## 1AC Round 3

Science fiction writers construct an imaginary future; historians attempt to reconstruct the past. Ultimately, both are seeking to understand the present

Thus we present a future history of energy – our narrator, living in the second People’s Republic of China, recounts the failure of the United States to respond to the crisis presented by global Climate Change during the 21st century and its devastating effect on the planet. Our historian recounts when policymakers concluded that: The United States federal government should substantially reduce restrictions on crude oil production in the United States.

Naomi Oreskes, Professor of History and Science Studies at the University of California, San Diego, and Adjunct Professor of Geo- sciences at the Scripps Institution of Oceanography, and Erik M. Conway, historian of science and technology based in Pasadena, California, 2013, The Collapse of Western Civilization: A View from the Future, Dædalus, 142 (1) Winter 2013

In the prehistory of “civilization,” many societies rose and fell, but few left as clear and extensive an account of what happened to them and why as the twenty-first-century nation-states that referred to themselves as Western civilization. Even today, two millennia after the collapse of the Roman and Mayan empires and one millennium after the end of the Byzantine and Inca empires, historians, archaeologists, and synthetic-failure paleoanalysts have been unable to agree on the primary causes of those societies’ loss of population, power, stability, and identity. The case of Western civilization is different because the consequences of its actions were not only predictable, but predicted. Moreover, this technologically transitional society left extensive records both in twentieth-century-style paper and in twenty-first-century electronic formats, permitting us to reconstruct what happened in extraordinarily clear detail. While analysts differ on the details, virtually all agree that the people of Western civilization knew what was happening to them but were unable to stop it. Indeed, the most startling aspect of this story is just how much these people knew, yet how little they acted upon what they knew.

For more than one hundred years, physical scientists in the Western world had known that carbon dioxide (CO2) and water vapor absorbed heat in the planetary atmosphere. A three-phase Industrial Revolution led to massive release of additional CO2, initially in the United Kingdom (1750–1850); then in Germany, the United States, and the rest of Europe (1850–1950); and finally in China, India, and Brazil (1950–2050). At the start of the final phase, some scientists recognized that the anthropogenic increment of CO2 could theoretically warm the planet, but few were concerned; total emissions were still quite low, and in any case most scientists viewed the atmosphere as an essentially unlimited sink. Through the 1960s, it was often said that “the solution to pollution is dilution.”

Things began to change as planetary sinks approached saturation. Some effects occurred because of the extreme power of certain chemical agents even at very low concentrations, such as organochlorine insecticides (most famously the pesticide dichlorodiphenyltrichloroethane, or ddt), and chlorinated fluorocarbons (cfcs). The former were shown in the 1960s to disrupt reproductive function in fish, birds, and mammals; scientists correctly predicted in the 1970s that the latter would deplete the stratospheric ozone layer. Other saturation effects occurred because of the huge volume of materials being released into the planetary environment. These materials included sulfates from the combustion of coal as well as CO2 and methane (CH4) from fossil fuels, concrete manufacture, deforestation, and then-prevalent agricultural techniques such as growing rice in paddy fields and producing cattle as a primary protein source.

In the 1970s, scientists began to recognize that human activities were changing the physical and biological functions of the planet in consequential ways–giving rise to the Anthropocene Period of Geological History.2 None of the scientists who made these early discoveries was particularly visionary: many of the relevant studies were by-products of nuclear weapons testing and development.3 It was the rare man (in those days, sex discrimination was still widespread) who understood that he was in fact studying the limits of planetary sinks.4 (Along with these findings, scientists also highlighted the phenomenon of market failure, a discussion of which appears below.) Major research programs were launched and new institutions created to acknowledge and deal with the issue. Culturally, celebrating the planet was encouraged on an annual Earth Day (as if every day were not an Earth day!), and in the United States the establishment of the Environmental Protection Agency formalized the concept of environmental protection. By the late 1980s, scientists had recognized that concentrations of CO2 and other greenhouse gases were having discernible effects on planetary climate, ocean chemistry, and biological systems, threatening grave consequences if not rapidly controlled. Various groups and individuals began to argue for the need to control greenhouse gas emissions and begin a transition to a non-carbon-based energy system.

Historians view 1988 as the start of the Penumbral Period. In that year, scientists created a new hybrid scientific/governmental organization, the Intergovernmental Panel on Climate Change (ipcc), to communicate relevant science and form the foundation for international governance to protect the planet and its denizens. A year later, the Montreal Protocol to Control Substances that Deplete the Ozone Layer became a model for an international framework to control greenhouse gases. In 1992, world nations signed the United Nations Framework Convention on Climate Change (unfccc) to prevent “dangerous anthropogenic interference” in the climate system. But there was backlash. Critics claimed that the scientific uncertainties were too great to justify the expense and inconvenience of eliminating greenhouse gas emissions, and that any attempt to solve the problem would cost more than it was worth. At first, just a handful of people made this argument, almost all of them from the United States, although in time, the arguments spread to Canada, Australia, and parts of Europe as well. In hindsight, the self-justificatory aspects of the U.S. position are obvious, but they were not apparent to many at the time. Some nations used inertia in the United States to excuse their own patterns of destructive development. Others tried but failed to force the United States into international cooperation.

By the end of the millennium, denial had spread widely. In the United States, political leaders–including the president of the United States, members of Congress, and members of state legislatures–took denialist positions. In Europe, Australia, and Canada, the message of “uncertainty” was promoted by industrialists, bankers, and some political leaders. (Meanwhile, a different version of denial emerged in non-industrialized nations, which argued that the threat of climate change was being used to prevent their development. The claims had little effect, though, because these countries produced few greenhouse gas emissions.)5

By the early 2000s, dangerous anthropogenic interference in the climate system was under way. Fires, floods, hurricanes, and heat waves began to intensify, but these effects were discounted. Those in what we might call active denial insisted that the extreme weather events reflected natural variability, despite a lack of evidence to support that claim. Those in passive denial continued life as they had been living it, unconvinced that a compelling justification existed for broad changes in industry and infrastructure. Scientists became entangled in arcane arguments about the “attribution” of singular events; however, the threat to civilization inhered not in any individual flood, heat wave, or hurricane, but in the overall shifting climate pattern, its impact on the cryosphere, and the increasing acidification of the world ocean.

The year 2009 is viewed as the “last best chance” the Western world had to save itself, as leaders met in Copenhagen, Denmark, to try, for the fifteenth time since the unfccc was written, to agree on a binding, international law to prevent disruptive climate change. Two years before, scientists involved in the ipcc had declared anthropogenic warming to be “unequivocal,” and public opinion polls showed that a majority of people– even in the recalcitrant United States– believed that action was warranted. But shortly before the meeting, a massive campaign (funded primarily by fossil fuel corporations, whose annual profits at that time exceeded the gdps of most countries6), was launched to discredit the scientists whose research underpinned the ipcc’s conclusion.7 Public support for action evaporated; even the president of the United States felt unable to move his nation forward.

Meanwhile, climate change was intensifying. In 2010, record-breaking summer heat and fires killed more than 50,000 people in Russia and resulted in over $15 billion (in 2009 usd) in damages. The following year, massive floods in Australia affected more than 250,000 people. In 2012, which became known in the United States as the “year without a winter,” winter temperature records, including for the highest overnight lows, were shattered–something that should have been an obvious cause for concern. A summer of unprecedented heat waves and loss of livestock and agriculture followed. The “year without a winter” moniker was misleading, as the warm winter was largely restricted to the United States, but in 2021, the infamous “year of perpetual summer” lived up to its name, taking 500,000 lives worldwide and costing nearly $500 billion in losses due to fires, crop failure, and the deaths of livestock and companion animals.

The loss of pet cats and dogs garnered particular attention among wealthy Westerners, but what was anomalous in 2021 soon became the new normal. Even then, political, business, and religious leaders refused to accept that the primary cause was the burning of fossil fuels. A shadow of ignorance and denial had fallen over people who considered themselves children of the Enlightenment. For this reason, we now know this era as the Period of the Penumbra.

It is clear that in the early twenty-first century, immediate steps should have been taken to begin the Great Energy Transition. Staggeringly, the opposite occurred. At the very time that the urgent need for an energy transition became palpable, world production of greenhouse gases increased. This fact is so hard to understand that it calls for a closer look at what we know about this crucial juncture.

In the early Penumbral Period, scientists were accused of being “alarmist” in order to increase financial support for their enterprise, gain attention, or improve their social standing. At first, the accusations took the form of public denunciations; later they included threats, thefts, and the subpoena of private correspondence.8 Then legislation was passed (particularly in the United States) that placed limits on what scientists could study and how they could study it, beginning with the notorious “Sea Level Rise Denial Bill,” passed in 2012 by the government of what was then the U.S. state of North Carolina (now part of the Atlantic Continental Shelf )9 and the Government Spending Accountability Act of 2012, which restricted the ability of government scientists to attend conferences to share and analyze the results of their research.10

Though ridiculed when first introduced, the Sea Level Rise Denial Bill would become the model for the U.S. National Stability Protection Act of 2022, which led to the conviction and imprisonment of more than three hundred scientists for “endangering the safety and well-being of the general public with unduly alarming threats.”11 By exaggerating the threat, it was argued, scientists were preventing the economic development essential for coping with climate change. When the scientists appealed, their convictions were upheld by the U.S. Supreme Court under the Clear and Present Danger doctrine, which permitted the government to limit speech deemed to represent an imminent threat.

Had scientists exaggerated the threat, inadvertently undermining the evidence that would later vindicate them? Certainly, narcissistic fulfillment played a role in the public positions that some scientists took, and in the early part of this period, funds flowed into climate research at the expense of other branches of science, not to mention other forms of intellectual and creative activity. (It is remarkable how little these extraordinarily wealthy nations spent supporting artistic production; one explanation may be that artists were among the first to truly grasp the significance of the changes that were occurring.12) However, by 2010 or so, it was clear that scientists had been underestimating the threat, as new developments outpaced early predictions of warming, sea level rise, and Arctic ice loss, among other parameters.13

It is difficult to understand why humans did not respond appropriately in the early Penumbral Period, when preventive measures were still possible. Many have sought an answer in the general phenomenon of human adaptive optimism, which later proved crucial for survivors. Even more elusive to scholars is why scientists, whose job it was to understand the threat and warn their societies–and who thought that they did understand the threat and that they were warning their societies–failed to appreciate the full magnitude of climate change. To shed light on this question, scholars have pointed to the roots of Western natural science in religious institutions.

In an almost childlike attempt to demarcate their practices from those of older explanatory traditions, scientists felt it necessary to prove to themselves and the world how strict they were in their intellectual standards. Thus, they placed the burden of proof on novel claims, including those about climate. Some scientists in the early twenty-first century, for example, had recognized that hurricanes were intensifying, but they backed down from this conclusion under pressure from their scientific colleagues. Much of the argument surrounded the concept of statistical significance. Given what we now know about the dominance of nonlinear systems and the distribution of stochastic processes, the then-dominant notion of a 95 percent confidence limit is hard to fathom. Yet overwhelming evidence suggests that twentieth-century scientists believed that a claim could be accepted only if, by the standards of Fisherian statistics, the possibility that an observed event could have happened by chance was less than 1 in 20. Many phenomena whose causal mechanisms were physically, chemically, or biologically linked to warmer temperatures were dismissed as “unproven” because they did not adhere to this standard of demonstration.

Historians have long argued about why this standard was accepted, given that it had no substantive mathematical basis. We have come to understand the 95 percent confidence limit as a social convention rooted in scientists’ desire to demonstrate their disciplinary severity. Just as religious orders of prior centuries had demonstrated moral rigor through extreme practices of asceticism in dress, lodging, behavior, and food–in essence, practices of physical self-denial–so, too, did natural scientists of the twentieth century attempt to demonstrate their intellectual rigor through intellectual self-denial.14 This practice led scientists to demand an excessively stringent standard for accepting claims of any kind, even those involving imminent threats.

Western scientists built an intellectual culture based on the premise that it was worse to fool oneself into believing in something that did not exist than not to believe in something that did. Scientists referred to these positions as “type I” and “type II” errors, and established protocols designed to avoid type I errors at almost all costs. One scientist wrote, “A type I error is often considered to be more serious, and therefore more important to avoid, than a type II error.” Another claimed that type II errors were not errors at all, just “missed opportunities.”15 So while the pattern of weather events was clearly changing, many scientists insisted that these events could not yet be attributed with certainty to anthropogenic climate change. Even as lay citizens began to accept this link, the scientists who studied it did not.16 More important, political leaders came to believe that they had more time to act than they really did. The irony of these beliefs need not be dwelt on; scientists missed the most important opportunity in human history, and the costs that ensued were indeed nearly “all costs.”

By 2012, more than 365 billion tons of carbon had been emitted into the atmosphere since 1751. Staggeringly, more than half of these emissions occurred after the mid-1970s–that is, after scientists had built computer models demonstrating that greenhouse gases would cause warming. Emissions continued to accelerate even after the unfccc was established: between 1992 and 2012, total CO2 emissions increased by 38 percent.17 Some of this increase was understandable, as energy use grew in poor nations seeking to raise their standard of living. **Less explicable is why, at the very moment when disruptive climate change was becoming apparent**, wealthy **nations dramatically increased their production of fossil fuels**. The countries most involved in this enigma were two of the world’s richest: the United States and Canada.

A key turning point was 2005, when the U.S. Energy Policy Act exempted shale gas drilling from regulatory oversight under the Safe Drinking Water Act. This statute opened the floodgates (or, more precisely, the wellheads) to massive increases in shale gas production.18 U.S. shale gas production at that time was less than 5 trillion cubic feet (Tcf, archaic imperial units) per annum. By 2035, it had increased to 13.6 Tcf. As the United States expanded shale gas production and exported the relevant technology, other nations followed. By 2035, total gas production had exceeded 250 Tcf per annum.19

In the late twentieth century, Canada was considered an advanced nation with a high level of environmental sensitivity.

This changed around the year 2000, when Canada’s government began to push for development of huge oil sand deposits in the province of Alberta. While these deposits had been mined intermittently since the 1960s, the rising cost of conventional oil had made sustained exploitation economically feasible. The fact that 70 percent of the world’s known reserves were in Canada explains the government’s new denialist position on climate change: in 2011, Canada withdrew from the Kyoto Protocol to the unfccc.20 Under the protocol, Canada had committed to cut its emissions by 6 percent, but its actual emissions increased more than 30 percent during this period.21

The massive increase in shale gas led to a collapse in the price of natural gas, driving out nascent renewable energy industries everywhere except China. Then the United States implemented laws forbidding the use of biodiesel fuels–first by the military, and then by the general public– undercutting that emerging market as well.22 Bills were passed to restrict the development and use of other forms of renewable energy, maintaining the lock that fossil fuel companies had on energy production and use.23

How did these wealthy nations–rich in the resources that would have enabled an orderly transition to a zero net-carbon infrastructure–justify the deadly expansion of fossil fuel production? Certainly, they fostered the shadow of denial that obscured the link between climate change and fossil fuel production and consumption. They also entertained a second delusion: that natural gas from shale could offer a “bridge to renewables.” Believing that conventional oil and gas resources were running out (which they were, but at a rate insufficient to avoid disruptive climate change), and stressing that natural gas, when combusted, produced only half as much CO2 as coal, political and economic leaders persuaded themselves and their constituents that promoting shale gas was an environmentally and ethically sound approach.

This line of reasoning, however, neglected three crucial factors. First, fugitive methane emissions–CH4 that escaped unburned into the atmosphere–greatly accelerated warming. (Again, scientists had foreseen this phenomenon, but their predictions were buried in specialized journals.) Second, the argument presupposed that net CO2 emissions would fall, which would have required strict restrictions on coal and petroleum use.24 Third, and most important, the sustained low prices of fossil fuels, supported by continued subsidies and a lack of external cost accounting, undercut efficiency efforts and weakened emerging markets for solar, wind, and biofuels (including crucial liquid biofuels for aviation).25 Thus, the bridge to a zero-carbon future collapsed before the world had crossed it. The bridge to the future became a bridge to nowhere.

The net result? Fossil fuel production escalated, greenhouse gas emissions increased, and climate disruption accelerated. In 2001, the ipcc had predicted that atmospheric CO2 would double by 2050.26 In fact, that benchmark had been met by 2042. Scientists had expected a mean global warming of 2 to 3 degrees Celsius; the actual figure was 3.9 degrees. Though originally merely a benchmark for discussion with no particular physical meaning, the doubling of CO2 emissions turned out to be significant: once the corresponding temperature rise reached 4 degrees, rapid changes began to ensue.

By 2040, heat waves and droughts were the norm. Control measures such as water and food rationing and Malthusian drills had been widely implemented. In wealthy countries, hurricane and tornado-prone regions were depopulating, putting increased social pressure on areas less subject to those hazards. In poor nations, conditions were predictably worse: rural portions of Africa and Asia were already experiencing significant depopulation from out-migration, malnutrition-induced disease and infertility, and starvation. Still, sea level had risen only 9 to 15 centimeters around the globe, and coastal populations were mainly intact.

Then, in the Northern Hemisphere summer of 2041, unprecedented heat waves scorched the planet, destroying food crops around the globe. Panic ensued, with food riots in virtually every major city. Mass migration of undernourished and dehydrated individuals, coupled with explosive increases in insect populations, led to widespread outbreaks of typhus, cholera, dengue fever, yellow fever, and, strangely, aids (although a medical explanation for the latter has never been forthcoming). Surging insect populations also destroyed huge swaths of forests in Canada, Indonesia, and Brazil. As social order broke down, governments were overthrown, particularly in Africa, but also in many parts of Asia and Europe, further decreasing social capacity to deal with increasingly desperate populations. The U.S. government declared martial law to prevent food riots and looting, and the United States and Canada announced that the two countries would form the United States of North America in order to begin resource-sharing and northward population relocation. The European Union announced similar plans for voluntary northward relocation of eligible citizens from its southernmost regions to Scandinavia and the United Kingdom.

While governments were straining to maintain order and provide for their people, leaders in Switzerland and India–two countries that were rapidly losing substantial portions of their glacially sourced water resources–convened the First International Emergency Summit on Climate Change, organized under the rubric of Unified Nations for Climate Protection (the former United Nations having been discredited and disbanded over the failure of the unfccc). Political, business, and religious leaders met in Geneva and Chandigarh to discuss emergency action. Many said that the time had come to make the Great Energy Transition. Others argued that the world could not wait the ten to fifty years required to alter the global energy infrastructure, much less the one hundred years it would take for atmospheric CO2 to diminish. In response, participants hastily wrote and signed the Unified Nations Convention on Climate Engineering and Protection (unccep), and began preparing blueprints for the International Climate Cooling Engineering Project (iccep).

As a first step, iccep launched the International Aerosol Injection Climate Engineering Project (IaICEP, pronounced ay-yi-sep) in 2042.27 IaICEP had widespread support from wealthy nations anxious to preserve some semblance of order, poor nations desperate to see the world do something to address their plight, and frantic low-lying Pacific Island nations at risk of being submerged by rising sea levels.

IaICEP began to inject submicrometersize sulfate particles into the stratosphere at a rate of approximately 2.0 teragrams per year, expecting to reduce mean global temperature by 0.1 degrees Celsius annually from 2042 to 2062. (In the meantime, a substantial infrastructural conversion to renewable energy could be achieved.28) Initial results were encouraging: during the first three years of implementation, temperature decreased as expected and the phaseout of fossil fuel production commenced. However, in the project’s fourth year, an anticipated–but discounted–side effect occurred: the shutdown of the Indian Monsoon. As crop failures and famine swept across India, IaICEP’s most aggressive promoter now called for its immediate cessation.

IaICEP was halted in 2047, but a fatal chain of events had already been set in motion. It began with termination shock: that is, the abrupt increase in global temperatures following the sudden cessation of IaICEP. Once again, this phenomenon had been predicted, but IaICEP advocates had successfully argued that, given the emergency conditions, the world had no choice but to take the risk.29 In the following eighteen months, temperature rapidly rebounded, regaining not just the 0.4 degrees Celsius that had been reduced during the project but an additional 0.6 degrees. This rebound effect pushed the mean global temperature increase to nearly 5 degrees Celsius.

Whether it was caused by this sudden additional heating or would have happened anyway is not known, but the greenhouse effect then reached a global tipping point. By 2050, Arctic summer ice was completely gone. Scores of species perished, including the iconic polar bear, the dodo bird of the twenty-first century. While the world focused on these highly visible losses, warming had meanwhile accelerated a less visible but widespread thawing of Arctic permafrost. Scientists monitoring the phenomenon observed a sudden increase in permafrost thaw and CH4 release. Exact figures are not available, but the estimated total carbon release from Arctic CH4 during the next decade may have reached over 1,000 gigatons, effectively doubling the total atmospheric carbon load.30 This massive addition of carbon led to what is known as the Sagan effect (sometimes more dramatically called the Venusian death): a strong positive feedback loop between warming and CH4 release. Planetary temperature increased by an additional 6 degrees Celsius over the 5 degree rise that had already occurred.

The ultimate blow for Western civilization came in a development that, like so many others, had long been discussed but rarely considered as a serious threat, at least not in the twenty-first century. Technically, what happened in West Antarctica was not, in fact, a collapse. The ice sheet did not fall in on itself, and it did not happen all at once. The collapse was more of a rapid disintegration. Post hoc failure analysis shows that extreme heat in the Northern Hemisphere disrupted normal patterns of ocean circulation. This sent exceptionally warm surface waters into the southern ocean, which destabilized the ice sheet from below. As large pieces of ice shelf began to separate from the main ice sheet, removing the bulwark that had kept the sheet on the Antarctic mainland, sea level began to rise rapidly.

Social disruption hampered scientific data-gathering, but some dedicated individuals–realizing the damage could not be stopped–sought, at least, to chronicle it. Over the course of the next decade, approximately 90 percent of the ice sheet broke apart, disintegrated, and melted, driving up sea level approximately three meters across most of the globe. Meanwhile, the Greenland Ice Sheet, long thought to be less stable than the Antarctic Ice Sheet, began its own disintegration. As summer melting reached the center of the Greenland Ice Sheet, the east side began to separate from the west. Massive ice breakup ensued, adding another two meters to mean global sea level rise.31

Analysts had predicted that a five-meter sea level rise would dislocate 10 percent of the global population. Alas, their estimates proved low: the reality was closer to 20 percent. Although records for this period are incomplete, it is likely that 1.5 billion people were displaced around the globe, either directly from the impacts of sea level rise or indirectly from other impacts of climate change, including the secondary dislocation of inland peoples whose towns and villages were overrun by eustatic refugees. Dislocation contributed to the Second Black Death, as a new strain of the bacterium Yersinia pestis emerged in Europe and spread to Asia and North America. In the Middle Ages, the Black Death killed as much as half the population of Europe; this second Black Death had similar effects.32 Disease also spread among stressed nonhuman populations. Although accurate statistics are scant because twentieth-century scientists did not have an inventory of total global species, it is not unrealistic to estimate that 60 to 70 percent of species were driven to extinction.

There is no need to rehearse the details of the human tragedy that occurred; every schoolchild knows of the terrible suffering. Survivors’ accounts make clear that many thought the end of the human race was near; had the Sagan effect continued, warming would not have stopped at 11 degrees. However, when a key species of lichen evolved to use atmospheric CO2 more efficiently,33 this adaptation, coupled with a fortuitous shift in Earth’s orbit, reversed the warming trend. Survivors in northern inland regions of Europe, Asia, and North America, as well as inland and high altitude regions of South America, were able to begin to regroup and rebuild. The human populations of Australia and Africa, of course, were wiped out.

To the historian studying this tragic period of human history, the most astounding fact is that the victims knew what was happening and why. Indeed, they chronicled it in detail precisely because they knew that fossil fuel combustion was to blame. Historical analysis also shows that Western civilization had the technological know-how and capability to effect an orderly transition to renewable energy, yet the available technologies were not implemented in time.34 As with all great historical developments, there is no easy answer to the question of why this catastrophe occurred, but key factors stand out. The thesis of this analysis is that Western civilization became trapped in the grip of two inhibiting ideologies: namely, positivism and market fundamentalism.

Twentieth-century scientists saw themselves as the descendants of an empirical tradition often referred to as positivism– after the nineteenth-century French philosopher Auguste Comte, who developed the concept of “positive” knowledge (as in, “absolutely, positively true”)–but the overall philosophy is more accurately known as Baconianism. This philosophy held that through experience, observation, and experiment, one could gather reliable knowledge about the natural world, and that this knowledge would empower its holder. Experience justified the first part of the philosophy (we have recounted how twentieth-century scientists anticipated the consequences of climate change), but the second part proved less compelling. Although billions of dollars were spent on climate research in the late twentieth and early twenty-first century, the resulting knowledge had little impact on the crucial economic and technological policies that drove the continued use of fossil fuels.

A key attribute of the period was that power did not reside in the hands of those who understood the climate system, but rather in political, economic, and social institutions that had a strong interest in maintaining the use of fossil fuels. Historians have labeled this system the carboncombustion complex: a network of powerful industries comprised of primary fossil fuel producers; secondary industries that served fossil fuel companies (drilling and oil field service companies, large construction firms, and manufacturers of plastics and other petrochemicals); tertiary industries whose products relied on inexpensive fossil fuels (especially automobiles and aviation); and financial institutions that serviced their capital demands. Maintaining the carbon-combustion complex was clearly in the self-interest of these groups, so they cloaked this fact behind a network of “think tanks” that issued challenges to scientific knowledge they found threatening.35 Newspapers often quoted think tank employees as if they were climate researchers, juxtaposing their views against those of university-based scientists. This practice gave the public the impression that the science was still uncertain, thus undermining the sense that it was time to act.36 Meanwhile, scientists continued to do science, believing, on the one hand, that it was inappropriate for them to speak to political questions (or to speak in the emotional register required to convey urgency) and, on the other hand, that if they produced abundant and compelling scientific information (and explained it calmly and clearly), the world would take steps to avert disaster.

**The politics of climate denialism is ethically bankrupt – it allows those who are least affected to engage in the most dangerous decisions**

Brown 2008

Donald A., Associate Professor, Environmental Ethics, Science, and Law, Penn State University, “The Ethical Duty to Reduce Greenhouse Gas Emissions in the Face of Scientific Uncertainty,” http://rockblogs.psu.edu/climate/2008/05/the-ethical-duty-to-reduce-greenhouse-gas-emissions-in-the-face-of-scientific-uncertainty.html?p=35

A common point of attack of the skeptics is the climate change models that are relied upon by IPCC to predict climate futures by mainstream climate scientists. The skeptics often attack the models for their failure to deal with elements of the climate system that could have an impact on the amount of warming experienced. But given the complexity of the climate system, biosphere interactions, and the carbon cycle system, the only way to make predictions about climate futures is to rely upon models. The skeptics often attack the climate models despite the fact that climate models will probably never be able to prove with high degrees of certainty what future global temperatures will actually be. This is the case because the climate models will for the foreseeable future need to simplify a complex and chaotic climate system, rely on speculation about future population, technology, and use of fossil fuels, and make reasonable guesses about human health and environmental impacts of temperature change through the use of environmental impact science, an inherently uncertain science. Therefore, the skeptics' attack on mainstream climate science on the grounds of its use of unproven assumptions in the climate models hides a very controversial but unstated ethical position, namely that governments should not act until strong scientific proof is in. For this reason, the skeptics' appear to be opposed to the use of science that describes potentially dangerous behavior. In taking this position, those opposing action to reduce the threat of climate change are implicitly arguing that the burden of proof should be on those who may be victims of global warming to show that damages to them will actually occur. At the same time, those relying on the skeptic's arguments to oppose government action appear to be denying that those who are engaged in dangerous behavior have any responsibility to refrain from endangering others. In response to the skeptics' attack on the science on which proposed global warming policy is based, the mainstream scientists sometimes defend their position on scientific rather than ethical grounds, explaining why their view of the "facts" is scientifically respectable, rather than arguing that ethics demands that highly plausible but unproven consequences should be considered in public policy debates. The public watching this debate between the scientists can be confused by such debates because the actual difference between the contending parties are often different assumptions about when conclusions can be drawn from uncertain science. Unless the contending parties' assumptions about how science should proceed in controversies where consequences are uncertain are visible to the public, an interested party may not be able to discern what the argument is about or mistakenly assume the argument is only about" good" or "bad" science. From the standpoint of ethics, those who engage in risky behavior are not exonerated because they did not know that their behavior would actually cause damage. Under law that implements this ethical norm, for instance, to be convicted of reckless driving or reckless endangerment, a prosecutor simply has to prove that the defendant acted in a way that he or she should have known to be risky. Many types of risky behavior are criminal because societies believe dangerous behavior is irresponsible and should not be condoned. As a matter of ethics, a relevant question in the face of scientific uncertainty about harmful consequences of human behavior is whether there is a reasonable basis for concluding that serious harm to others could result from the behavior. Yet, as we have seen, in the case of climate change, humans have understood the potential threat from climate change for over one hundred years and the scientific support for this concern has been building with increasing speed over the last thirty years. In fact, for more than 18 years, the IPCC, a scientific body created with the strong support of governments around the world to advise them about the conclusions of peer review climate change science, has been telling the world that the great harm from climate change is not only possible but likely with increasing levels of confidence. By the end of the 1980s there was widespread understanding among climate change scientists around the world that there was a great threat posed by rising concentrations of atmospheric concentrations of greenhouse gases event though there were considerable uncertainties about timing and magnitude of climate change impacts. The climate science that has been accumulating in the last 20 years has been increasing the confidence about timing and magnitude of climate change impacts according to IPCC as wells as reasons for concluding that recent warming is largely human caused not withstanding considerable natural variability in the climate system. For this reason, those emitting high levels of greenhouse gases cannot deny that their emissions create a significant risk to human health and the environment around the world even if one disagrees with the specific predictions about timing and magnitude of climate change impacts now being articulated by the IPCC and the international scientific organizations that support the IPCC conclusions even if one believes that the IPCC's conclusions have not been proven with sufficient levels of confidence. The argument that high emitting nations need not reduce their greenhouse gas emissions because of scientific uncertainty about timing and magnitude of climate change impacts does not withstand minimum ethical scrutiny because of certain additional facts about climate change including: The enormous adverse potential impacts on human health and the environment from human induced climate change articulated by the consensus view. The disproportionate climate change impacts on the poorest people of the world. The real potential for potentially catastrophic climate surprises much greater than often quoted predictions made by IPCC. The fact that much of the science of the climate change problem has never or is not now in dispute even if one acknowledges some remaining uncertainty about timing or magnitude of climate change impacts. The fact that climate change damage is probably already being experienced by some people, plants, animals, and ecosystems around the world in the form of rising seas and increased strength of tropical storms and more frequent and intense droughts and floods. The strong likelihood that serious and irreversible damage will be experienced before all the uncertainties can be eliminated. The fact that the longer nations wait to take action, the more difficult it will be to stabilize greenhouse gases at levels which don't create serious damage. The fact that those who will be most harmed by climate change have rights to be consulted about decisions based upon scientific uncertainty. Given these facts about climate change, it is inconceivable that any ethical system would condone an excuse for non action by high emitters based upon scientific uncertainty for not reducing greenhouse gas emissions. This is particularly true because if IPCC is wrong it could be wrong in both directions, that is, climate change impacts could be much worse than the impacts identified by IPCC as well as less harmful. Despite high levels of certainty expressed by IPCC about many aspects of climate change, it may take decades to resolve some of the remaining major uncertainties in the climate models and by then it will very likely be too late to avoid additional damage caused by inaction. All major ethical systems would strongly condemn behavior that is much less threatening and dangerous than climate change. That is deontological, utilitarian, justice, ecocentric, biocentric, and relationship based ethics would not condone using scientific uncertainty as justification for not reducing high levels of greenhouse gas emissions. (See Brown, 2002. 141-148.) For this is a problem that if not controlled may cause the death of tens or hundreds of thousands of helpless victims caused by intense storms and heat waves, the death or sickness of millions that may suffer dengue fever or malaria, the destruction of some nations' ability to grow food or provide drinking water, the devastation of forests and personal property, and the acceleration of elimination of countless species of plants and animals that are already stressed by other human activities. In summary, global warming threatens many of the things that humans hold to be of most value, i.e., life, health, family, the ability to make a living, community, and the natural environment. The ethical duty to avoid risky behavior is proportional to the magnitude of the potential harm. Because climate change is likely to cause death to many, if not millions of people, through heat stroke, vector borne disease, and flooding, annihilate many island nations by rising seas, cause billions of dollars in property damage in intense storms, and destroy the ability of hundreds of millions to feed themselves in hotter drier climates, the duty to refrain from activities which could cause global warming is extraordinarily strong even in the face of scientific uncertainty about consequences Therefore, the nature of the risk from climate change is enormous and using scientific uncertainty as an excuse for doing nothing is ethically intolerable. The fact that there is wide spread cross-cultural acceptance of the idea that one should not engage in risky behavior that could cause great harm to things which people attach great value to is clear from the acceptance of the "precautionary principle" in a growing number of international treaties including the 1992 United Nations Framework Convention on Climate Change (UN, 1992, Article 3). Under the precautionary principle embedded in the binding climate change convention, nations agreed not to use scientific uncertainty as an excuse for not taking cost-effective action. This is an additional ethical reason why scientific uncertainty cannot now be used by nations as an excuse for refusing to make reductions to their fair share of safe global emissions. That is, in addition to the ethical reasons given above, a nation may not break a promise made to other nations in the United Nations Framework Convention on Climate Change to not use scientific uncertainty as justification for non-action on climate change.

**Affirmation of our story is critical—our dystopian future-historical approach is critical to prevent the sublimination inherent in other approaches**

Murphy 1990

Patrick D., recognized academic in the Association for the Study of Literature and Environment, professor of English and teaches in the Graduate Program in Literature and Criticism at Indiana University of Pennsylvania, Founding editor of ISLE: Interdisciplinary Studies in Literature and Environment, “Reducing the Dystopian Distance: Pseudo-Documentary Framing in Near-Future Fiction,” Science Fiction Studies, Vol. 17, No. 1 (Mar., 1990), pp. 25-40

Two novels that strongly reflect just such a concern are Whitley Strieber and James Kunctka's Warday. and the Journey Onward (1984) and Margaret At wood's The Handmaid's Tale (1985). Both works inno-vatively utilize pseudo-documentary framing so as to reduce the dystopian distance between tenor and vehicle and thereby once more make strange what has become all too conventional: the dystopian features of the present and the possible horrors of the future. But in order to appreciate the significance of their formal strategies, it is necessary to review the general problem these writers have faced and attempted to resolve. "However empirically unverifiable the narrative agents, objects or events of SF may be." Darko Suvin observes—and "SF" here includes its socio-political subgenrc. uiopian/dystoptan fiction—their constellation in all still (literally) significant cases shapes a parable about ourselves" (p. 37).If the similarities between analogue and contemporary world are rendered too tenuously, inadequately, or just inconsistently, the parabolic shape may not be recognized as a thematic constellation. "In optimal SF." Suvin argues, "the interaction of the vehicle (relations in the fictional universe) and the tenor (relations in the empirical universe), makes...for the reader's parabolic freedom"; and "since freedom entails the possibility of something truly different coming about, the distinction between the consistent and inconsistent novum...is...not only a key to aesthetic quality but also to its ethico-political liberating potentiality" (p. 70). The failure to generate such parabolic freedom will result in sublimation rather than cognition during the reading process. Sublimation, according to Robert Scholes, "is a way of turning our concerns into satisfying shape, a way of relieving anxiety, of making life bearablc"(p. 5). Despite being "one of fiction's major functions." it can also have negative political consequences. If a work seems too far removed from the everyday, too impossibly wonderful, awful, or simply fanciful—what Joanna Russ has labelled "dream literature"—the sublimation that does occur will lead simply to a cathartic reduction of anxiety. And whether it simply enables escapism or reinforces smug assumptions, such a work will encourage social inaction and facilitate the continuation of the status quo. "In its cognitive function," by contrast, fiction helps us to know ourselves and our existential situation\*' (Scholes: 5). It thus encourages discomforting reading and social action through implicitly or explicitly commenting on the reader's contemporary predicament: 'Though formally closed, significant Utopia is thematically open: its pointings reflect back upon the reader's 'topia'" (Suvin: 40-41). It is largely correct to say that "we can understand a world which differs considerably from the actual world and use that understanding to adjust our view of what is or could be the case in the actual world" (Maitre: 18). This statement, however, focusses exclusively on "understanding." Many dystopian writers would be entirely dissatisfied if their novels led people only to understanding and not to any type of social action. Scholes's concepts implicitly associate social activity with cognition and passivity with sublimation. And while "adjustment" may be an important aspect of literature and imagination, an exclusive emphasis on "understanding to adjust our view" foregrounds individual, psychological change in relation to the world rather than individual social responsibility to change the world.1 Changing the individual is. of course, a concern of various Utopias and dystopias, but changing the world predominates. Amin Malak claims that "while dystopias may be fear-laden horror fiction., .the emphasis of the work is not on horror for its own sake, but on forewarning....(The aim is neither to distort reality beyond recognition, nor to provide an escapist world for the reader, but 'to allow certain tendencies in modern society to spin forward without the brake of sentiment and humaneness'" (p. 10; here Malak is quoting Irving Howe's Politics and the Novel). Also, "to varying degrees, dystopias are quintessential^ ideological novels: they engage the reader in what Fredric Jameson calls a 'theoretical discourse.' whereby a range of thematic possibilities are posited and polarized against each other, yet the novels eventually reveal a definite philosophical and socio-political outlook for which fiction proves to be a convenient medium" (p. 11). By definition, then, the writing of a novel genetically as a dystopia formally foregrounds cognition as part of the conventions of its reading and implies an authorial position that literature can effect social change by altering the consciousness of its readers, who will act in the world differently as a result of their new understanding. Writers of contemporary dystopias have utilized a variety of stylistic techniques for preventing their defamiliarizing distance from encouraging a slide from cognition to sublimation. Many authors have chosen the 1984 device of hugging close to the shore of present time. John Brunner. for instance, often seeks to enforce the cognitive function and didactic purpose of his fiction by making his dystopian world similar to contemporary life but foregrounding through exaggeration a few of its elements (as in Stand on Zanzibar (1968] and The Sheep Look Up |1972|). Others increase the degree of estrangement by placing the action on another planet but then rely on the conventions of satire to cue their readers to theme, as in Fred Pohrs7£M(1979). Bui neither Brunncr and Pohl nor numerous other dystopian authors make any effort to have their novels appear as anything other than fictions. Recently, however, a new tack has been taken in dystopian near-future fictions: that of pseudo-documentary framing, which may form part of the narrative itself or figure in the text outside of the narrative. Although having historical precedents in the "discovered manuscript" device used by Swift. Poe, Lovecraft, and others, pseudo-documentary framing is more verisimili-tudinous because of its appeal to journalistic and academic writing conventions. This appeal probably results ai least in pad from the influence of the "new journalism" and the popularity of the "non-fiction novel"; the latter has strong similarities to the historical novel except that its action is contemporaneous with, rather than preceding, the time of its production and reading. The revivification of epistolary, diary, and journal modes of writing, on the other hand, results more from feminist attention to forms of women's writing than from historical genre influences, at least when practiced by female authors. Striebcr and Kunetka's Warday demonstrates the contemporaneous, journalistic type of pseudo-documentary framing, while Atwood's The Handmaid's Tale demonstrates post-future history pseudo-documentary framing, specifically its academic variant.' Both of these works have been national bestsellers and represent two of the major topics of contemporary dystopias: the aftermath of nuclear war and women's oppression.3 They also both share a concern for the third major topic: ecological devastation.

**That enables agency—the status quo results in the collapse of all political action—only a reinvigoration of science fiction stories can create new paradigms and possibilities**

Jonathan McCalmont, Author, 10/3/2012, Cowardice, Laziness and Irony: How Science Fiction Lost the Future, ruthlessculture.com/2012/10/03/cowardice-laziness-and-irony-how-science-fiction-lost-the-future/

While many of these books are excellent examples of their styles of writing, I cannot help but yearn for books that plunge us into the world **rather than aid our flight from it**. The thing that unites humanity is not the trappings of popular culture, but the realities of a world that needs to be both confronted and understood if it is ever to change.

It is now almost a cliché to say that we are living in a science fictional world but it is genuinely astonishing to think about how much science fiction writers have got right over the years:

Every morning, I sit at my desk and fire up a Twitter client that allows me to communicate with people around the globe in real time. Both a sounding board and a source of information, Twitter has me bouncing my ideas off Australian graduate students and Indian journalists while other people retweet links to their latest blog posts for the people living in different time zones. Cory Doctorow’s Eastern Standard Tribe (2004) predicted much of what it meant to have one’s community exist in entirely different places and yet hardly any contemporary science fiction novels acknowledge the existence of social media let alone engage with the social and psychological changes heralded by such a radically different types of community.

Having grown afraid of the political repercussions of putting soldiers in harm’s way, American political elites have increasingly come to rely on the use of remote controlled planes as a means of imposing American political hegemony on remote parts of the globe. Increasingly sophisticated at the level of both software and hardware, these drones are beginning to resemble the drones that appeared in Iain M. Banks’ Culture novels but while Banks’ predictions of a hard robotic hand inside a velvety human glove come to pass, Banks himself seems more interested in reimagining the Culture as a fantastical backdrop similar to that of Vernor Vinge’s Zones of Thought series.

I used the examples of Doctorow and Banks as both are writers whose careers have played out against a background of ironic detachment. Indeed, between Doctorow’s fondness for Disney’s Magic Kingdom and Banks’ increasing fondness for epic quest narratives, both Doctorow and Banks demonstrate how even the most detached of writers can sometimes connect directly to the world around them. Indeed, the point of this essay was never to make monolithic statements about the true nature of science fiction but rather to draw attention to a broad narrative of detachment that has transformed the mainstream of science fiction into an airless postmodern vacuum. Science fiction never completely stopped commenting on the world… it’s just that the works that do comment on the world do not get as much attention as those that pointedly ignore it. Similarly, few writers have completely abandoned writing about either the future or science, it is just that these ideas now lurk on the periphery rather than in the foreground of the text. I am not calling for a complete re-think of the science fictional enterprise, rather I would like to see the genre seize this historic opportunity and rediscover its heritage of engagement and prediction.

Part of what makes this moment so special is the fact that we have seen cracks appear in the façade of neoliberalism. Francis Fukuyama once wrote of the end of history having been achieved but the economic, social and political turbulence engulfing the world make it clear that history is very much alive and kicking.

**The challenge facing contemporary science fiction is to widen the cracks and to peer through the fractured veneer of neoliberalism in an effort to see what could one day come to pass**. These **futures, though speculative, must always remain anchored in the present moment as the real challenge facing science fiction is not merely to create a possible future**, **but to create the type of possible future that is currently deemed unthinkable**. As Mark fisher puts it:

 The long dark night of the end of history has to be grasped as an enormous opportunity. The very oppressive pervasiveness of capitalist realism means that even glimmers of alternative political and economic possibilities can have a disproportionately great effect. The tiniest event can tear a hole in the grey curtain of reaction which has marked the horizons of possibility under capitalist realism. From a situation in which nothing can happen, suddenly anything is possible again.

My greatest source of optimism for the future of science fiction lays in the fact that science fiction has handled precisely this type of situation before. Back in the 1950s, the British science fiction author John Wyndham wrote a series of novels attempting to make sense of the end of the British Empire. Snarkily dubbed ‘Cosy Catastrophes’ by Brian Aldiss, these works painted a memorable image of middle-class folk struggling to cling to their old lifestyles as the world fell apart around them.

In The Day of the Triffids (1951) Wyndham describes middle-class people being shackled to the sick and blind in a misguided effort to create a more equal society. Confronted by this nightmare of post-Imperial socialist egalitarianism, Wyndham’s characters retreat to the Isle of Wight where they begin to draw up plans to re-impose their middle-class values on the world. A similar terror of unchecked social change pervades Wyndham’s The Midwich Cuckoos (1957) as a group of villagers realise that their brilliantly gifted children are in fact a group of inhuman monsters that must be destroyed lest their difference taint the entire planet.

Looking back on Wyndham’s work, it is easy to laugh at the astonishing narrow-mindedness of his concerns. Less than a decade after the publication of The Midwich Cuckoos, Stan Lee and Jack Kirby would take the idea of a generation of radically Other children and turned it into a franchise that sold millions of comics and inspired the creation of a series of vastly successful blockbuster movies. We laugh at Wyndham’s social conservatism and cheer the X-men’s celebration of difference in part because Wyndham did his job as a science fiction writer. By using genre techniques to isolate social trends and force them out into the open where they can be discussed and analysed in a fictional context, Wyndham was helping an entire generation process and come to terms with a period of intense social unrest, a period very similar to our own.

We are living through a period of instability. As government and businesses teeter on the brink of collapse and individuals acquire fortunes so vast that they beggar belief, our cosy Western reality is beginning to fall apart. For the first time in decades, the next generation of Westerners will be less well off than their parents as jobs, housing and opportunity decline across the board. Devoid of ideas and clearly terrified by the responsibility of having to keep a decaying system together, Western leaders tear up a century of political reform and strip the state back to its feudal origins: Armies to fight foreigners and a police force to fight everyone else. **Faced with** such **terrifying instability and the shadow of a hideous future being born, Western culture has responded by** dutifully **ignoring the warning signs** and encouraging us to buy more stuff. Don’t worry about your job… picture yourself as a Victorian airship captain! Don’t think too much about what the government is doing with your taxes… read a series of novels about bloggers fighting zombies! Don’t pay attention to real world inequalities… moan about how oppressed and mistreated you are for wanting to watch a cartoon about magical ponies and friendship! Never has the term ‘cosy catastrophe’ seemed more fitting than it does today.

Just as Joe Haldeman once used science fictional tropes to process the experience of returning from Vietnam to find America completely changed in The Forever War (1976) and Joanna Russ’s The Female Man (1975) addressed the changing nature of female identity, contemporary science fiction must find a way to confront, process and make sense of the world as it is today. We are living in a science fictional world and this means that science fiction is in a unique position to help us to make sense of a dangerously unstable world. By rediscovering its ties to reality and using old tropes to explore new problems, science fiction can provide humanity with its first draft of future history.

Action on energy policy requires a disruption of traditional deliberatory politics and attention to the performative elements of advocacy – this trumps the technocratic fantasy of purely rational consensus

Kulynych 97

Jessica J. Kulynych is an Assistant Professor of Political Science at Winthrop University in Rock Hill, South Carolina. She is currently engaged in a book-length study applying the insights of postmodern and feminist theorizing to the problem of understanding contemporary political action. Performing Politics: Foucault, Habermas, and Postmodern Participation Author(s): Jessica J. Kulynych Source: Polity, Vol. 30, No. 2 (Winter, 1997), pp. 315-346

Reconsidering Traditional Participation Understanding participation as performative resistance also provides a theoretical grounding for rethinking conventional participatory activities. The breakdown of the distinction between participation and resistance means that conventional political activities may also take on the character of resistance. For example, a performative concept of participation may shed new light on phenomena such as the "Perot vote," where citizens admittedly cast their vote with little expectation of influencing the outcome. In other words, the vote is not merely a conduit for the expression of particular citizen interests or preferences; rather, its purpose depends upon the surrounding environment. Lacking clear choices and substantive discussion of long-term goals, voting or nonvoting itself may become a form of protest. Performative participation captures the sense of destabilization and disruption that more and more characterizes today's electorate. Likewise, unconventional activities such as protest marches may in turn appear to communicate citizen preferences and sustain system legitimacy in systems where those activities become institutionalized. Yearly Washington marches, for example, may actually diffuse discontent by providing a legitimate outlet for protest; at the same time they verify system legitimacy by focusing protest toward the formal legal structures of government. Political participation must also account for the performative potential of traditional acts of participation in modern societies where these acts no longer fill traditional purposes, as well as the complicity of formalized protest in bolstering the status quo. Overall, both Habermas and Foucaull direct attention away from traditional participatory activities directed at the formal apparatus of government. Yet they also connect these participatory activities back to larger, more globalized, and more institutionalized power regimes. While Foucault concentrates on contests at the micro-level, he contends that those contests provide the raw material for global domination. Similarly Habermas has moved from a relatively pessimistic and defensive view of the political process (where democracy was limited to a communicative but protected public sphere whose legitimate opinions made few inroads into political administration), to a more promising theorization of a "democratized administration" in a constitutional state that "translates" legitimate influence into political and administrative power. Although my theorization of a performative concept of participation as resistance is designed to reiterate the importance of focusing on more surprising instances of participation, this expansion and redefinition of participation does not preclude the continuance of representative institutions and formalized participation. Rather it rearranges their purpose and priority. An expanded notion of political participation as performative resistance allows for a more effective thematization of social problems, and it demonstrates how performative resistance is not above or below traditional participation, but necessarily within it. Performative resistance is evident in intimate and personal relationships, in the deliberations of civil society, and in the problem-solving institutions of the constitutional state. While Habermas insists on a separation between the problem-solving that takes place in parliaments and the world-disclosing that is the function of the public sphere, a performative conception of participation effectively undermines any firm separation between problem solving and world disclosure. Proposals for group representation in legislative institutions by theorists such as Young and Guinier make more sense from a performative perspective because they encourage the performative reconstimtion of identity not only in private life, but also at the level of public decisionmaking.'\* VII. The Politics of Deliberation in a Performative Perspective A performative perspective on participation enriches our understanding of deliberative democracy. This enlarged understanding can be demonstrated by considering the examination of citizen politics in Germany presented in Carol Hager's Technological Democracy: Bureaucracy and Citizenry in the West German Energy Debate.B\* Her work skillfully maps the precarious position of citizen groups as they enter into problem-solving in contemporary democracies. After detailing the German citizen foray into technical debate and the subsequent creation of energy commissions to deliberate on the long-term goals of energy policy, she concludes that a dual standard of interpretation and evaluation is required for full understanding of the prospects for citizen participation. Where traditional understandings of participation focus on the policy dimension and concern themselves with the citizens' success or failure to attain policy preferences, she advocates focusing as well on the discursive, legitimation dimension of citizen action. Hager follows Habermas in reconstituting participation discursively and asserts that the legitimation dimension offers an alternative reason for optimism about the efficacy of citizen action. In the discursive understanding of participation, success is not defined in terms of getting, but rather in terms of solving through consensus. Deliberation is thus an end in itself, and citizens have succeeded whenever they are able to secure a realm of deliberative politics where the aim is forging consensus among participants, rather than achieving victory by some over others. Through the creation of numerous networks of communication and the generation of publicity, citizen action furthers democracy by assuming a substantive role in governing and by forcing participants in the policy process to legitimate their positions politically rather than technically. Hager maintains that a sense of political efficacy is enhanced by this politically interactive role even though citizens were only minimally successful in influencing or controlling the outcome of the policy debate, and experienced a real lack of autonomy as they were coerced into adopting the terms of the technical debate. She agrees with Alberto Melucci that ihe impact of [these] movements cannot ... be judged by normal criteria of efficacy and success. . . . These groups offer a different way of perceiving and naming the world. They demonstrate that alternatives are possible, and they expand the communicative as opposed to the bureaucratic or market realms of societal activity." Yet her analysis is incomplete. Like Habermas, Hager relies too heavily on a discursive reconstitution of political action. Though she recognized many of the limitations of Habermas's theory discussed above, she insists on the innovative and creative potential of citizen initiatives. She insists that deliberative politics can resist the tendency toward authoritarianism common to even a communicative, deliberative search for objective truth, and that legitimation debates can avoid the tendency to devolve into the technical search for the better argument. She bases her optimism on the non-hierarchical, sometimes even chaotic and incoherent, forms of decisionmaking practiced by citizen initiatives, and on the diversity and spontaneity of citizen groups. Unfortunately, it is precisely these elements of citizen action that cannot be explained by a theory of communicative action. It is here that a performative conception of political action implicitly informs Hager's discussion. From a performative perspective, the goal of action is not only to secure a realm for deliberative politics, but to disrupt and resist the norms and identities that structure such a realm and its participants. While Habermas theorizes that political solutions will emerge from dialogue, a performative understanding of participation highlights the limits of dialogue and the creative and often uncontrollable effect of unpremeditated action on the very foundations of communication. When we look at the success of citizen initiatives from a performative perspective, we look precisely at those moments of defiance and disruption that bring the invisible and unimaginable into view. Although citizens were minimally successful in influencing or controlling the out- come of ihe policy debate and experienced a considerable lack of autonomy in their coercion into the technical debate, the goal-oriented debate within the energy commissions could be seen as a defiant moment of performative politics. The existence of a goal-oriented debate within a technically dominated arena defied the normalizing separation between expert policymakers and consuming citizens. Citizens momentarily recreated themselves as policymakers in a system that defined citizens out of the policy process, thereby refusing their construction as passive clients. The disruptive potential of the energy commissions continues to defy technical bureaucracy even while their decisions are non-binding. Where traditional understandings of political participation see the energy commissions' failure to recapture the decisionmaking process as an expression of the power of the bureaucracy, and discursive understandings see the tendency toward devolution into technical debate and procedural imperative, the performative perspective explains and highlights the moments of defiant creativity and disruptive diversity that inevitably accompany citizen expeditions into unexplored territory. This attitude of defiance, manifest in the very chaos and spontaneity that Hager points toward as a counter to Habermas's strictly dialogic and procedural approach, simply cannot be explained by an exclusively discursive theory. It is the performative aspects of participation that cannot be captured or constrained within the confines of rational discourse, that gesture toward meanings that are inexpressible and identities that are unimaginable within the current cultural imagery. These performances provide the resource for diversity and spontaneity. Consider, for example, a public hearing. When seen from a discursive, legitimation perspective, deliberation and debate are about the sincere, controlled attempt to discern the best, most rational, least biased arguments that most precisely express an interlocutor's ideas and interests. In practice, however, deliberation is a much less deliberative and much more performative activity. The literary aspects of debate—irony, satire, sarcasm, and wit—work precisely on the slippage between what is said and what is meant, or what can be said and what can be conceived. Strategies such as humor are not merely rational, but visceral and often uncontrollable, as is the laughter that is evoked from such strategies. Performative actions are not alternative ways of deliberating; rather they are agonistic expressions of what cannot be captured by deliberative rationality. As such, they resist the confines of that rationality and gesture toward places where words, arguments, and claims are not enough. Without an understanding of the performative aspect of political action, Hager cannot explain how citizens are able to introduce genuinely new and different "ways of perceiving and naming the world" into a realm where such epistemic standards are unimaginable. Il is in Ihe process of acting as citizens in a technical bureaucratic setting, where citizen aclion is by definition precluded, that alternative, epistemic standards of evaluation become possible. Only when scholars recognize the performative will they be able to grasp the intricacies of contemporary political action and the possibilities for an actually diverse and participatory democracy.

**Refusal to incorporate questions of pedagogy and question the hegemony of anti-ecological dynamics leads to environmental destruction and authoritarian violence**

Darder 10 (Professor Antonia Darder, Distinguished Professor of Education, University of Illinois, Urbana Champaign, “Preface” in Critical Pedagogy, Ecoliteracy, and Planetary Crisis: The Ecopedagogy Movement by Richard V. Kahn, 2010, pp. xiv-xvi)

True to this dictum, Kahn unambiguously demands that the survival of the planet (and ourselves!) underscore our political and pedagogical decisions, despite the fact that seldom have questions of ecological concern been made central to the everyday lives of teachers and students or to the larger context of movement work, save for the liberal agenda of the Sierra Club or the wellmeaning discourse on population control for poor and racialized women, espoused by people of all ideological stripes. Perhaps, it is this “missing link” in the curriculum of both public schools and political movements that is most responsible for the historically uncritical and listless response to the global suffering of human beings subjected to imperial regimes of genocide, slavery, and colonialism. In truth, a deeper analysis exposes sharply a legacy that persists today in the shrouded values and attitudes of educators from the dominant class and culture who expect that all oppressed populations and living species should acquiesce to the dominion and hegemonic rule of the wealthy elite. It is precisely such a worldview of domination that perpetuates the extinction of whole species, as it does the cultural and linguistic destruction of peoples and nations outside of a “first-world” classification. As a consequence, our biodiversity is slipping away, despite scientific findings that clearly warn of the loss of hardiness and vitality to human life, as a direct consequence of the homogenization of our differences. It is equally ironic to note here how repression of the body itself is manifested within the capitalist fervor to commodify or colonize all forms of vital existence. Schools, unfortunately, are one of the most complicit institutions in the exercise of such ecological repression, generally carried out through the immobilization of the body and the subordination of our emotional nature, our sexual energies, and spiritual capacities. In response, Kahn eloquently argues for a critical ecopedagogy and ecoliteracy that supports teachers in engaging substantively students’ integral natures, in an effort to forge an emancipatory learning environment where all can thrive amid everyday concerns. As such, he makes clear that, although important, it is not enough to rely solely on abstract cognitive processes, where only the analysis of words and texts are privileged in the construction of knowledge. Such an educational process of estrangement functions to alienate and isolate students from the natural world around them, from themselves, and one another. This, unwittingly, serves to reinforce an anthropocentric reading of the world, which denies and disregards the wisdom and knowledge outside Western formulations. In contrast, an ecopedagogy that sustains life and creativity is firmly grounded in a material and social understanding of our interconnected organic existence, as a starting place for classroom practice and political strategies for reinventing the world. Also significant to Kahn’s notion of ecopedagogy is an engagement with the emancipatory insights and cultural knowledge of indigenous populations, given that the majority of the social and political problems facing us today are fundamentally rooted in mainstream social relations and material conditions that fuel authoritarianism, fragmentation, alienation, violence, and greed. Such anti-ecological dynamics are predicated on an ahistorical and uncritical view of life that enables the powerful to abdicate their collective responsibility to democratic ideals, while superimposing a technocratic and instrumental rationality that commodifies and objectifies all existence. Such a practice of education serves to warp or marginalize diverse indigenous knowledge and practices, by privileging repetitive and unimaginative curricula and fetishized methods. Anchored upon such a perspective of schooling, classroom curriculum socializes students into full-blown identities as entitled consuming masters and exploiters of the earth, rather than collective caretakers of the planet. In contrast, Kahn explores the inherent possibilities at work within indigenous knowledge and traditions, in ways that enhance our capacity to not only critique conditions of ecological crisis, but to consider ways in which non-Western societies and peoples have enacted ecologically sustaining practices within the everyday lives of their communities. He turns the false dominion of the West on its head, offering alternative ways of being that hold possibilities for the reconstruction of institutional culture, the transformation of how we view technology and science, and thus the reformulation of public policy. As critical educators and revolutionary activists across communities of difference, we are encouraged to turn to the wisdom of our own historical survival, in serious and sustained ways, in order to work toward the abandonment of colonizing values and practices that for centuries have denigrated our cultural ways and attempted to disable our life-sustaining capacities.

**Climate denialism is part and parcel of the politics of disimagination that stifles democratic potential – we must open up debate as a space for new pedagogies not the repressive training of modern politics**

Giroux 27.2.2013

Henry A., Global TV Network Chair Professorship at McMaster University in the English and Cultural Studies Department, “The Politics of Disimagination and the Pathologies of Power,” http://truth-out.org/news/item/14814-the-politics-of-disimagination-and-the-pathologies-of-power

The Rise of the "Disimagination Machine"

Borrowing from Georges Didi-Huberman's use of the term, "disimagination machine," I argue that the politics of disimagination refers to images, and I would argue institutions, discourses, and other modes of representation, that undermine the capacity of individuals to bear witness to a different and critical sense of remembering, agency, ethics and collective resistance.[21] The "disimagination machine" is both a set of cultural apparatuses extending from schools and mainstream media to the new sites of screen culture, and a public pedagogy that functions primarily to undermine the ability of individuals to think critically, imagine the unimaginable, and engage in thoughtful and critical dialogue: put simply, to become critically informed citizens of the world.

Examples of the "disimagination machine" abound. A few will suffice. For instance, the Texas State Board of Education and other conservative boards of education throughout the United States are rewriting American textbooks to promote and impose on America's public school students what Katherine Stewart calls "a Christian nationalist version of US history" in which Jesus is implored to "invade" public schools.[22] In this version of history, the term "slavery" is removed from textbooks and replaced with "Atlantic triangular trade," the earth is 6,000 years old, and the Enlightenment is the enemy of education. Historical figures such as Jefferson, Thomas Paine and Benjamin Franklin, considered to have suspect religious views, "are ruthlessly demoted or purged altogether from the study program."[23] Currently, 46 percent of the American population believes in the creationist view of evolution and increasingly rejects scientific evidence, research and rationality as either 'academic' or irreligious.[24]

The rise of the Tea Party and the renewal of the culture wars have resulted in a Republican Party which is now considered the party of anti-science. Similarly, right-wing politicians, media, talk show hosts and other conservative pundits loudly and widely spread the message that a culture of questioning is antithetical to the American way of life. Moreover, this message is also promoted by conservative groups such as The American Legislative Exchange Council, (ALEC) which has "hit the ground running in 2013, pushing 'model bills' mandating the teaching of climate change denial in public school systems."[25] The climate-change-denial machine is also promoted by powerful conservative groups such as the Heartland Institute. Ignorance is never too far from repression, as was recently demonstrated in Arizona, where State Rep. Bob Thorpe, a Republican freshman Tea Party member, introduced a new bill requiring students to take a loyalty oath in order to receive a graduation diploma.[26]

The "disimagination machine" is more powerful than ever as conservative think tanks provide ample funds for training and promoting anti-public pseudo-intellectuals and religious fundamentalists while simultaneously offering policy statements and talking points to conservative media such as FOX News, Christian news networks, right-wing talk radio, and partisan social media and blogs. This ever growing information/illiteracy bubble has become a powerful force of public pedagogy in the larger culture and is responsible for not only the war on science, reason and critical thought, but also the war on women's reproductive rights, poor minority youth, immigrants, public schooling, and any other marginalized group or institution that challenges the anti-intellectual, anti-democratic worldviews of the new extremists and the narrative supporting Christian nationalism. Liberal Democrats, of course, contribute to this "disimagination machine" through educational policies that substitute critical thinking and critical pedagogy for paralyzing pedagogies of memorization and rote learning tied to high-stakes testing in the service of creating a neoliberal, dumbed-down workforce.

As John Atcheson has pointed out, we are "witnessing an epochal shift in our socio-political world. We are de-evolving, hurtling headlong into a past that was defined by serfs and lords; by necromancy and superstition; by policies based on fiat, not facts."[27] We are also plunging into a dark world of anti-intellectualism, civic illiteracy and a formative culture supportive of an authoritarian state. The embrace of ignorance is at the center of political life today, and a reactionary form of public pedagogy has become the most powerful element of the politics of authoritarianism. Civic illiteracy is the modus operandi for creating depoliticized subjects who believe that consumerism is the only obligation of citizenship, who privilege opinions over reasoned arguments, and who are led to believe that ignorance is a virtue rather than a political and civic liability. In any educated democracy, much of the debate that occupies political life today, extending from creationism and climate change denial to "birther" arguments, would be speedily dismissed as magical thinking, superstition and an obvious form of ignorance. Mark Slouka is right in arguing that, "Ignorance gives us a sense of community; it confers citizenship; our representatives either share it or bow down to it or risk our wrath.... Communicate intelligently in America and you're immediately suspect."[28] The politics and machinery of disimagination and its production of ever-deepening ignorance dominates American society because it produces, to a large degree, uninformed customers, hapless clients, depoliticized subjects and illiterate citizens incapable of holding corporate and political power accountable. At stake here is more than the dangerous concentration of economic, political and cultural power in the hands of the ultrarich, megacorporations and elite financial services industries. Also at issue is the widespread perversion of the social, critical education, the public good, and democracy itself.

Toward a Radical Imagination

Against the politics of disimagination, progressives, workers, educators, young people and others need to develop a new language of radical reform and create new public spheres that provide the pedagogical conditions for critical thought, dialogue and thoughtful deliberation. At stake here is a notion of pedagogy that both informs the mind and creates the conditions for modes of agency that are critical, informed, engaged and socially responsible. The radical imagination can be nurtured around the merging of critique and hope, the capacity to connect private troubles with broader social considerations, and the production of alternative formative cultures that provide the precondition for political engagement and for energizing democratic movements for social change - movements willing to think beyond isolated struggles and the limits of a savage global capitalism. Stanley Aronowitz and Peter Bratsis point to such a project in their manifesto on the radical imagination. They write:

This Manifesto looks forward to the creation of a new political Left formation that can overcome fragmentation, and provide a solid basis for many-side interventions in the current economic, political and social crises that afflict people in all walks of life. The Left must once again offer to young people, people of color, women, workers, activists, intellectuals and newly-arrived immigrants places to learn how the capitalist system works in all of its forms of exploitation whether personal, political, or economic. We need to reconstruct a platform to oppose Capital. It must ask in this moment of US global hegemony what are the alternatives to its cruel power over our lives, and those of large portions of the world's peoples. And the Left formation is needed to offer proposals on how to rebuild a militant, democratic labor movement, strengthen and transform the social movements; and, more generally, provide the opportunity to obtain a broad education that is denied to them by official institutions. We need a political formation dedicated to the proposition that radical theory and practice are inextricably linked, that knowledge without action is impotent, but action without knowledge is blind.[29]

Matters of justice, equality, and political participation are foundational to any functioning democracy, but it is important to recognize that they have to be rooted in a vibrant formative culture in which democracy is understood not just as a political and economic structure but also as a civic force enabling justice, equality and freedom to flourish. While the institutions and practices of a civil society and an aspiring democracy § Marked 20:12 § are essential in this project, what must also be present are the principles and modes of civic education and critical engagement that support the very foundations of democratic culture. Central to such a project is the development of a new radical imagination both through the pedagogies and projects of public intellectuals in the academy and through work that can be done in other educational sites, such as the new media. Utilizing the Internet, social media, and other elements of the digital and screen culture, public intellectuals, cultural workers, young people and others can address larger audiences and present the task of challenging diverse forms of oppression, exploitation and exclusion as part of a broader effort to create a radical democracy.

There is a need to invent modes of pedagogy that release the imagination, connect learning to social change and create social relations in which people assume responsibility for each other. Such a pedagogy is not about methods or prepping students to learn how to take tests. Nor is such an education about imposing harsh disciplinary behaviors in the service of a pedagogy of oppression. On the contrary, it is about a moral and political practice capable of enabling students and others to become more knowledgeable while creating the conditions for generating a new vision of the future in which people can recognize themselves, a vision that connects with and speaks to the desires, dreams and hopes of those who are willing to fight for a radical democracy. Americans need to develop a new understanding of civic literacy, education and engagement, one capable of developing a new conversation and a new political project about democracy, inequality, and the redistribution of wealth and power, and how such a discourse can offer the conditions for democratically inspired visions, modes of governance and policymaking. Americans need to embrace and develop modes of civic literacy, critical education and democratic social movements that view the public good as a utopian imaginary, one that harbors a trace and vision of what it means to defend old and new public spheres that offer spaces where dissent can be produced, public values asserted, dialogue made meaningful and critical thought embraced as a noble ideal.