

# Amerigenic Climate Change: An Indictment of Normalcy

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## Abstract:

*Climate forcing can be gauged by national contributions. Human GHG (CO<sub>2</sub>) emissions can be compared by country and year, but, ranking annual national emissions by per-capita shares tell us more. That measure, together with cumulative emissions over time as well as policy actions, reveals the USA as the dominant contributor to warming. Anthropogenic climate change is thus largely Amerigenic. I argue that this circumstance arises from the unusually high reliance on fossil fuels as well as from a specific geography of thought that informs conventional culture and affects policy in the US. Salient features of this geography are monotheism (Protestantism), individualism, capitalism, and skepticism. Each of these prevailing social traits is innocuous by itself, but they coalesce to a critical mass — a square of flawed cognition — in the context of climate change. Climate change is ultimately a cultural problem, and US normalcy is to be blamed for worsening climate forcing and for delaying rational policy.*

**Keywords:** *Climate change, Perpetration, Harms, Normalcy, USA*

## Amerigenic Climate Change An Indictment of Normalcy

*The Age of Stupid*, a science-fiction movie released spring 2009, features an old man in a future blighted by climate change watching footage from our times. The old man, played by Pete Postlethwaite, wonders why we, the generation before him, didn't stop climate change when we still had the chance.<sup>2</sup>

And so far we haven't. The science is in. Yet next to nothing is done. The Kyoto Protocol, adopted in 1997, and due to expire in 2012, has shown itself to be ineffectual. The Copenhagen Summit, COP-15, was convened to produce a follow-up protocol but failed to do so. More than a dozen years after Kyoto, the window of opportunities is closing. The cone of probabilities is now flaring out from a base of worsened realities. Compared to the facts that had informed Kyoto, there are now more people and more environmental pressures. There is more resource use, more material con-

sumption, and more biospherical degradation. The quantity of annual greenhouse gas (GHG) emissions is higher. The atmospheric concentration of CO<sub>2</sub> and other GHGs is stronger. Since the days of Kyoto, everything has become more threatening, challenging, and risky.

The events since the 1990s raise questions of the sort *The Age of Stupid* is about. Why didn't we stop the changes when we learned about them? Why has global warming not been nipped in the bud? Why has world climate been worsened instead? The interrogative points to causes and to responsibility. Hence, first and foremost: *who is to blame?* And furthermore: *why has the perpetrator not desisted?*

The design of a wiser world, a civilization that has the wits and the vision to thrive sustainably, needs knowledge of its opposite first. Finding the cultural path to a post-carbon world requires insight into the anti-culture that worsens climate and lacks the rational imagination to plan ahead. Civil evolution begins with identifying the perpetrator, analyzing his acts, and understanding his cognitive profile.

The indictment of the perpetrator rests on the discovery of a crime: a presently unfolding and perfectly avoidable universal harm (§1). A survey of anthropogenic contributions to climate forcing brings the perpetrator into view (§2). An analysis of the perpetrator's socio-cultural profile suggests a cognitive cause of this crime (§3). This doesn't exonerate the perpetrator; as in drunk driving, impaired cognition does not mean innocence — when harm is done, by social choice, responsibility cannot be shifted away.

## Climate Change as Universal Harm

Humankind depends on the integrity of the biosphere. Biospherical integrity allows the growth of food, access to clean water, and life on habitable land. Civilization collapse would occur long before this productive capacity would grind to a halt. Our fate is linked to that of the whole. This truism is a reminder that without the Earth System's smooth functioning, we would be nothing.<sup>3</sup>

Civilization now exists in excess of planetary carrying capacity. Sustainable yield thresholds of nearly everything we need have been crossed. By peaking, world civilization is far from any equilibrium. Attaining an eventual steady state would point to a demographic and economic reduction of

sorts. Climate change injects instability into an already precarious system. Instability is not unpredictability. On the contrary, climate change translates into a reduction of planetary carrying capacity, and thus into a tightening of constraints.

Rising population growth demands boosting food production, which is difficult enough, since the rate of increases in crop yields appears to be slowing (Runge & Runge, 2010, 10). Intensifying global agriculture (not to mention sustaining it at present levels) requires preserving the very climate conditions that are now vanishing. Climate change imposes an extra burden. Rising temperatures extend drought cycles, and more energetic climate systems create more extreme weather events: bad news all around for any farmer.

World fish stocks, exploited beyond sustainable yields, are declining. Climate change exacerbates the trend. Generally, cold waters are rich in nutrient and teeming with fish. Warm waters are emptier except over reefs. As temperatures rise, cold waters lose nutrients, warm waters lose reefs, and both lose fish. Warmth benefits jelly fish, which displace fish. The fact that oceans are carbon sinks creates another danger. The uptake of atmospheric CO<sub>2</sub> lowers the water's PH value; the water gets sour. Too sour, and mollusk shells and crustacean exoskeletons cannot form any more, which would cut the oceanic food chain. Marine acidification, induced by human-made climate change, creates the risk of biocide.

Meat makes it worse. There are well-known moral problems about eating highly evolved beings that are sentient, conscious, and experiencing centers of their own lives. In the age of climate change, meat eating inflicts additional harms on future generations. Cattle ranching, factory farming, and animal husbandry create avoidable GHG emissions. Livestock also takes up farmland that (reforested) could otherwise be used as carbon sinks. It appears civilization cannot afford meat-eating anymore. In terms of food, be it crops, fish, or meat, climate change is bad news all around.

In terms of location, climate change creates worrisome prospects even in northern countries that would seem to benefit from global warming. Canada and its circumpolar neighbors may perhaps see bigger harvests as growth seasons lengthen. But as lands elsewhere become unproductive, people may be forced to move north as well. Northern countries may need to host climate refugees, or face occupation and war.

The effects of climate change are also felt at the latitudes of the contiguous US. In recent winters, weather had become so weird that people coined new words in 2010, such as "snowmageddon," a term even US President Obama picked up. Predicted trends are now playing out: aridification in the West, more rain and snow in the Northeast, and widening sea-

sonal swings on the entire continent (Parry et al., 2007, 626-627). Offshore, a third of reef-building coral organisms are now facing extinction risks (Waddell & Clarke, 2008, 3; Carpenter, 2008, 560-563). Australia felt the worst heat on record in January 2009, suffered the worst fires on record in February 2009, and the drought 2003-2009 has been the worst on record. The corals of the Great Barrier Reef are so stressed that they stopped growing for the first time in at least 4,000 years (De'ath et al., 2009). China suffers recurrent droughts, and so do its central Asian neighbors (GIEWS, 2009, 3). In northern Asia, tundra out-gassing evokes the specter of runaway changes (Shakhova et al., 2008; Schur et al., 2009). In the Japan Sea, warmer surface waters reduce the circulation overturn, which blunts regional marine capacity to absorb atmospheric CO<sub>2</sub>, and evokes the specter of a failing carbon sink (Park et al., 2008). In Africa, the catastrophe in Darfur has left millions displaced and half a million dead since 2003. An age-old coexistence of farmers and herdsman ended in genocide, not the least because the land's carrying capacity shrank below levels permitting coexistence — erratic monsoon rains lowered annual-mean precipitation, lowered soil productivity, and forced herders to roam into farmland.<sup>4</sup> Europe, like North America, suffers wider seasonal swings, with harsher winters and hotter summers. The specter of the Sahara leaping across the Mediterranean is becoming more real. The continent lost a quarter of its glacier mass in 2000-2007.<sup>5</sup> Hit hardest by deglaciation is South America. This limits water availability especially in Bolivia and Colombia.<sup>6</sup> The change towards a hotter and drier South America has global ramifications, since the Amazon rain forest, one of the main terrestrial carbon sinks, risks drying out into a savannah (Vince, 2009; Nepstad, 2007, 4). The warming and drying accelerates extinctions of life. All data converge on the same prediction: in the upcoming years and decades, the number of species will shrink and ecosystems will simplify.

Peering in all directions returns ever the same datum from all inhabited landmasses: nearly everywhere climate change tends to reduce the carrying capacity of the land, which is bad for civilization and the diversity of life alike. A universal harm could be defined as any impact overwhelmingly negative for human and nonhuman life. Harm is tragic if caused by bad luck or the workings of fate. But it becomes evil when freely and knowingly brought about. The mechanism of climate forcing has been known for decades.<sup>7</sup> The anthropogenic causation of climate change has been demonstrated beyond reasonable doubt.<sup>8</sup> Moreover, even at this late date, this new and evil reality is not yet inevitable; research published 2010 indicates we are only as committed to climate change as we choose to be (Matthews & Weaver, 2010).

## Perpetrators of Climate Change

Climate forcing can be gauged by its primary chemical driver, the concentration of atmospheric CO<sub>2</sub>. The question of responsibility for climate change is about the proportionate fault of the “Global Villagers” — the peoples that make up world civilization. But the statistics are about nations, which are not a uniform lot. Comparing countries over annual CO<sub>2</sub> emissions shows China coming out first (with the US second.)<sup>9</sup> Comparing countries over per capita emissions shows Qatar coming out first.<sup>10</sup>

China has a thousand times more people than Qatar. China’s total emissions are more than a hundred times more than those of Qatar. China has the biggest national carbon footprint. As it well should, one could argue, since a fifth of humankind lives there. Justice involves the idea that everyone gets their fair share. This suggests everyone would be entitled to the same share of a commons like the climate system. It seems fair that two humans can have twice, and four humans four times of what one human can have, regardless whether this is a right to some good or an emissions right. By this argument, China would have the right to create a fifth of humankind’s total emissions, which, coincidentally, is rather close to its current CO<sub>2</sub> output.

Qatar has the biggest per capita carbon footprint. But nations differ in size and in function. Qatar’s footprint is outsize because it is basically one big factory for processing natural gas before feeding it into the world market. And this exonerates Qatar. Blaming this factory for climate change is like blaming the village gas station for the air pollution caused by all the drivers in the village.

Looking at either national or per capita emissions fails to lead us to the culprit. But both measures taken together may bring us closer. Total emissions ranked by country and year show as top ten,

*China*  
*USA*  
*Russia*  
*India*  
*Japan*  
*Germany*  
*Canada*  
*UK*  
*South Korea*  
*Mexico*

Per capita emissions ranked by country and year show as top ten,

*Qatar*  
*United Arab Emirates*  
*Kuwait*  
*Bahrain*

*Luxembourg*  
*Trinidad and Tobago*  
*Dutch Antilles*  
*Aruba*  
*USA*  
*Australia*

One country figures on both rolls: the USA. On the per capita list, it is the only country that’s large (not a small island or a sovereign entity) and consumes (not produces) fossil fuels. The top three are OPEC members. The fourth, Bahrain, earns most revenues through hydrocarbon industries such as petroleum production. Refineries are emissions intensive; in a thinly populated country, they translate into giant per capita carbon footprints. The top three plus Bahrain serve as gas stations in the Global Village: they wouldn’t have such emissions were it not for stiff consumer demand for their products elsewhere.

The next four down, rank five through eight, are mere specks on the map. Three are Caribbean islands; one is a European duchy. With 100,000 to 500,000 citizens each, and up to twenty times the population density of the US, they resemble cities more than countries. The third UN assessment — CO<sub>2</sub> emissions by km<sup>2</sup> — illustrates this structure; due to the spatial compression of small, urbanized countries, their emissions per km<sup>2</sup> tend to be one order of magnitude greater than those of other, larger countries (UNSD, 2009).

This pushes the USA to the per-capita top, inviting comparison with China, the total emissions top. China, as we’ve seen, has cause for its CO<sub>2</sub> output; with 1.4 billion people, it is a whale among nations. US CO<sub>2</sub> annual output of 5.975 billion metric tons is only slightly less than China’s 6.1 billion tons. But the US has only 300 million people. Producing as much CO<sub>2</sub> as a fifth of humankind, while amounting to less than five percent of the world population, seems unfair. The near-equality of Chinese and American emissions means that Americans, on average, have four and a half times the carbon footprints of Chinese. In total annual emissions, the US is second, while lacking the demographic justification that China possesses. It also matters that much of China’s carbon footprint is due to consumer goods manufactured for the US market.

The overlay of total and per capita emissions, helped by the km<sup>2</sup>-measure, puts rankings in spatial perspective. The annual UN rankings represent a snapshot of reality. But climate forcing is brought about over time. The extent of change depends on the atmospheric concentration of GHG, especially CO<sub>2</sub>. That proportion is a cumulative amount. In part this is so because climate forcing occurs outside the loop that the carbon cycle represents, thus adding extra inputs into the Earth system. Another reason is that the carbon cycle re-

volves slowly — CO<sub>2</sub> lingers in the atmosphere for decades. The enormity of the temporal dimension becomes evident considering that current effects of climate change largely result from emissions pumped into the air during the Kennedy administration (Faris, 2009, 222).

Real culprits of the climate crisis are accordingly the cumulative perpetrators — the developed nations. Great quantities of coal, oil, and gas have been burned far longer there than anywhere else. Since 1850, when the industrial revolution started, developed nations injected 76 percent of total CO<sub>2</sub> emissions into the Earth System. The other 24 percent have been the share of developing nations such as China, all newcomers to the GHG club.<sup>11</sup> First on the cumulative list is, once again, the US (30 percent), followed by the more populous European Union (26.5 percent) (World Resources Institute, 2009).

Whether it is per capita, country, or cumulative emissions, the US comes out on top. The US has caused nearly a third of cumulative anthropogenic CO<sub>2</sub> emissions. This proportion remained constant even during the rise of the Asian economies. In the 1990s and early 2000, the annual US contribution to climate forcing stayed the same, which means that “the US is responsible for more greenhouse gas pollution than South America, Africa, the Middle East, Australia, Japan, and Asia-all put together.” (Gore, 2006, 250)

One could object that cumulative emissions are morally overrated: for responsibility to be ethically meaningful, agency matters, but not the agency of bygone generations. It is unfair to be blamed for acts one did not commit. But, as H. Shue (2000, 536) and J. Garvey (2008, 79) note, such an objection would get going only if we assume that the actions of peoples’ forefathers had nothing to do with the lives of people today. This assumption is unrealistic, for people alive today in the developed world, and a fortiori in the USA, are the beneficiaries of the industrial activities of their grandparents.

The quantifiable responsibility of the US for climate change is worsened by policy. From the Kyoto Protocol to the end of the Bush era, US diplomats advocated a *laissez-faire* attitude toward climate change. In 1992, the US rejected the sustainability consensus of the UN Earth Summit, instead opting for the Mexico City policy, to bar aid organizations from efforts aimed at lowering population growth rates. In 1997, the US first negotiated softer targets for Kyoto and next postponed signing the protocol it had weakened in the first place. In 2001, the US rejected Kyoto. In 2002, the US boycotted the UN Sustainability Summit. In 2007, the US blocked the proposal of binding emission limits at COP-13 in Bali. And from 2001 until 2008, the US stance on global warming was one of censorship and deceit. The Obama administration had raised hopes for change, but apart from wel-

come new rhetoric, little has been done. In 2009 the US acted ineffectually at COP-15 in Copenhagen, which failed to produce the follow-up protocol to Kyoto. Obama pledged to reduce emissions by 17% below 2005 levels until 2020, which is a mere 4% cut below the 1990 emissions benchmark (Obama, 2009). But no law has been enacted until the present (August, 2010), and the chance of a climate bill passing before 2011 are slight. A weak cap-and-trade bill, the American Clean Energy and Security Act (the “Waxman-Markey” bill) died in the US Senate before summer recess 2010. Considering the role of the US in bringing about the reality of global climate change, one should properly speak henceforth of *Amerigenic Climate Change*.

## The Square of Flawed Cognition

The hope that the US may embrace sustainable policies does not resolve the puzzle of how Amerigenic climate change could have happened in the first place. Why have Americans caused climate change? And why are they so skeptical of climate facts? Other societies have responded to act on these facts — China, for instance, has become the world’s largest producer of solar panels and is now building up a bullet train network — but Americans continue to doubt the data. Among Congressional Republicans, denial of climate change is nearly unanimous. The environmental nihilism of the conservative party could be explained by corporate corruption, but polls of the public are genuinely mystifying. In world comparison, the US enjoys good levels of literacy, great access to information, and outstanding scientific productivity. And yet, in late 2009, only 57 percent of Americans believe there is solid evidence the world is warming — down from 71 percent in 2008. And only 36 percent believe this is caused by human activity — down from 47 percent in 2008.<sup>12</sup> In 2010, the numbers have only gotten worse (Jones, 2010). There is *mainstream resistance* against climate facts. What explains this tension between climate information and normalcy in US culture?

An overreliance on fossil fuels — the basis of American prosperity — is certainly part of the explanation. After all, the American five percent of the world population uses twenty-five percent of the world’s oil, eighty percent of which happens to be in the Middle East. Addressing this need by committing to a military presence in the Middle East deepens the investment in this resource. In this situation, climate change, brought on by using fossil fuels, is just about the worst of all possible news. And when US lifestyle is declared to be ‘non-negotiable,’ conflicting information must be denied.

But economic reasons don’t explain everything. There is more to this information resistance, visible in U.S. climate re-

search. When chronologically arranged, until the 1980s, bibliographies reveal a strange repetitiveness (Weart, 2007). It is almost as if a paper passes peer-review, gets published, and is ignored, until, a few years later, another paper, with similar contents, passes peer-review, repeating the process. Thus key discoveries are actually rather old. Studies on the greenhouse effect came out in the 1930s.<sup>13</sup> Research on anthropogenic causes was published in the 1940s.<sup>14</sup> Similar findings were printed, again, in 1950s.<sup>15</sup> A general account of global warming appeared in *Scientific American* as early as 1959.<sup>16</sup> Such recurrent publication suggests a compromise between objectivity and prejudice. That the information got published meets standards of impartiality; and that the publication is ignored allows readers and editors to nurse a bias. Unwelcome ideas are sent on a holding pattern. No matter how often one states them, they always surprise anew. Such *information retardation* indicates that published information is counterintuitive in the country of publication.

Information retardation suggests patterns of information processing in cultures. Perhaps it is even the presence of such patterns that define a culture. But their inquiry is a delicate affair, since the dangers of oversimplification and distortion are quite real. Many of us, moreover, are conditioned to be uncomfortable with cultural patterns, since we are most familiar with them through their racist abuse and jingoist distortions. But if we acknowledge that there are national differences to the global perpetration of climate change, and if we wish to understand why some nations, such as the US, have been exceptionally reluctant to endorse efficient climate policies, there will be no way around the investigation of social, cultural, or national cognitive patterns.

We must accordingly engage with the geography of thought; that is, with the disconcerting fact that peoples in different places think differently, and that such differences possess structure. The way to discern these patterns turns on synthetic reasoning — the method of putting data together for the sake of identifying wholes. Synthetic reasoning is alien to conventional scientific and scholarly training. Many disciplines, including philosophy, tend to eschew synthesis, emphasizing analysis instead. Thus fine-grained differentiation is often taken as the hallmark of rigorous inquiries, while holistic generalizations seem rather problematic. Fortunately, empirical research in cognitive psychology on cultural patterns shows that such inquiries can be done.<sup>17</sup>

Let's look at American culture from a distance. What are its features? When asking this, we're not required to consider only features that are mutually consistent with one another. Cultures, like people, are not rational structures. A cultural character, like a personality, is hardly ever consistent. Contradictions weaken a scientific theory. But they can strengthen a character, creating dynamic tensions, like the

“ornery but lovable uncle,” or the “gritty cowboy with a soft heart”, that make the characteristic blend of traits all the more memorable, and paradoxically, compellingly, coherent.

So: how does the US differ from other socio-political entities with cultural cohesiveness, such as Canada, Europe, or China? Four features come to mind. First, the religiosity of Americans is striking. In contrast to these other cultural regions, the US prides itself on being ‘God’s own country’ and puts ‘in God we trust’ on its currency. American religiosity is typically monotheistic, usually Judeo-Christian, and dominantly Protestant. Protestantism is a spectrum of creeds ranging from quite progressive to extremely conservative variants. The latter are faiths that rely on a literalist interpretation of the Bible and either flirt with or openly embrace the view that US law should follow Scriptural teachings (known as Dominion theology; a Christian mirror of Islamic law). In the United States, such creeds constitute presently the majority of Protestant denominations.<sup>18</sup> Protestantism is often a voice of reason elsewhere, but in US religious culture, the majority of Protestants identifies itself with a radical Christian creed.

Faith in the free market is equally striking. Capitalism dominates the US as it does Canada, Europe, and China, but only in America it takes on a quasi-religious, ideological form. Just as communism has a tang of anti-Americanism, capitalism is regarded as patriotic. Karl Marx, here, appears perfectly obscure, while Adam Smith is revered as a lucid, sensible, and visionary thinker.

Individualism is a third feature. ‘Liberty’ and ‘independence’ are central to US normalcy. In America, communitarian ideas, in social-democratic or socialist guises, have little bipartisan appeal and seem rather foreign. Conservatives in the US tend to be libertarians. Progressives in the US tend to be liberals. Both sides stress the self and the individual over others and the community. And the one philosopher normal Americans tend to be familiar with is the best-selling ethical egoist Ayn Rand.

Jesus, Adam Smith, and Ayn Rand form an unlikely yet compelling combination. The Bible, the free market, and private property create a blend that is US normalcy. These features shed light on the information retardation over climate change. A Protestant mindset (understood in the radical US version shared by the Republican Party and the Tea Party) conceives of the world, or nature, as an essentially static structure. The world is the creation, and thus passive by default. The sheer notion of nature with a dynamic climate that is actively reorganizing itself, and thus *changing*, must sound unlikely to this mentality. The monotheistic idea of the world rules this notion out. If the notion were sound, monotheism would be flawed, which, evidently, cannot be.

That climate change is a byproduct of industrialization, economic growth, and global consumerism seems similarly

unlikely to this mindset. The market has nothing but positive connotations in the US. Nothing can be wrong with it. Climate change, as a sweeping, systemic, and threatening market failure, conflicts with the dogma of the goodness of the market. Climate information besmirches what is sacrosanct for US normalcy, debases an American ideal, and becomes accordingly counterintuitive.

Likewise, that America's role in the world, as an individualist vis-à-vis an international community, is suddenly disclosed as that of a perpetrator of universal harm sounds as unlikely as can be. For Americans, brought up with the trust in individual liberty, to learn that efficient mitigation of climate change needs collective cooperation and thus regular integration in a world community sounds unwelcome and absurd. As it threatens a cultural identity, such information is naturally dismissed.

A final feature should not be forgotten, which, in the context of climate change, is the most glaring of all: skepticism. Causal skepticism is the fourth trait by which the US differs from places such as Canada, Europe, or China. In a peculiar American way of thinking, skepticism connotes hard-nosed realism; it evokes a tough, manly, and no-nonsense attitude. Admitting to the 'belief' that humans cause global warming, on the other hand, suggests effete, timid naïveté. Thus Republicans embrace climate skepticism as a strategy that pays off in polls, and Democrats hesitate to trumpet their conviction of the reality of climate change too loudly lest it cost them in popularity and funds. Tellingly, the Obama administration has been reluctant to reverse Ronald Reagan's decision to strip the White House of solar panels installed when Carter was president.

For the skeptical mindset, it is the thesis of climate forcing in particular that sounds abstruse. The notion of an American forcing of world climate, moreover, sounds fanciful if not outright crazy. Domestic discussions about climate accordingly center on the 'truth' of global warming. The smear campaign dubbed Climategate by the media made headlines everywhere from winter 2009 to spring 2010, but in the US, it reignited the smoldering national debate over the credibility of climatological research in principle.

One could call this cognitive streak a Humean trait, after the empiricist thinker David Hume (1711-1776), who famously doubted that causal powers can ever be known. It might seem strange that skepticism goes hand-in-hand with evangelicalism in one and the same culture, but the combination of these traits results in a powerful cognitive cohesiveness. Fundamentalism breeds doubts about science just as doubts about science boost fundamentalist faith. Indeed, in Hume's day, his fame as a skeptic was celebrated by evangelicals in Germany. They fought against the trust Enlightenment thinkers put in rationality, appealing to Hume's

doubts to show how puny reason is, how little it achieves, and how much better it is to be humble and pray (the irony of this fundamentalist appropriation was that Hume was not known as a devout believer).

This Humean trait of US normalcy helps to reinforce faith in 'God's own country'. A country that deems itself so special that it has a 'manifest destiny' and may be 'the end of history' suffers from immaturity. It involves the childish hope that reality makes an exception in one's national case, and that one's actions, in contrast to those of others, won't have consequences, especially not bad ones. Thus infantile skeptics celebrate America's greatness while poking fun at Al Gore.

This, then, is the American square of cognition: monotheism, individualism, capitalism, and skepticism. Any culture informed by these traits is bound to resist information of anthropogenic climate change. Tragically, this very resistance turns anthropogenic climate change into Amerigenic climate change. Since environmental pressures leave civilization no choice but to evolve, US normalcy is bound to be perceived as an anthropological limit in worldwide comparison. Instead of being normal, it appears as radical and extreme. Odds are this is how American culture will be remembered by future generations.

## Endnotes

- 1 mschonfe@usf.edu
- 2 *The Age of Stupid*, 90 min. (2009), directed by F. Armstrong and produced by L. Gillett
- 3 "Our dependence on biological production remains absolute." Cf. Monbiot (2007).
- 4 Competition over dwindling resources has emerged as a leading factor in the Darfur conflict (cf. Homer-Dixon, 2001; Johnson, 2003, xi; de Waal, 2005, xv). Dwindling resources in Darfur are a consequence of environmental decline, which is driven by climate change; cf. Faris, 2009, 15. In response to these findings, the UN now identifies climate change as a cause of the genocide; cf. UN Secretary-General Ban Ki-moon, 2007. The environmental decline that triggered the 2003 famine and violence is not due to overgrazing and deforestation, as originally thought, but to regional effects of global climate change, specifically to higher ocean temperatures that interrupt the monsoon cycle; cf. Giannini et al., 2003; UNEP, 2007, 58, 84; Wallace, 2009, 63-66.
- 5 World Glacier Monitoring Service (WGMS), press release; see also Jowit, 2009.
- 6 G. Magrin et al, "Latin America," in Solomon, 2007, 589; GIEWS, 2009, 27; de la Torre, 2009, 8
- 7 Compare, for instance, Landsberg, 1970, or Plass 1959.
- 8 IPCC 2007, "Summary for Policy Makers," in Solomon, 2007, 2-3.
- 9 Data available in mid-2010 are from the last annual update (Aug 2009) at the UN Statistics Division, reflecting the state of affairs in 2006; cf. UNSD, 2009. Measured in millions of tons of CO<sub>2</sub>, in 2006

- China emitted 6,103, USA 5,975, the Russian Federation 1,578 units. For comparison, Germany's 2006 emissions are 880, and Canada's 560 million tons of CO<sub>2</sub>.
- 10 Measured in tons of CO<sub>2</sub> per capita in 2006, Qatar emitted 56, UAE 33, Kuwait 31 units. For comparison, Germany's 2006 per capita emissions are 11, and Canada's 17 units.
- 11 In 2002-2006, Chinese CO<sub>2</sub> output nearly doubled (from 3.3 billion to 6.1 billion). Cf. UNSD, loc. cit.
- 12 *Newsweek*, 9 Nov 2009, p. 42-43
- 13 For example, Möller, 1935
- 14 For example, Callendar, 1938; the same, 1941; the same, 1949
- 15 Plass, 1956
- 16 Plass, 1959
- 17 For an example of such a rigorous study, which has found its way into collegiate curricula, cf. Nisbett, 2003
- 18 Moderate variants of Protestantism are the Lutheran and Anglican churches, to name just a few; radical variants are the Southern Baptist Convention and evangelical movements guided by Dominion theology. Noteworthy about US religious culture is the preponderance of radical variants. Three times larger than the Evangelical Lutheran Church of America and the Lutheran Church-Missouri Synod combined, the Southern Baptist Convention, which relies on a literalist reading of the Scripture, is presently the largest Protestant denomination in the US. This may explain why many, if not most, US Republican officeholders oppose abortion, doubt evolution (famously exhibited by former US President George W Bush), and even voice carefully hedged praise for Dominionists (such as by former Republican Vice-Presidential candidate Sarah Palin).
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