

Utopias in the Anthropocene

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In this unfolding conundrum of life and history there is such a thing as being too late ... We may cry out desperately for time to pause in her passage, but time is adamant to every plea and rushes on. Over the bleached bones and jumbled residue of numerous civilizations are written the pathetic words: "Too late".

Martin Luther King Jr, 1967

It is not widely understood that carbon dioxide persists in the atmosphere for centuries, so our future will depend on the total amount we humans put into it over the next several decades. This is the paramount fact that separates climate change from all other environmental problems.

On top of past emissions, the total amount will depend on two critical factors—the year in which global emissions reach their peak, and how quickly they fall thereafter. Let's make some optimistic forecasts.² Firstly, assume that global emissions peak in 2020, so that after that year any increase in emissions from poor countries must be more than offset by declines in rich countries. Realistically, after persistent failure to reach an international agreement, global emissions are likely to keep growing until 2030 or beyond.

Second, assume that global emissions fall by 3% each year after the 2020 peak until they reach a floor, the minimum necessary to supply the world's population with food. Of course, we cannot expect poor countries to cut their emissions as fast as rich ones, so a global decline of 3% per annum translates into a 6-7% per annum decline in energy and industrial emissions in rich countries.³

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² This analysis is drawn from Kevin Anderson and Alice Bows, 'Reframing the climate change challenge in light of post-2000 emission trends', *Philosophical Transactions of the Royal Society*, The Royal Society, 2008 <http://rsta.royalsocietypublishing.org/content/366/1882/3863.full>. It is presented in more detail Chapter 1 of Clive Hamilton, *Requiem for a Species*, Earthscan, London, 2010.

³ Anderson and Bows, 'Reframing the climate change challenge in light of post-2000 emission trends'

Can this be done? It would certainly be unprecedented. After the collapse of the Soviet Union, Russia's total emissions in 1990s fell by 5.2% per annum, which is close to the rate of decline needed.⁴ However, the sharp decline in emissions was associated with a halving of that nation's GDP, with widespread social misery.

Nevertheless, if we think positive and assume global emissions do peak in 2020 and decline by 3% annually thereafter, with rich country energy and industrial emissions falling by 6-7%, where would that leave us? The shocking fact is that this optimistic scenario would see concentrations of carbon dioxide in the atmosphere reach 650 ppm (the pre-industrial level was 280 ppm and it now stands at 392 ppm). That level translates into warming of 4°C above the pre-industrial global average. As oceans warm more slowly, a global average of 4°C means warming of 5-6°C on land, and even higher closer to the poles. Warming on this scale and at the expected rate, would radically change the conditions of life on earth. The world would be hotter than at any time for 15 million years, yet this is now regarded by leading climate scientists as the most likely future before the end of the century.

This analysis has been replicated, with small variations, by a number of research groups. A study for the German government shows rates of emissions reductions that would be needed if we are to have a reasonable chance of limiting warming to 2°C (Figure 1). If global emissions peak in 2020 they would need to decline at 9% per annum thereafter, an impossible task. No wonder John Schellnhuber, who led the research, referred to the curves as 'vicious integrals'.

Another analysis from the Climate Interactive program developed by MIT's Sloan School and the Sustainability Institute (Figure 2) shows possible paths of emissions reduction and the associated temperatures at the end of the century.⁵ If we are in an optimistic frame of mind and assume that the commitments made by various nations at international summits are implemented in full then we will be on the 'Confirmed proposals' path, which is expected to see the Earth warm by 4°C.

The International Energy Agency is the last international body that could be accused of green sympathies, other than OPEC. Yet last year it concluded that if governments do no more than implement the policies they are currently committed to the world is expected to warm by

⁴ Nicholas Stern, *The Economics of Climate Change: The Stern Review*, Cambridge University Press, Cambridge, 2007, Box 8.3, p. 231. Anderson and Bows also draw from it.

⁵ <http://climateinteractive.org/scoreboard>

3.5°C by the end of the century. It concluded: ‘On planned policies, rising fossil energy use will lead to irreversible and potentially catastrophic climate change’.⁶ Without radical policy change in the major emitting nations, this future will be locked in over the next five years because the infrastructure will have been built.

Warming approaching 4°C is uncharted territory. As is apparent from Figure 3, the climate system would cross several tipping points and trigger various feedback effects that would render the climate system largely beyond human control. The idea that when things get too hot we can then turn the thermostat down is not how the climate system works. On the road to warming of 4°C the Earth system would cross several thresholds that would amplify warming and make the climate system unstable. The planet has warmed by 0.8°C above the pre-industrial average already and inertia in the system means that 2.4°C of warming is already locked in,⁷ with heating reaching 4°C perhaps in the 2070s.

What are the expected impacts? I don’t plan to dwell on the likely impacts of a 4°C world, except to refer to the well-known ‘burning embers’ diagram. In Figure 4, the left half shows the best estimates in 2001 of indicators like threats to ecosystem survival and risks of extreme weather events at various degrees of warming.⁸ The right half shows the assessment of risks updated in 2009 on the basis of new research. Redder areas indicate higher risks.

A decade ago we thought we were reasonably comfortably located in the lower left quarter, i.e. that 2°C was an achievable aim and the impacts of 2°C warming were worrying but manageable. With a better understanding of the higher risks of each degree of warming, and the realisation that 2°C is unattainable and we will be lucky not to reach 4°C, we suddenly find ourselves in the sea of red in the top right hand quarter of the diagram. The alarm bells are ringing insistently, yet we are deaf to them.

It’s hard to communicate to the public what a world warmed by 4°C will be like. Even those who have no reason to doubt the credibility of the figures don’t really take them seriously. It seems like an abstract threat. For many people one unseasonable snowstorm is enough to nullify decades of painstaking scientific study. And psychologists have discovered that,

⁶ International Energy Agency, *World Energy Outlook 2011*, IEA, Paris, 2011, p. 2

⁷ V. Ramanathan and Y. Feng, ‘On avoiding dangerous anthropogenic interference with the climate system: Formidable challenges ahead’, *Proceedings of the National Academy of Sciences*, vol. 105, no. 38, 23 September 2008.

⁸ Katherine Richardson et al., *Synthesis Report*, from the Climate Change: Global Risks, Challenges & Decisions conference, University of Copenhagen, Copenhagen, 2009, Figure 8

after accounting for all other factors, when people are put in a room and asked about climate change they are significantly more likely to agree that global warming is ‘a proven fact’ if the thermostat is turned up.⁹

The Anthropocene

As I have said, the persistence of carbon dioxide in the atmosphere is the most profound and least well-known feature of human-induced climate change (Figure 5). The climatic effects of burning fossil fuels will last longer than Stonehenge, longer even than nuclear waste,¹⁰ and will bring a long era of climatic instability. The impact of burning fossil fuels on the Earth’s atmosphere has been so far-reaching that it is the principal factor, along with population growth, that has persuaded Earth system scientists to declare that the Earth has entered a new geological epoch known as the Anthropocene, the Age of Humans.

The Anthropocene is defined by the fact that the ‘human imprint on the global environment has now become so large and active that it rivals some of the great forces of Nature in its impact on the functioning of the Earth system’.¹¹ This new epoch comes after an extended period of unusual climatic stability, a 10,000-year era known as the Holocene. The Holocene’s mild and equable climate permitted human civilisation to flourish.¹² But humans have flourished so successfully in this sympathetic environment that we have shifted Earth’s geological arc.

The Anthropocene began at the end of the 18th century with the industrial revolution. It was not until the 19th century that the idea of progress took hold, an idea that since the 1950s has become identified with economic growth.¹³ Endless growth has been the shared goal of capitalism and socialism, but when the visionaries and pragmatists of all political traditions promised affluence they took for granted the accommodating conditions of the Holocene.

⁹ Jane Risen and Clayton Critcher, ‘Visceral fit: While in a visceral state, associated states of the world seem more likely’, *Journal of Personality and Social Psychology*, 17 January 2011

¹⁰ David Archer, *The Long Thaw*, Princeton University Press, Princeton, 2009, p. 1

¹¹ Will Steffen, Jacques Grinevald, Paul Crutzen and John McNeil, ‘The Anthropocene: Conceptual and historical perspectives’, *Philosophical Transactions of the Royal Society A* 369 (2011), pp. 842–67

¹² William Burroughs, *Climate Change in Prehistory*, Cambridge University Press, Cambridge, 2005, p. 241

¹³ See Clive Hamilton, *Growth Fetish*, Pluto Press, London, 2004, pp. 98-103. Writing in 1851, a French historian confirmed that the new idea had to struggle to replace old conceptions: ‘From the beginning of this century the idea of progress has in effect established itself in such a way that in principle it is no longer contested by anyone ...’.

The arrival of the Anthropocene represents the most far-reaching challenge to the growth project and all political and social analysis that presupposes it. If the Holocene's anomalous stretch of climatic dependability made civilization possible, what does it mean for the Holocene to come to an end? What does it mean for humankind to be entering an era of climatic volatility, with a rate of warming hardly matched in the palaeoclimate record? The most immediate implication is that the principal assumption of modernity, that of endless progress, now looks untenable. We are inclined to forget how deeply entrenched this assumption is; it is the grand narrative that would not die, the story-line of daily decision-making in public, corporate and private life.

It has often been noted that utopian political ideals were a materialized form of the Christian promise of salvation. Among utopians, it did not take long for the ideal of progress to harden into a law, a law of history.¹⁴ The law of progress allowed those who understood it to know the future; to be a political actor then meant to work to bring about more quickly that which is inevitable. When the ideal became law all champions of social transformation—democrats, Marxists and liberators of all kinds—could believe that history was on their side. That is what it meant to be 'progressive'. Philosophers like Hegel provided the dialectic motor for the iron logic of progress, but in the end the proof was there for all to see in the relentless advance of gross domestic product.

But what happens to the ideal of progress when the law fails, or proves to have been true only for an epoch that has now passed? The law can live on only at the price of denying the passing of the age of progress and pretending that the Anthropocene is something for scientists alone to worry about. Although the births of utopias are precipitated by times of great turmoil, all presuppose stability and the absence of conflict; yet there will be no stability in the Anthropocene, especially if the expectations of abrupt change (unprecedented rates of warming, tipping points, feedback effects and so on) come to pass. Instead of investing in more growth we will be pouring resources into trying to climate-proof our lives—our cities, our coasts, our infrastructure, our houses and our food supplies. The dominant task will be to protect the gains of the past and manage the effects of climatic insecurity so that they do not spill into conflict.

Unreal utopias

¹⁴ An argument made by Hans Jonas, *The Imperative of Responsibility*, University of Chicago Press, Chicago, 1984, p. 163.

Entrenched structures of power and unchangeable ‘human nature’ have always been the principal obstacles on the path to utopia. For utopians overcoming them is achieved by way of a historical rupture, often an act of violence, that overthrows the old structures and creates a ‘new man’. But the rupture we now confront is not one of our making, or rather not one we have consciously brought about; it is not one to welcome but one to resist for it renders us less free, less powerful, and less able to build a New Jerusalem. We begin to see that in the vision of ‘permanent self-surpassing toward an infinite goal’¹⁵ lay a trap that has only now been sprung. We believed that human destiny could be shaped by what we believed; yet now we see that all utopias rested on the technological transformation of nature but that nature would not be subdued and now holds our fate in its hands.

Some leading thinkers have begun to grapple with the meaning of the new epoch now dawning and the all-crushing truth of climate science. In *Living in the End Times* Slavoj Žižek takes up the essential question for the left: with the shift to the Anthropocene, ‘how are we to think the link between the social history of Capital and the much larger geological changes of the conditions of life on Earth?’¹⁶ Yet Žižek can get only get to declaring that ‘materiality is now reasserting itself with a vengeance’ over intellectual labour¹⁷ before reverting to labour, capital and the old social categories, unable to see that the convergence of human history with geological history (Dipesh Chakrabarty’s essential insight) has invalidated the ‘social only’ understanding of the world.

For Žižek the ground has not shifted and the task remains the remaking of the social and economic system to ‘solve’ the problem, confident that the Earth will obediently follow the program. Human agency, the first-born child of the Enlightenment, is undimmed: ‘one can solve the universal problem ... only by first resolving the particular deadlock of the capitalist mode of production’.¹⁸ But the paramount fact of carbon dioxide’s longevity in the atmosphere means that it is too late to ‘solve’ the problem. We cannot make it go away; we can only hope to moderate the worst.

¹⁵ Jonas, *The Imperative of Responsibility*, p. 168

¹⁶ Slavoj Žižek, *Living in the End Times*, Verso, London, 2011, p. 331. Žižek was prompted to pose the question by Dipesh Chakrabarty in ‘The Climate of History: Four Theses’, *Critical Inquiry*, 35:2, Winter 2009.

¹⁷ Žižek, *Living in the End Times*, p. 330

¹⁸ Žižek, *Living in the End Times*, p. 334

Ulrich Beck seems to go much further in recognizing that the unintended dynamics of capitalist modernization ‘threatens its own foundations’.¹⁹ Climate change demonstrates the impossibility of maintaining sociology’s separation of social forces from natural ones and enforces ‘an ongoing extension and deepening of combinations, confusions and “mixtures” of nature and society’.²⁰ Yet Beck too immediately reverts to the familiar by insisting that climate change must be inscribed into the old categories. It is true, as he writes, that ‘one cannot conceptualize climate change without taking its impacts on social inequality and power into account’; but it is also true that one cannot come to grips with climate change if it is cast only as a problem of power relations and differences among humans.

Beck somehow manages to reframe the destabilization of the conditions of life on a millennial scale as a golden opportunity to achieve the progressive dream. Let us close our ears, he tells us, to ‘depressing’ talk of catastrophe and shun the ‘negativity’ of ‘well-meaning green souls’.²¹ When the ‘world public’ (itself a utopian fantasy) wakes up to the fact that we are all in this together ‘something historically new can emerge, namely a cosmopolitan vision in which people see themselves ... as part of an endangered world ...’. He entertains the poignant wish that a golden era of ‘enforced enlightenment’ and ‘cosmopolitan realism’ will dawn.

Beck is the ultimate Modern, whose implicit faith in reflexivity guarantees our autonomous capacity to respond to the world as it is. Responding to climate change requires a ‘new contract between the managers of risk and the victims of risk in world risk society’.²² Yet is not the essential lesson of the climate crisis that reflexive modernisation has failed? We would expect the new conditions to ‘bend back’ on the agents so that they shape the environment to avoid the threatened harms. But the most striking fact about the human response to climate change is the determination *not* to reflect, to carry on blindly as if nothing is happening.

Moreover, Beck’s new contract is one from which the Earth itself, in its new incarnation as the Anthropocene, has been excluded, except as the spur to greater human triumph. The existential threat morphs into the occasion for total emancipation, where all of the problems

¹⁹ Ulrich Beck, ‘Climate for change, or how to how to create a green modernity’, *Theory, Culture & Society*, 27:2-3 (2010), pp. 254-66

²⁰ Beck, ‘Climate for change’, p. 256

²¹ Beck, ‘Climate for change’, p. 259

²² Beck, ‘Climate for change’, p. 260

that have beset the world will be resolved. For Beck, ecology becomes the solution to poverty, inequality and corrosive nationalism.²³ The social always defeats the natural; the Earth remains the mere backdrop on which the human drama is played out.

So confident is Beck that human agency can prevail in the Anthropocene that he ends up *welcoming* the climate crisis because it opens up industrial modernity to ‘fundamental critique and multiple futures’, a process of ‘self-dissolution and self-transformation’.

We need to turn to Bruno Latour to find a thinking open to the meaning of the Anthropocene.²⁴ The tragedy of Modernity is that the future is seen as infinitely malleable and therefore exists only as an abstraction. The Moderns, and in this class we may include Žižek and Beck, are flying into the future but facing backwards, writes Latour, fleeing from a horrible past of suffering and oppression but unable to see the destruction that lies ahead. For them the real is what is left behind and the future is only what the autonomous subject ends up creating.

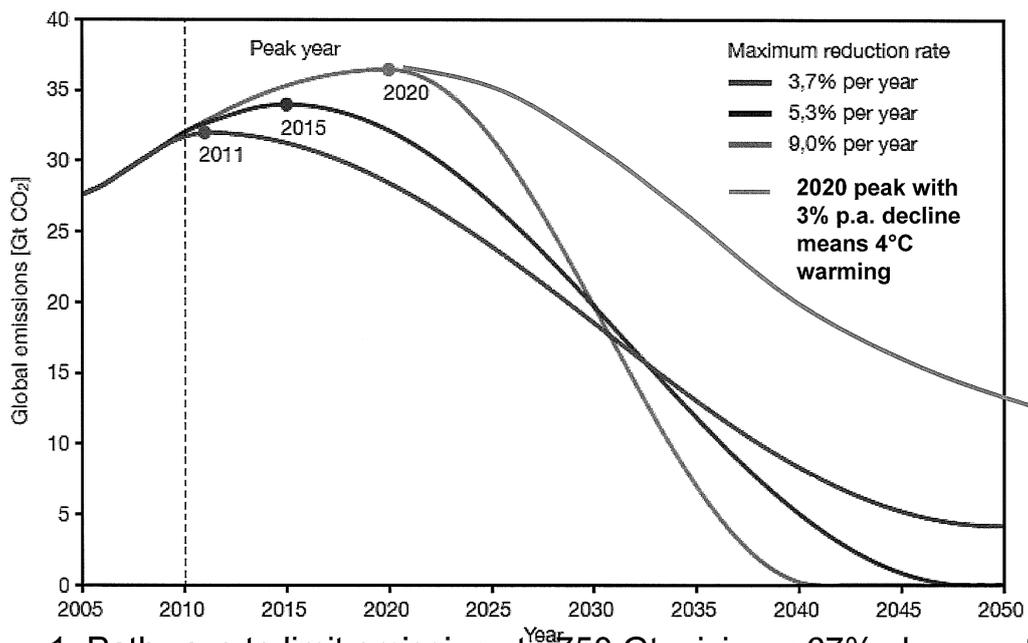
Few progressives have turned around to face the future; and one can see why, for the progressive who turns around can no longer be a progressive. In the Anthropocene, in addition to the past we seek to escape, now we have a future we want to avoid; so we are squeezed from both ends. Isn’t it easier to turn back to the past, to take comfort in the familiar kinds of suffering from which we can still aspire to free ourselves? ‘Give us back our past’, is the cry all denial.

But now the Anthropocene—‘that mix up of all mix ups’²⁵— gives us a future that is all too real. It is no longer ours to construct; nature is no longer merely the inert stage on which the human drama plays out. Nature, we are learning, has its own grand narrative, a narrative against all (human) narratives that says ‘you can no longer take me for granted, as something infinitely malleable’. So now we must find ways to navigate it, to accommodate whatever it throws at us, to work out how to live on a planet less liveable.

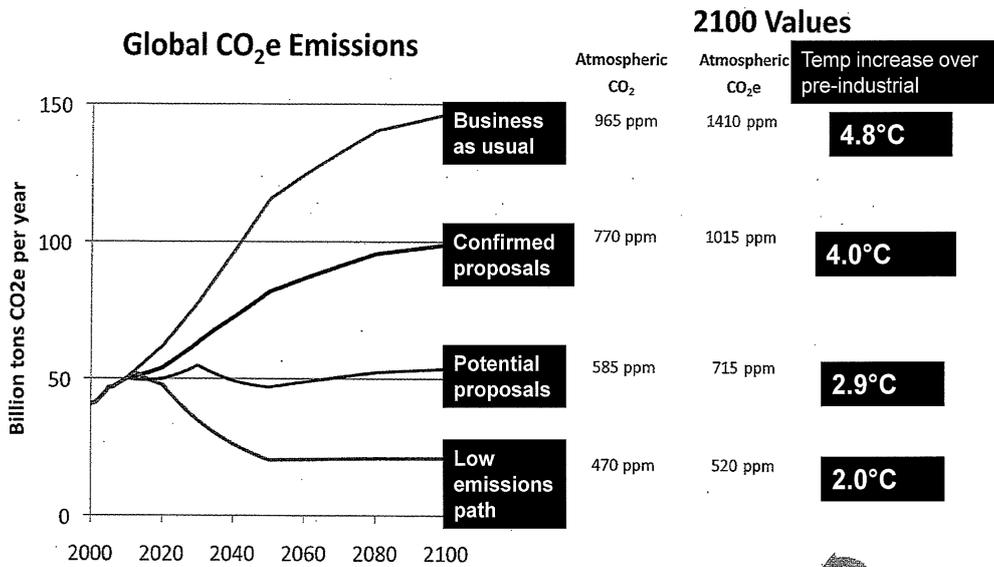
²³ Beck, ‘Climate for change’, p. 262

²⁴ Bruno Latour, ‘An attempt at a “Compositionist Manifesto”’, *New Literary History*, 2010, 41: 471-90

²⁵ Bruno Latour, ‘Waiting for Gaia. Composing the common world through arts and politics’, lecture at the French Institute, London, November 2011



1. Pathways to limit emissions to 750 Gt, giving a 67% chance of limiting warming to 2°C (first three curves). Sources: WBGU, 2009; Anderson & Bowes, 2008

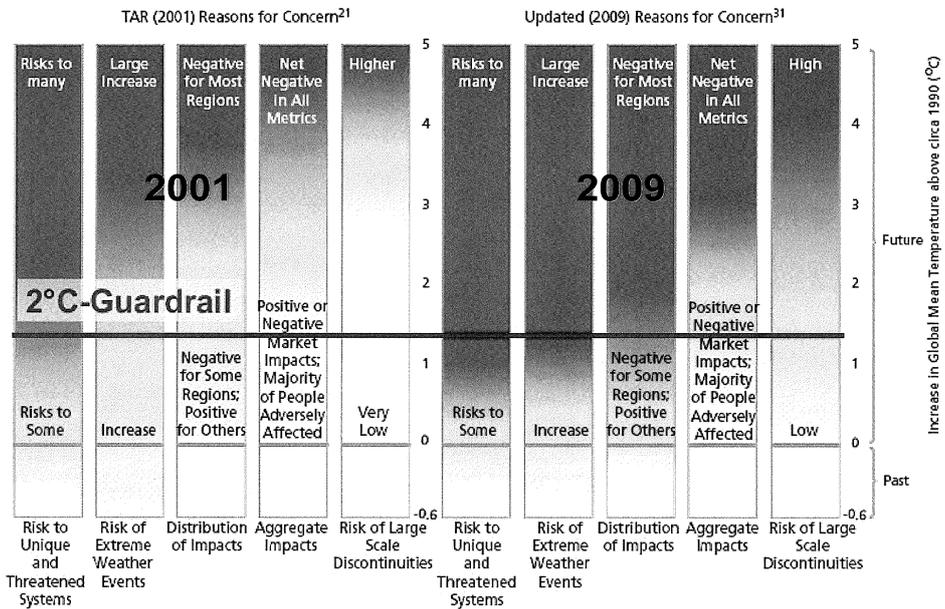
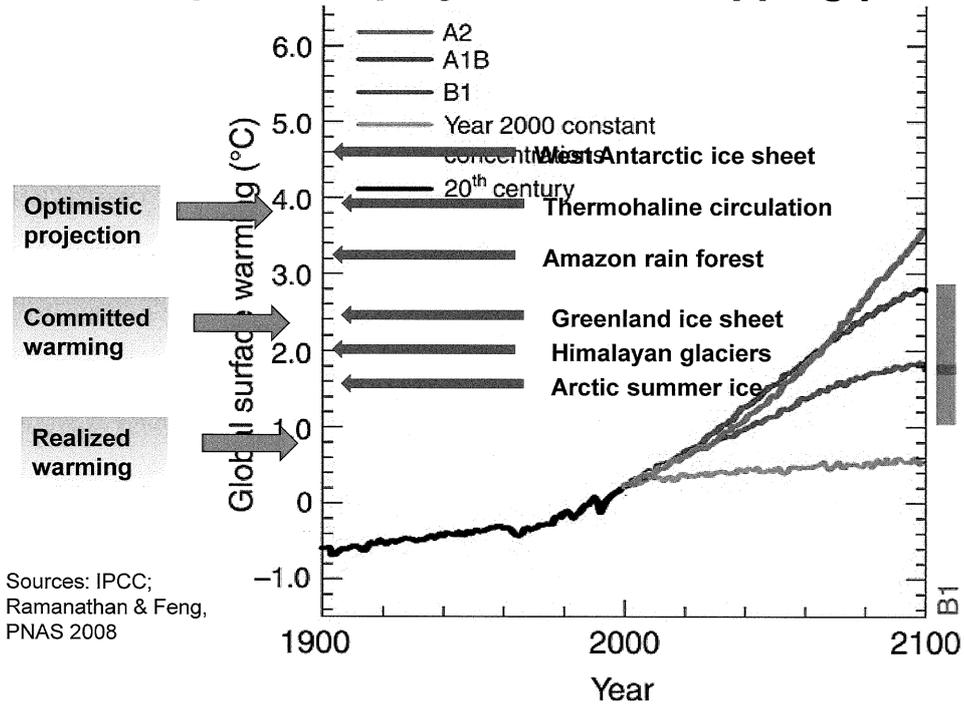


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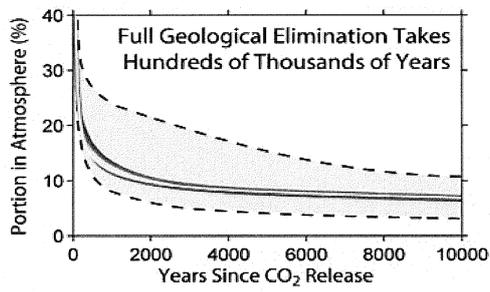
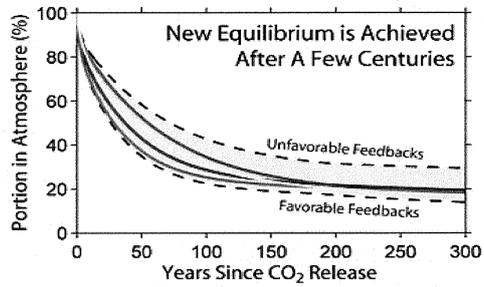
2. Expected temperature rises in 2100 under various scenarios

3. Temperature projections and tipping points



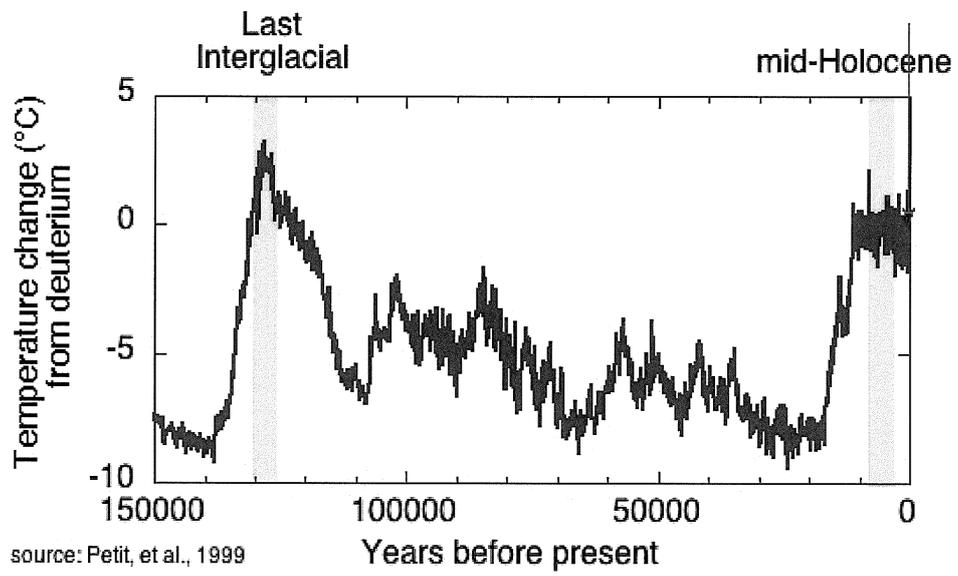
4. The “burning embers” diagram showing 2001 and updated (2009) assessments of risks of impacts associated with varying degrees of warming

Carbon Dioxide Residence Time



5. The paramount fact

Image by Robert A. Rohde and courtesy of Global Warming Art



6. The Holocene (last 10,000 years)