded the Working Society of German Scientists for the Preservation of Pure Science. Its first act in August 1920 was to recruit Gehrcke to address a rowdy public meeting at the Berlin Philharmonic. Einstein joined the audience to hear his theory denounced and his character slandered. In the lobby, swastika lapel pins and anti-Semitic literature were on sale.<sup>40</sup>

The Working Society of German Scientists for the Preservation of Pure Science was a front group set up by Weyland to create the impression that there was a credible body of scientists who resisted the Einstein craze. For a time Einstein himself was deceived by the strategy, before realizing the true nature of the Society. Today, several pseudo-

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<sup>35</sup> Claiming censorship, in 1921 some Einstein opponents established their own body to dispense prestige, the "Academy of Nations", an international association that awarded honours to anti-relativist scientists and promoted "free" science (van Dongen, "On Einstein's opponents, and other crackpots").

<sup>36</sup> So, for example, "respectable" scientists such as Fred Singer, Richard Lindzen, Craig Idso, Willie Soon, Ian Plimer, William Kininmonth, Garth Paltridge and Bob Carter speak at Heartland Institute conferences shoulder-to-shoulder with political extremists such as Christopher Monckton, Andrei Illarionov, and Marc Morano (see <http://www.heartland.org/events/2010Chicago/program.html>).

<sup>37</sup> Hubert Goenner, "The Reaction to Relativity Theory, I: The Anti-Einstein Campaign in Germany in 1920", *Science in Context*, 6(1): 107-133, 1993, p. 120

<sup>38</sup> Quoted by Oreskes and Conway, *Merchants of Doubt*, p. 133

<sup>39</sup> Goenner, "The Reaction to Relativity Theory", p. 120f

<sup>40</sup> van Dongen, "Reactionaries and Einstein's Fame", p. 217

scientific organisations are active against climate science. The Association of American Physicians and Surgeons is an example,<sup>41</sup> a body also responsible for organising rallies of the “Doctors Tea Party”. The Advancement of Sound Science Coalition was an early front group initially established by tobacco interests which in the 1990s shifted into climate denial. More recently, Fred Singer has formed the Nongovernmental International Panel on Climate Change. “As impressive as this title sounds”, noted *Der Spiegel*, “the NIPCC is nothing but a collection of like-minded scientists Singer has gathered around himself”.<sup>42</sup> The widespread use of the term “sound science” by climate deniers, to contrast with the “junk science” to be found in professional journals and IPCC reports, is similar to the anti-relativists’ invocation of “pure science”, although the contrast with “Jewish science” had racial overtones that are absent today.

In a forerunner of the petitions of recent years listing the names of scientists who reject the science of climate change, in 1931 a group including two winners of the Nobel Prize for Physics published a pamphlet titled *One Hundred Authors Against Einstein*. It would be fair to assume that only a handful of the 100 understood relativity theory. When called to respond, Einstein asked why 100 scientists were needed to refute relativity: “If I were wrong, one would have been enough”. Coincidentally, *One Hundred Authors Against Einstein* was published in Leipzig, birthplace of the anti-climate science tract known as the Leipzig Declaration. Organised by long-time “sceptic” Fred Singer and initially signed by 80 scientists, many signatories turned out to be wholly unqualified or unaware their names had been used. Of course, one research paper in a scientific journal would have carried more weight than the 80 signatures.

In the United States today several anti-climate science activists mirror the role performed by Paul Weyland,<sup>43</sup> adopting a demagogic, ruthless and aggressive campaigning style. They have a cynical view of scientific facts, deliberately target climate scientists to silence them and cultivate links with a network of conservative groups.

Throughout the 1920s and early 1930s, Einstein had genuine fears for his safety. After his face became widely recognised he was called a “dirty Jew” on the street by ultra-Nationalist activists and often received threats in the mail. In 1922 he cancelled a scheduled lecture to a scientific meeting after news emerged of protests planned by his enemies.<sup>44</sup> The political climate in the United States today is a long way from that of Weimar Germany, but climate scientists have been the target of a campaign of abuse and threats both by cyber-bullies and politicians.<sup>45</sup> Republican Senator James Inhofe has called for climate scientists to face criminal charges; conservative media outlets, led by the Murdoch-owned Fox News and *The Times* in London, have set out

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<sup>41</sup> Oreskes and Conway, *Merchants of Doubt*, p. 245

<sup>42</sup> Cordula Meyer, “The Traveling Salesmen of Climate Skepticism”, *Spiegel Online*, 8 October 2010 <http://www.spiegel.de/international/world/0,1518,721846,00.html>

<sup>43</sup> For reasons that are obscure Weyland emigrated to the United States in the 1930s. Goenner, “The Reaction to Relativity Theory”, p. 123

<sup>44</sup> van Dongen, “On Einstein’s opponents, and other crackpots”, p. 79

<sup>45</sup> Douglas Fischer, “Cyber Bullying Intensifies as Climate Data Questioned”, *Scientific American*, 1 March 2010; <http://climateprogress.org/2010/03/02/the-rise-of-anti-science-cyber-bullying/>

to discredit climate scientists; and prominent right-wing commentators have provoked their readers to acts of intimidation.

When activist Marc Morano said recently that climate scientists “deserve to be publicly flogged”<sup>46</sup> there was an eerie resonance with the headline above a photograph of Albert Einstein in a Nazi magazine that read “Not Yet Hanged”.<sup>47</sup> That was in 1933, the year Einstein left Germany for good, soon to take up an appointment at Princeton University. There he was safe from the Nazis, although his presence in America immediately aroused the suspicion of FBI Director J. Edgar Hoover. His general theory of relativity was never dented by the political attacks—nor could it be. Only progress in science, in the form of quantum theory, caused physicists to reassess. The same will be true of climate science, although the delay in responding to the threat due to systematic denigration of the science will have dire consequences.

### **Churchill’s struggle against wishful thinking**

My second example also comes from the inter-war period, but this time from across the English Channel. In the same year that Einstein fled Europe, Winston Churchill began warning of the belligerent intentions of Hitler’s Germany and the threat it posed to world peace. In many speeches through the 1930s he devoted himself to alerting Britons to the dangerous currents running through Europe, returning over and over to the martial nature of the Nazi regime, the rapid re-arming of Germany, and Britain’s lack of preparedness for hostilities. In 1936, with Germany re-arming on a massive scale, Hitler’s troops marched into the Rhineland. Churchill told the House of Commons that the previous five years had been disastrous for the security of Britain. “We have seen the most depressing and alarming changes in the outlook of mankind which have ever taken place in so short a period”.<sup>48</sup>

Yet pacifist sentiment among the British public, still traumatized by the memory of the Great War, provided a white noise of wishful thinking that muffled the warnings. Behind the unwillingness to re-arm and resist aggression lay the gulf between the future Britons hoped for—one of peace—and the future the evidence indicated was approaching—war in Europe, just as today behind the unwillingness to cut emissions lies the gulf between the future we hope for—continued stability and prosperity—and the future the evidence tells us is approaching—one of danger and sacrifice.

Throughout the 1930s Churchill’s aim was, in the words of his biographer, “to prick the bloated bladder of soggy hopes” for enduring peace.<sup>49</sup> But the bladder had a tough skin, far too tough to be penetrated by mere facts, even the “great new fact” of German re-armament, which, said Churchill, “throws almost all other issues into the background”.<sup>50</sup> The warnings of Churchill and a handful of others were met with derision. In terms akin to those now used to ridicule individuals warning of climate disaster—“fear-mongers”, “doom-sayers”, “alarmists”—he was repeatedly accused of

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<sup>46</sup> <http://www.climate-science-watch.org/index.php/csw/details/denialist-morano-rejoicing/>

<sup>47</sup> Fred Jerome and Rodger Taylor, “Einstein on Race and Racism”, *Logos* 4(3), Summer 2005 ([http://www.logosjournal.com/issue\\_4.3/jerome\\_taylor.htm](http://www.logosjournal.com/issue_4.3/jerome_taylor.htm))

<sup>48</sup> Winston Churchill, *Arms and the Covenant: Speeches by the Right Hon. Winston Churchill*, George C. Harrap & Co Ltd, 1938, p. 297

<sup>49</sup> Roy Jenkins, *Churchill: A biography*, Farrar, Straus and Giroux, New York, 2001, p. 482

<sup>50</sup> Churchill, *Arms and the Covenant*, p. 171

exaggerating the danger, of irresponsibility, of using “the language of blind and causeless panic” and of behaving like “a Malay running amok”.<sup>51</sup>

Among the public, his warnings fell on ears deaf to any messages but reassuring ones. In 1938 the British public cheered Chamberlain wildly when he returned from Munich waving his scrap of paper. So earnestly did the British public wish for peace that they were prepared to suspend their grasp of reality in return for a comforting delusion. To bounce the public from its torpor, in 1934 Churchill delivered a speech to the Commons in which he described in some detail the apocalyptic effects that bombing raids would have on London. He was trying to conjure up in the minds of the unwilling an image of the devastation that could become the reality were incendiary bombs to rain down on the capital. The details were provided to him, he said, “by persons who are acquainted with the science”.<sup>52</sup>

Like the Murdoch press today, in the 1930s conservative newspapers, led by *The Times*, accused Churchill of alarmism. Their fear of communism caused them to overlook the threat of fascism. Churchill was no friend of dictators of any stripe but, unlike the newspaper editors, he was unwilling to play down the Nazi menace because of its antagonism to communism, just as today the loathing of some conservatives for all things championed by environmentalists causes them to give credence to critics of climate science.

Late in 1938, Churchill’s trenchant criticism of Chamberlain’s Munich agreement—“a total and unmitigated defeat”<sup>53</sup>—earned him the fury of Conservative party members. Anti-Churchill forces in the party rallied and as late as March 1939—a year before he was to become war-time Prime Minister—it seemed likely Churchill would be ousted as a Conservative MP by Government loyalists.<sup>54</sup> Devotion to party, combined with the peace-dreams of the public, blinded Britain to the looming peril and brought it to the edge of the precipice. In the post-war years Britons preferred to remember the Churchill who embodied their bulldog spirit rather than the Churchill they ignored and ridiculed.

### **Camus’ *The Plague***

My third illustration is historical allegory rather than history. Albert Camus’ 1947 novel *The Plague (La Peste)* is typically read as a representation of how the French responded to German occupation. Bubonic plague breaks out in Oran, a town of some 200,000 people in Algeria. It is cut off from the rest of the world for months on end as thousands succumb to horrible deaths.

Bernard Rieux, the doctor and protagonist, is the first to recognise that the mass die-off of rats and the strange symptoms of his patients signalled the arrival of plague. It took others much longer to accept the facts before them. The citizens of Oran, wrote

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<sup>51</sup> Churchill, *Arms and the Covenant*, pp. 152-3

<sup>52</sup> Churchill, *Arms and the Covenant*, p. 173

<sup>53</sup> Winston Churchill, *Into Battle: Speeches by the Right Hon. Winston Churchill*, Cassell and Company Ltd, 1941, p. 42

<sup>54</sup> Jenkins, *Churchill*, p. 531. On the outbreak of war, the leader of the anti-Churchill forces in the Epping division, Colonel Sir Colin Thornton-Kemsley, wrote a humble apology to the man whose refusal to be silenced almost led to the end of his parliamentary career.

Camus, “did not believe in pestilence”. They told themselves “that it is unreal, that it is a bad dream that will end”. Camus forgave human frailty.

... they merely forgot to be modest and thought that everything was still possible for them, which implied that pestilence was impossible. They continued with business, with making arrangements for travel and holding opinions. Why should they have thought about the plague, which negates the future, negates journeys and debate? They considered themselves free and no one will ever be free as long as there is plague, pestilence and famine.<sup>55</sup>

The town’s mayor too was reluctant to acknowledge the truth officially because doing so would have required him to take stern measures, an institutional sclerosis all too familiar today.

In a comment that applies with great force to the contemporary climate debate, Camus observed that in denying the facts “we continue to give priority to our personal feelings”.<sup>56</sup> As the story unfolds, Camus sees into the strategies used by the townspeople to deny or avoid the meaning of the plague. First they tell themselves the deaths are due to something else. Then they tell each other the epidemic will be short-lived and life will soon return to normal. Later, they cling to superstitions and prophecies, unearthing old texts that seem to promise deliverance or protection. They begin to drink more wine because a rumour has circulated that wine kills the plague bacillus. Then, when drunk, they offer optimistic opinions into the night air.

Eventually, the daily count of Oran’s dead overwhelms all forms of resistance to the truth. The emotional force of the realisation explains why it is resisted for so long.

At that moment [wrote Camus], the collapse of their morale, their will power and their patience was so abrupt that they felt they would never be able to climb back out of their hole.<sup>57</sup>

At one point a Dionysian spirit arrives to wipe away the gloom. “At the beginning, when they thought it was a sickness like any other, religion had its place”, wrote Camus.

But when they saw that it was serious, they remembered pleasure. So in the dusty, blazing dusk all the anguish imprinted on their faces during the day resolves itself into a sort of crazed excitement, an uneasy freedom that enflames the whole population.<sup>58</sup>

There are lessons in *The Plague* for the stances we might adopt in the face of the truth about global warming. After months of the deadly epidemic everyone confined in Oran fears it will never end. There is Jean Tarrou, a mysterious visitor trapped in the quarantined town, who kept a chronicle of events in which the people of Oran were viewed from a distance, as through the wrong end of a telescope. Wrote Camus:

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<sup>55</sup> Albert Camus, *The Plague*, Penguin, 2002, p. 30

<sup>56</sup> *Ibid.* p. 63

<sup>57</sup> *Ibid.*, p. 57

<sup>58</sup> *Ibid.*, p. 93

Yes, there was an element of abstraction and unreality in misfortune. But when an abstraction starts to kill you, you have to get to work on it.<sup>59</sup>

As a means of abstracting from suffering, Tarrou's telescope is akin to the approach of some scientists, like James Lovelock, who take up a position somewhere in space from which they dispassionately analyse the possible end of humanity in an abstract kind of way. After Father Paneloux, Oran's Jesuit priest, sermonises on sin and faith, Rieux observes: "Paneloux is a scholar. He has not seen enough people die and that is why he speaks in the name of eternal truths."<sup>60</sup>

In 1945 Hannah Arendt described as "metaphysical opportunists" those who took flight from the reality of wickedness by engaging in abstract arguments about Good and Evil.<sup>61</sup> It is a powerful temptation to escape in these ways, either by a retreat to cosmological thinking or going in the opposite direction, an inward journey to a place of reconciliation and faith.

Dr Rieux works tirelessly against overwhelming odds. He knows that any victories against the plague will be short-lived. "But that is not a reason to give up the struggle", he tells his friend; "... one must fight, in one way or another, and not go down on one's knees",<sup>62</sup> an attitude sometimes read as a metaphor used by Camus for the stance of the French Resistance against German occupation.

Camus argued that the only way to maintain one's integrity in such a situation is to adopt what he called an "active fatalism", in which "one should start to move forward, in the dark, feeling one's way and trying to do good." The novelist was acutely aware of the importance of hope—"how hard it must be to live only with what one knows and what one remembers, and deprived of what one hopes".<sup>63</sup> Some will argue that, in facing the facts of warming, we must not succumb to apathy but re-imagine a different future and begin to hope that it can be the best possible in the new conditions.<sup>64</sup> It is a stance akin to the "Christian hope" expressed by St Francis when he said: "Even if I knew the world would end tomorrow, I would still plant this tree".

Dr Rieux's active fatalism, a refusal to capitulate to hopeless odds, is similar to the distinction, drawn by Nietzsche and elaborated by Heidegger, between the pessimism of strength and the pessimism of weakness.<sup>65</sup> Pessimism as strength faces up to the facts as they present themselves, accepts the danger fully, and engages in sober analysis of what is. It is the pessimism of Dr Rieux—in contrast to others who became absorbed in despondency, adopted a submissive stance and capitulated to the situation through a weary knowingness, taking refuge in ineluctable fate. These two correspond to what Nietzsche called active and passive nihilism, and it is fair to assume that as the full truth of climate science dawns and wishful thinking is rendered untenable—just as the piles of bodies in Oran could no longer go unheeded—then people will

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<sup>59</sup> Ibid., p. 69

<sup>60</sup> Camus, *The Plague*, p. 97

<sup>61</sup> Hannah Arendt, *Essays in Understanding: 1930-1945*, edited by Jerome Kohn (Harcourt Brace & Company, New York, 1994), p. 134-5. Also quoted by Tony Judt in his introduction to *The Plague*.

<sup>62</sup> Ibid., pp. 98 & 102

<sup>63</sup> Ibid., pp. 176 & 225

<sup>64</sup> See the last chapter of *Requiem for a Species*.

<sup>65</sup> Martin Heidegger, *Nietzsche, Volume IV: Nihilism* (edited by David Krell) Harper Collins, New York, 1991, pp. 54-5

divide into these two camps—the pessimists of strength and the pessimists of weakness.

### **Humans and Nature**

The success of climate denialism in its various guises reveals how shallow the roots of the Enlightenment sink. When superstition was swept away by science and reason, our penchant for self-deception merely lost its cover. In the most vital test of our capacity to protect the future through the deployment of rationality and well-informed foresight the “rational animal” is manifestly failing. We see now that the forces unleashed by science and the commitment to a rational social order had entered into a contingent alliance only. The “autocratic subject”<sup>66</sup> could extract knowledge from nature but could also choose to ignore that knowledge if it unsettled the mind. It was a double-edged subjectivity that had the self-certainty to both liberate objective science and reject the facts it uncovered when convenient. The climate crisis is upon us because we are intoxicated by our subjectivity.

Those now afraid for the future are naturally aghast at the ability of climate denial to erode confidence in science and weaken political resolve. Yet it is not so much the fanaticism of the small minority of active deniers that concerns us but the vulnerability of the majority to their influence. The soggy hopes of the pre-war British public, the wishful thinking of the citizens of Oran, the fears of economic and cultural decay that haunted Weimer Germany—these are the danger. The desire to disbelieve deepens as the scale of the threat grows, until a point is reached when the facts can be resisted no longer.

Yet the resistance to global warming goes beyond a psychological frailty. Developments in climate science have revealed a natural world so influenced by human activity that the epistemological division between nature and society can no longer be maintained. When global warming triggers feedback effects, such as melting permafrost and declining albedo from ice-melt, will we be seeing nature at work or human intervention? The mingling of the natural and the human has philosophical as well as practical significance, because the “object” has been contaminated by the “subject”.

Climate denial can be understood as a last-ditch attempt to re-impose the Enlightenment’s allocation of humans and Nature to two distinct realms, as if the purification of climate science could render Nature once again natural, as if taking politics out of science can take humans out of Nature. The irony is that it was Enlightenment science itself, in the rules laid down by the Royal Society, that objectified the natural world, putting it on the rack, in Bacon’s grisly metaphor, in order to extract its secrets. We came to believe we could keep Nature at arms-length, but have now discovered, through the exertions of climate science, something pre-moderns took for granted, that Nature is always too close for comfort.

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<sup>66</sup> The term is from Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment*, Allen Lane, London, 1973, p. xvi