## 1AC

### Contention One is Warming

#### The best science proves it’s anthropogenic

Muller, 2012 [Richard, professor of physics at the University of California, Berkeley, and a former MacArthur Foundation fellow, “The Conversion of a Climate-Change Skeptic”, http://www.nytimes.com/2012/07/30/opinion/the-conversion-of-a-climate-change-skeptic.html?pagewanted=all]

CALL me a converted skeptic. Three years ago I identified problems in previous climate studies that, in my mind, threw doubt on the very existence of global warming. Last year, following an intensive research effort involving a dozen scientists, I concluded that global warming was real and that the prior estimates of the rate of warming were correct. I’m now going a step further: Humans are almost entirely the cause. My total turnaround, in such a short time, is the result of careful and objective analysis by the Berkeley Earth Surface Temperature project, which I founded with my daughter Elizabeth. Our results show that the average temperature of the earth’s land has risen by two and a half degrees Fahrenheit over the past 250 years, including an increase of one and a half degrees over the most recent 50 years. Moreover, it appears likely that essentially all of this increase results from the human emission of greenhouse gases. These findings are stronger than those of the Intergovernmental Panel on Climate Change [IPCC], the United Nations group that defines the scientific and diplomatic consensus on global warming. In its 2007 report, the I.P.C.C. concluded only that most of the warming of the prior 50 years could be attributed to humans. It was possible, according to the I.P.C.C. consensus statement, that the warming before 1956 could be because of changes in solar activity, and that even a substantial part of the more recent warming could be natural. Our Berkeley Earth approach used sophisticated statistical methods developed largely by our lead scientist, Robert Rohde, which allowed us to determine earth land temperature much further back in time. We carefully studied issues raised by skeptics: biases from urban heating (we duplicated our results using rural data alone), from data selection (prior groups selected fewer than 20 percent of the available temperature stations; we used virtually 100 percent), from poor station quality (we separately analyzed good stations and poor ones) and from human intervention and data adjustment (our work is completely automated and hands-off). In our papers we demonstrate that none of these potentially troublesome effects unduly biased our conclusions. The historic temperature pattern we observed has abrupt dips that match the emissions of known explosive volcanic eruptions; the particulates from such events reflect sunlight, make for beautiful sunsets and cool the earth’s surface for a few years. There are small, rapid variations attributable to El Niño and other ocean currents such as the Gulf Stream; because of such oscillations, the “flattening” of the recent temperature rise that some people claim is not, in our view, statistically significant. What has caused the gradual but systematic rise of two and a half degrees? We tried fitting the shape to simple math functions (exponentials, polynomials), to solar activity and even to rising functions like world population. By far the best match was to the record of atmospheric carbon dioxide (CO2), measured from atmospheric samples and air trapped in polar ice.

#### Fossil fuels are key

Vertessy and Clark3-13**-**2012[Rob, Acting Director of Australian Bureau of Meteorology, and Megan, Chief Executive Officer at the Commonwealth Scientific and Industrial Research Organisation, “State of the Climate 2012”, <http://theconversation.edu.au/state-of-the-climate-2012-5831>]

Carbon dioxide (CO2) emissions account for about 60% of the effect from anthropogenic greenhouse gases on the earth’s energy balance over the past 250 years. These global CO2 emissions are mostly from fossil fuels (more than 85%), land use change, mainly associated with tropical deforestation (less than 10%), and cement production and other industrial processes (about 4%). Australia contributes about 1.3% of the global CO2 emissions. Energy generation continues to climb and is dominated by fossil fuels – suggesting emissions will grow for some time yet. CO2 levels are rising in the atmosphere and ocean. About 50% of the amount of CO2 emitted from fossil fuels, industry, and changes in land-use, stays in the atmosphere. The remainder is taken up by the ocean and land vegetation, in roughly equal parts. The extra carbon dioxide absorbed by the oceans is estimated to have caused about a 30% increase in the level of ocean acidity since pre-industrial times. The sources of the CO2 increase in the atmosphere can be identified from studies of the isotopic composition of atmospheric CO2 and from oxygen (O2) concentration trends in the atmosphere. The observed trends in the isotopic (13C, 14C) composition of CO2 in the atmosphere and the decrease in the concentration of atmospheric O2 confirm that the dominant cause of the observed CO2 increase is the combustion of fossil fuels.

#### 4 degree warming is inevitable with current carbon usage trends – emissions must be reduced

Potsdam Institute, 2012 (Potsdam Institute for Climate Impact Research and Climate Analytics, “Turn Down the Heat: Why a 4°C Warmer World Must be Avoided”, A report for the World Bank, November, http://climatechange.worldbank.org/sites/default/files/Turn\_Down\_the\_heat\_Why\_a\_4\_degree\_centrigrade\_warmer\_world\_must\_be\_avoided.pdf)

The emission pledges made at the climate conventions in Copenhagen and Cancun, if fully met, place the world on a trajectory for a global mean warming of well over 3°C. Even if these pledges are fully implemented there is still about a 20 percent chance of exceeding 4°C in 2100.10 If these pledges are not met then there is a much higher likelihood—more than 40 percent—of warming exceeding 4°C by 2100, and a 10 percent possibility of this occurring already by the 2070s, assuming emissions follow the medium business-as-usual reference pathway. On a higher fossil fuel intensive business-as-usual pathway, such as the IPCC SRESA1FI, warming exceeds 4°C earlier in the 21st century. It is important to note, however, that such a level of warming can still be avoided. There are technically and economically feasible emission pathways that could still limit warming to 2°C or below in the 21st century. To illustrate a possible pathway to warming of 4°C or more, Figure 22 uses the highest SRES scenario, SRESA1FI, and compares it to other, lower scenarios. SRESA1FI is a fossil-fuel intensive, high economic growth scenario that would very likely cause mean the global temperature to exceed a 4°C increase above preindustrial temperatures. Most striking in Figure 22 is the large gap between the projections by 2100 of current emissions reduction pledges and the (lower) emissions scenarios needed to limit warming to 1.5–2°C above pre-industrial levels. This large range in the climate change implications of the emission scenarios by 2100 is important in its own right, but it also sets the stage for an even wider divergence in the changes that would follow over the subsequent centuries, given the long response times of the climate system, including the carbon cycle and climate system components that contribute to sea-level rise. The scenarios presented in Figure 22 indicate the likely onset time for warming of 4°C or more. It can be seen that most of the scenarios remain fairly close together for the next few decades of the 21st century. By the 2050s, however, there are substantial differences among the changes in temperature projected for the different scenarios. In the highest scenario shown here (SRES A1FI), the median estimate (50 percent chance) of warming reaches 4°C by the 2080s, with a smaller probability of 10 percent of exceeding this level by the 2060s. Others have reached similar conclusions (Betts et al. 2011). Thus, even if the policy pledges from climate convention in Copenhagen and Cancun are fully implemented, there is still a chance of exceeding 4°C in 2100. If the pledges are not met and present carbon intensity trends continue, then the higher emissions scenarios shown in Figure 22 become more likely, raising the probability of reaching 4°C global mean warming by the last quarter of this century. Figure 23 shows a probabilistic picture of the regional patterns of change in temperature and precipitation for the lowest and highest RCP scenarios for the AR4 generation of AOGCMS. Patterns are broadly consistent between high and low scenarios. The high latitudes tend to warm substantially more than the global mean. RCP8.5, the highest of the new IPCC AR5 RCP scenarios, can be used to explore the regional implications of a 4°C or warmer world. For this report, results for RCP8.5 (Moss et al. 2010) from the new IPCC AR5 CMIP5 (Coupled Model Intercomparison Project; Taylor, Stouffer, & Meehl 2012) climate projections have been analyzed. Figure 24 shows the full range of increase of global mean temperature over the 21st century, relative to the 1980–2000 period from 24 models driven by the RCP8.5 scenario, with those eight models highlighted that produce a mean warming of 4–5°C above preindustrial temperatures averaged over the period 2080–2100. In terms of regional changes, the models agree that the most pronounced warming (between 4°C and 10°C) is likely to occur over land. During the boreal winter, a strong “arctic amplification” effect is projected, resulting in temperature anomalies of over 10°C in the Arctic region. The subtropical region consisting of the Mediterranean, northern Africa and the Middle East and the contiguous United States is likely to see a monthly summer temperature rise of more than 6°C.

#### Not too late – every reduction key

Nuccitelli 12

[Dana, is an environmental scientist at a private environmental consulting firm in the Sacramento, California area. He has a Bachelor's Degree in astrophysics from the University of California at Berkeley, and a Master's Degree in physics from the University of California at Davis. He has been researching climate science, economics, and solutions as a hobby since 2006, and has contributed to Skeptical Science since September, 2010, <http://www.skepticalscience.com/realistically-what-might-future-climate-look-like.html>, HM]

We're not yet committed to surpassing 2°C global warming, but as Watson noted, we are quickly running out of time to realistically give ourselves a chance to stay below that 'danger limit'. However, 2°C is not a do-or-die threshold. Every bit of CO2 emissions we can reduce means that much avoided future warming, which means that much avoided climate change impacts. As Lonnie Thompson noted, the more global warming we manage to mitigate, the less adaption and suffering we will be forced to cope with in the future. Realistically, based on the current political climate (which we will explore in another post next week), limiting global warming to 2°C is probably the best we can do. However, there is a big difference between 2°C and 3°C, between 3°C and 4°C, and anything greater than 4°C can probably accurately be described as catastrophic, since various tipping points are expected to be triggered at this level. Right now, we are on track for the catastrophic consequences (widespread coral mortality, mass extinctions, hundreds of millions of people adversely impacted by droughts, floods, heat waves, etc.). But we're not stuck on that track just yet, and we need to move ourselves as far off of it as possible by reducing our greenhouse gas emissions as soon and as much as possible. There are of course many people who believe that the planet will not warm as much, or that the impacts of the associated climate change will be as bad as the body of scientific evidence suggests. That is certainly a possiblity, and we very much hope that their optimistic view is correct. However, what we have presented here is the best summary of scientific evidence available, and it paints a very bleak picture if we fail to rapidly reduce our greenhouse gas emissions. If we continue forward on our current path, catastrophe is not just a possible outcome, it is the most probable outcome. And an intelligent risk management approach would involve taking steps to prevent a catastrophic scenario if it were a mere possibility, let alone the most probable outcome. This is especially true since the most important component of the solution - carbon pricing - can be implemented at a relatively low cost, and a far lower cost than trying to adapt to the climate change consequences we have discussed here (Figure 4).

#### Global warming collapses biodiversity and destroys ecosystem resiliency – makes extinction inevitable

Potsdam Institute, 2012 (Potsdam Institute for Climate Impact Research and Climate Analytics, “Turn Down the Heat: Why a 4°C Warmer World Must be Avoided”, A report for the World Bank, November, http://climatechange.worldbank.org/sites/default/files/Turn\_Down\_the\_heat\_Why\_a\_4\_degree\_centrigrade\_warmer\_world\_must\_be\_avoided.pdf)

Ecosystems and their species provide a range of important goods and services for human society. These include water, food, cultural and other values. In the AR4 an assessment of climate change effects on ecosystems and their services found the following: • If greenhouse gas emissions and other stresses continue at or above current rates, the resilience of many ecosystems is likely to be exceeded by an unprecedented combination of change in climate, associated disturbances (for example, flooding, drought, wildfire, insects, and ocean acidification) and other stressors (global change drivers) including land use change, pollution and over-exploitation of resources. • Approximately 20 to 30 percent of plant and animal species assessed so far are likely to be at increased risk of extinction, if increases in global average temperature exceed of 2–3° above preindustrial levels. • For increases in global average temperature exceeding 2 to 3° above preindustrial levels and in concomitant atmospheric CO2 concentrations, major changes are projected in ecosystem structure and function, species’ ecological interactions and shifts in species’ geographical ranges, with predominantly negative consequences for biodiversity and ecosystem goods and services, such as water and food supply. It is known that past large-scale losses of global ecosystems and species extinctions have been associated with rapid climate change combined with other ecological stressors. Loss and/or degradation of ecosystems, and rates of extinction because of human pressures over the last century or more, which have intensified in recent decades, have contributed to a very high rate of extinction by geological standards. It is well established that loss or degradation of ecosystem services occurs as a consequence of species extinctions, declining species abundance, or widespread shifts in species and biome distributions (Leadley et al. 2010). Climate change is projected to exacerbate the situation. This section outlines the likely consequences for some key ecosystems and for biodiversity. The literature tends to confirm the conclusions from the AR4 outlined above. Despite the existence of detailed and highly informative case studies, upon which this section will draw, it is also important to recall that there remain many uncertainties (Bellard, Bertelsmeier, Leadley, Thuiller, and Courchamp, 2012). However, threshold behavior is known to occur in biological systems (Barnosky et al. 2012) and most model projections agree on major adverse consequences for biodiversity in a 4°C world (Bellard et al., 2012). With high levels of warming, coalescing human induced stresses on ecosystems have the potential to trigger large-scale ecosystem collapse (Barnosky et al. 2012). Furthermore, while uncertainty remains in the projections, there is a risk not only of major loss of valuable ecosystem services, particularly to the poor and the most vulnerable who depend on them, but also of feedbacks being initiated that would result in ever higher CO2 emissions and thus rates of global warming. Significant effects of climate change are already expected for warming well below 4°C. In a scenario of 2.5°C warming, severe ecosystem change, based on absolute and relative changes in carbon and water fluxes and stores, cannot be ruled out on any continent (Heyder, Schaphoff, Gerten, & Lucht, 2011). If warming is limited to less than 2°C, with constant or slightly declining precipitation, small biome shifts are projected, and then only in temperate and tropical regions. Considerable change is projected for cold and tropical climates already at 3°C of warming. At greater than 4°C of warming, biomes in temperate zones will also be substantially affected. These changes would impact not only the human and animal communities that directly rely on the ecosystems, but would also exact a cost (economic and otherwise) on society as a whole, ranging from extensive loss of biodiversity and diminished land cover, through to loss of ecosystems services such as fisheries and forestry (de Groot et al., 2012; Farley et al., 2012). Ecosystems have been found to be particularly sensitive to geographical patterns of climate change (Gonzalez, Neilson, Lenihan, and Drapek, 2010). Moreover, ecosystems are affected not only by local changes in the mean temperature and precipitation, along with changes in the variability of these quantities and changes by the occurrence of extreme events. These climatic variables are thus decisive factors in determining plant structure and ecosystem composition (Reu et al., 2011). Increasing vulnerability to heat and drought stress will likely lead to increased mortality and species extinction. For example, temperature extremes have already been held responsible for mortality in Australian flying-fox species (Welbergen, Klose, Markus, and Eby 2008), and interactions between phenological changes driven by gradual climate changes and extreme events can lead to reduced fecundity (Campbell et al. 2009; Inouye, 2008). Climate change also has the potential to facilitate the spread and establishment of invasive species (pests and weeds) (Hellmann, Byers, Bierwagen, & Dukes, 2008; Rahel & Olden, 2008) with often detrimental implications for ecosystem services and biodiversity. Human land-use changes are expected to further exacerbate climate change driven ecosystem changes, particularly in the tropics, where rising temperatures and reduced precipitation are expected to have major impacts (Campbell et al., 2009; Lee & Jetz, 2008). Ecosystems will be affected by the increased occurrence of extremes such as forest loss resulting from droughts and wildfire exacerbated by land use and agricultural expansion (Fischlin et al., 2007). Climate change also has the potential to catalyze rapid shifts in ecosystems such as sudden forest loss or regional loss of agricultural productivity resulting from desertification (Barnosky et al., 2012). The predicted increase in extreme climate events would also drive dramatic ecosystem changes (Thibault and Brown 2008; Wernberg, Smale, and Thomsen 2012). One such extreme event that is expected to have immediate impacts on ecosystems is the increased rate of wildfire occurrence. Climate change induced shifts in the fire regime are therefore in turn powerful drivers of biome shifts, potentially resulting in considerable changes in carbon fluxes over large areas (Heyder et al., 2011; Lavorel et al., 2006) It is anticipated that global warming will lead to global biome shifts (Barnosky et al. 2012). Based on 20th century observations and 21st century projections, poleward latitudinal biome shifts of up to 400 km are possible in a 4° C world (Gonzalez et al., 2010). In the case of mountaintop ecosystems, for example, such a shift is not necessarily possible, putting them at particular risk of extinction (La Sorte and Jetz, 2010). Species that dwell at the upper edge of continents or on islands would face a similar impediment to adaptation, since migration into adjacent ecosystems is not possible (Campbell, et al. 2009; Hof, Levinsky, Araújo, and Rahbek 2011). The consequences of such geographical shifts, driven by climatic changes as well as rising CO2 concentrations, would be found in both reduced species richness and species turnover (for example, Phillips et al., 2008; White and Beissinger 2008). A study by (Midgley and Thuiller, 2011) found that, of 5,197 African plant species studied, 25–42 percent could lose all suitable range by 2085. It should be emphasized that competition for space with human agriculture over the coming century is likely to prevent vegetation expansion in most cases (Zelazowski et al., 2011) Species composition changes can lead to structural changes of the entire ecosystem, such as the increase in lianas in tropical and temperate forests (Phillips et al., 2008), and the encroachment of woody plants in temperate grasslands (Bloor et al., 2008, Ratajczak et al., 2012), putting grass-eating herbivores at risk of extinction because of a lack of food available—this is just one example of the sensitive intricacies of ecosystem responses to external perturbations. There is also an increased risk of extinction for herbivores in regions of drought-induced tree dieback, owing to their inability to digest the newly resident C4 grasses (Morgan et al., 2008). The following provides some examples of ecosystems that have been identified as particularly vulnerable to climate change. The discussion is restricted to ecosystems themselves, rather than the important and often extensive impacts on ecosystems services. Boreal-temperate ecosystems are particularly vulnerable to climate change, although there are large differences in projections, depending on the future climate model and emission pathway studied. Nevertheless there is a clear risk of large-scale forest dieback in the boreal-temperate system because of heat and drought (Heyder et al., 2011). Heat and drought related die-back has already been observed in substantial areas of North American boreal forests (Allen et al., 2010), characteristic of vulnerability to heat and drought stress leading to increased mortality at the trailing edge of boreal forests. The vulnerability of transition zones between boreal and temperate forests, as well as between boreal forests and polar/tundra biomes, is corroborated by studies of changes in plant functional richness with climate change (Reu et al., 2011), as well as analyses using multiple dynamic global vegetation models (Gonzalez et al., 2010). Subtle changes within forest types also pose a great risk to biodiversity as different plant types gain dominance (Scholze et al., 2006). Humid tropical forests also show increasing risk of major climate induced losses. At 4°C warming above pre-industrial levels, the land extent of humid tropical forest, characterized by tree species diversity and biomass density, is expected to contract to approximately 25 percent of its original size [see Figure 3 in (Zelazowski et al., 2011)], while at 2°C warming, more than 75 percent of the original land can likely be preserved. For these ecosystems, water availability is the dominant determinant of climate suitability (Zelazowski et al., 2011). In general, Asia is substantially less at risk of forest loss than the tropical Americas. However, even at 2°C, the forest in the Indochina peninsula will be at risk of die-back. At 4°C, the area of concern grows to include central Sumatra, Sulawesi, India and the Philippines, where up to 30 percent of the total humid tropical forest niche could be threatened by forest retreat (Zelazowski et al., 2011). There has been substantial scientific debate over the risk of a rapid and abrupt change to a much drier savanna or grassland ecosystem under global warming. This risk has been identified as a possible planetary tipping point at around a warming of 3.5–4.5°C, which, if crossed, would result in a major loss of biodiversity, ecosystem services and the loss of a major terrestrial carbon sink, increasing atmospheric CO2 concentrations (Lenton et al., 2008)(Cox, et al., 2004) (Kriegler, Hall, Held, Dawson, and Schellnhuber, 2009). Substantial uncertainty remains around the likelihood, timing and onset of such risk due to a range of factors including uncertainty in precipitation changes, effects of CO2 concentration increase on water use efficiency and the CO2 fertilization effect, land-use feedbacks and interactions with fire frequency and intensity, and effects of higher temperature on tropical tree species and on important ecosystem services such as pollinators. While climate model projections for the Amazon, and in particular precipitation, remain quite uncertain recent analyses using IPCC AR4 generation climate indicates a reduced risk of a major basin wide loss of precipitation compared to some earlier work. If drying occurs then the likelihood of an abrupt shift to a drier, less biodiverse ecosystem would increase. Current projections indicate that fire occurrence in the Amazon could double by 2050, based on the A2 SRES scenario that involves warming of approximately 1.5°C above pre-industrial levels (Silvestrini et al., 2011), and can therefore be expected to be even higher in a 4°C world. Interactions of climate change, land use and agricultural expansion increase the incidence of fire (Aragão et al., 2008), which plays a major role in the (re)structuring of vegetation (Gonzalez et al., 2010; Scholze et al., 2006). A decrease in precipitation over the Amazon forests may therefore result in forest retreat or transition into a low biomass forest (Malhi et al., 2009). Moderating this risk is a possible increase in ecosystem water use efficiency with increasing CO2 concentrations is accounted for, more than 90 percent of the original humid tropical forest niche in Amazonia is likely to be preserved in the 2°C case, compared to just under half in the 4°C warming case (see Figure 5 in Zelazowski et al., 2011) (Cook, Zeng, and Yoon, 2012; Salazar & Nobre, 2010). Recent work has analyzed a number of these factors and their uncertainties and finds that the risk of major loss of forest due to climate is more likely to be regional than Amazon basin-wide, with the eastern and southeastern Amazon being most at risk (Zelazowski et al., 2011). Salazar and Nobre (2010) estimates a transition from tropical forests to seasonal forest or savanna in the eastern Amazon could occur at warming at warming of 2.5–3.5°C when CO2 fertilization is not considered and 4.5–5.5°C when it is considered. It is important to note, as Salazar and Nobre (2010) point out, that the effects of deforestation and increased fire risk interact with the climate change and are likely to accelerate a transition from tropical forests to drier ecosystems. Increased CO2 concentration may also lead to increased plant water efficiency (Ainsworth and Long, 2005), lowering the risk of plant die-back, and resulting in vegetation expansion in many regions, such as the Congo basin, West Africa and Madagascar (Zelazowski et al., 2011), in addition to some dry-land ecosystems (Heyder et al., 2011). The impact of CO2 induced ‘greening’ would, however, negatively affect biodiversity in many ecosystems. In particular encroachment of woody plants into grasslands and savannahs in North American grassland and savanna communities could lead to a decline of up to 45 percent in species richness ((Ratajczak and Nippert, 2012) and loss of specialist savanna plant species in southern Africa (Parr, Gray, and Bond, 2012). Mangroves are an important ecosystem and are particularly vulnerable to the multiple impacts of climate change, such as: rise in sea levels, increases in atmospheric CO2 concentration, air and water temperature, and changes in precipitation patterns. Sea-level rise can cause a loss of mangroves by cutting off the flow of fresh water and nutrients and drowning the roots (Dasgupta, Laplante et al. 2010). By the end of the 21st century, global mangrove cover is projected to experience a significant decline because of heat stress and sea-level rise (Alongi, 2008; Beaumont et al., 2011). In fact, it has been estimated that under the A1B emissions scenario (3.5°C relative to pre-industrial levels) mangroves would need to geographically move on average about 1 km/year to remain in suitable climate zones (Loarie et al., 2009). The most vulnerable mangrove forests are those occupying low-relief islands such as small islands in the Pacific where sea-level rise is a dominant factor. Where rivers are lacking and/ or land is subsiding, vulnerability is also high. With mangrove losses resulting from deforestation presently at 1 to 2 percent per annum (Beaumont et al., 2011), climate change may not be the biggest immediate threat to the future of mangroves. However if conservation efforts are successful in the longer term climate change may become a determining issue (Beaumont et al., 2011). Coral reefs are acutely sensitive to changes in water temperatures, ocean pH and intensity and frequency of tropical cyclones. Mass coral bleaching is caused by ocean warming and ocean acidification, which results from absorption of CO2 (for example, Frieler et al., 2012a). Increased sea-surface temperatures and a reduction of available carbonates are also understood to be driving causes of decreased rates of calcification, a critical reef-building process (De’ath, Lough, and Fabricius, 2009). The effects of climate change on coral reefs are already apparent. The Great Barrier Reef, for example, has been estimated to have lost 50 percent of live coral cover since 1985, which is attributed in part to coral bleaching because of increasing water temperatures (De’ath et al., 2012). Under atmospheric CO2 concentrations that correspond to a warming of 4°C by 2100, reef erosion will likely exceed rates of calcification, leaving coral reefs as “crumbling frameworks with few calcareous corals” (Hoegh-Guldberg et al., 2007). In fact, frequency of bleaching events under global warming in even a 2°C world has been projected to exceed the ability of coral reefs to recover. The extinction of coral reefs would be catastrophic for entire coral reef ecosystems and the people who depend on them for food, income and shoreline. Reefs provide coastal protection against coastal floods and rising sea levels, nursery grounds and habitat for a variety of currently fished species, as well as an invaluable tourism asset. These valuable services to often subsistence-dependent coastal and island societies will most likely be lost well before a 4°C world is reached. The preceding discussion reviewed the implications of a 4°C world for just a few examples of important ecosystems. The section below examines the effects of climate on biological diversity Ecosystems are composed ultimately of the species and interactions between them and their physical environment. Biologically rich ecosystems are usually diverse and it is broadly agreed that there exists a strong link between this biological diversity and ecosystem productivity, stability and functioning (McGrady-Steed, Harris, and Morin, 1997; David Tilman, Wedin, and Knops, 1996)(Hector, 1999; D Tilman et al., 2001). Loss of species within ecosystems will hence have profound negative effects on the functioning and stability of ecosystems and on the ability of ecosystems to provide goods and services to human societies. It is the overall diversity of species that ultimately characterizes the biodiversity and evolutionary legacy of life on Earth. As was noted at the outset of this discussion, species extinction rates are now at very high levels compared to the geological record. Loss of those species presently classified as ‘critically endangered’ would lead to mass extinction on a scale that has happened only five times before in the last 540 million years. The loss of those species classified as ‘endangered’ and ‘vulnerable’ would confirm this loss as the sixth mass extinction episode (Barnosky 2011). Loss of biodiversity will challenge those reliant on ecosystems services. Fisheries (Dale, Tharp, Lannom, and Hodges, 2010), and agronomy (Howden et al., 2007) and forestry industries (Stram & Evans, 2009), among others, will need to match species choices to the changing climate conditions, while devising new strategies to tackle invasive pests (Bellard, Bertelsmeier, Leadley, Thuiller, and Courchamp, 2012). These challenges would have to be met in the face of increasing competition between natural and agricultural ecosystems over water resources. Over the 21st-century climate change is likely to result in some bio-climates disappearing, notably in the mountainous tropics and in the poleward regions of continents, with new, or novel, climates developing in the tropics and subtropics (Williams, Jackson, and Kutzbach, 2007). In this study novel climates are those where 21st century projected climates do not overlap with their 20th century analogues, and disappearing climates are those 20th century climates that do not overlap with 21st century projected climates. The projections of Williams et al (2007) indicate that in a 4°C world (SRES A2), 12–39 percent of the Earth’s land surface may experience a novel climate compared to 20th century analogues. Predictions of species response to novel climates are difficult because researchers have no current analogue to rely upon. However, at least such climates would give rise to disruptions, with many current species associations being broken up or disappearing entirely. Under the same scenario an estimated 10–48 percent of the Earth’s surface including highly biodiverse regions such as the Himalayas, Mesoamerica, eastern and southern Africa, the Philippines and the region around Indonesia known as Wallacaea would lose their climate space. With limitations on how fast species can disperse, or move, this indicates that many species may find themselves without a suitable climate space and thus face a high risk of extinction. Globally, as in other studies, there is a strong association apparent in these projections between regions where the climate disappears and biodiversity hotspots. Limiting warming to lower levels in this study showed substantially reduced effects, with the magnitude of novel and disappearing climates scaling linearly with global mean warming. More recent work by Beaumont and colleagues using a different approach confirms the scale of this risk (Beaumont et al., 2011, Figure 36). Analysis of the exposure of 185 eco-regions of exceptional biodiversity (a subset of the so-called Global 200) to extreme monthly temperature and precipitation conditions in the 21st century compared to 1961–1990 conditions shows that within 60 years almost all of the regions that are already exposed to substantial environmental and social pressure, will experience extreme temperature conditions based on the A2 emission scenario (4.1°C global mean temperature rise by 2100) (Beaumont et al., 2011). Tropical and sub-tropical eco-regions in Africa and South America are particularly vulnerable. Vulnerability to such extremes is particularly acute for high latitude and small island biota, which are very limited in their ability to respond to range shifts, and to those biota, such as flooded grassland, mangroves and desert biomes, that would require large geographical displacements to find comparable climates in a warmer world. The overall sense of recent literature confirms the findings of the AR4 summarized at the beginning of the section, with a number of risks such as those to coral reefs occurring at significantly lower temperatures than estimated in that report. Although non-climate related human pressures are likely to remain a major and defining driver of loss of ecosystems and biodiversity in the coming decades, it is also clear that as warming rises so will the predominance of climate change as a determinant of ecosystem and biodiversity survival. While the factors of human stresses on ecosystems are manifold, in a 4°C world, climate change is likely to become a determining driver of ecosystem shifts and large-scale biodiversity loss (Bellard et al., 2012; New et al., 2011). Recent research suggests that large-scale loss of biodiversity is likely to occur in a 4°C world, with climate change and high CO2 concentration driving a transition of the Earth´s ecosystems into a state unknown in human experience. Such damages to ecosystems would be expected to dramatically reduce the provision of ecosystem services on which society depends (e.g., hydrology—quantity flow rates, quality; fisheries (corals), protection of coastline (loss of mangroves). Barnosky has described the present situation facing the biodiversity of the planet as “the perfect storm” with multiple high intensity ecological stresses because of habitat modification and degradation, pollution and other factors, unusually rapid climate change and unusually high and elevated atmospheric CO2 concentrations. In the past, as noted above, this combination of circumstances has led to major, mass extinctions with planetary consequences. Thus, there is a growing risk that climate change, combined with other human activities, will cause the irreversible transition of the Earth´s ecosystems into a state unknown in human experience (Barnosky et al., 2012).

#### These are not normal debate impacts with loose internal chains and low probabilities. Global Warming has effects across countries, classes and populations. The effects of CO2 will be felt disproportionately by minority bodies.

Mandell 2008 [Bekah, A.B., Vassar College; J.D., Boston College Law School; Director of the Champlain Valley Office of Economic Opportunity Fair Housing Project, “Racial Reification and Global Warming: A Truly Inconvenient Truth,” Boston College Third World Law Journal Volume 28 | Issue 2 Article 3, 4-1-2008, <http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1046&context=twlj> ]

We are facing a global climate crisis. The release of the 2007 U.N. ¶ Intergovernmental Panel on Climate Change Report eliminates any ¶ legitimate doubt that human activities have caused carbon dioxide ¶ (CO2) to accumulate in the earth’s atmosphere, dangerously increasing ¶ the earth’s average temperature.1 Already, increasing atmospheric temperatures are having disastrous effects on the earth’s climate.2 Traditional ways of life for indigenous peoples of Alaska face extinction as polar ice caps and permafrost continue to melt, unfreezing seas and ¶ unleashing storm surges that engulf villages and endanger lives.3¶ The rapid changes in northern coastal regions foreshadow the ¶ danger more southern latitudes are just beginning to encounter.4 The ¶ climate crisis also promises to bring more severe weather events to ¶ more heavily populated regions of the world, causing famine and disease in warmer areas.5 The concentration of CO2 in the atmosphere ¶ derived from anthropogenic sources has already brought more severe ¶ weather to much of the earth’s most populated areas, illustrated most ¶ famously by the Hurricane Katrina disaster.6¶ However, despite decades of irrefutable evidence about the credibility of the global climate crisis and its anthropogenic causes, climate ¶ change is not a priority for most Americans7. The American public successfully has ignored the increasing ~~visibility~~ of the effects of climate ¶ change for years, developing an attitude of willful ignorance despite the ¶ immediacy of the problem.8 A Gallup poll conducted in 2004 found ¶ that the percentage of Americans who worried a “great deal” or a “fair ¶ amount” about the “greenhouse effect” or “global warming” had decreased from the previous year, with only fifty-one percent of respondents noting that they were concerned about the climate crisis.9 The ¶ other half of those surveyed reported that they worried “only a little” or ¶ “not at all” about global warming or the greenhouse effect.10 This public attitude towards global warming legitimates inaction from the gov- ernment and the private sector, as businesses and even national environmental non-profits have generally failed to make it an issue.11¶

### Plan – wake

#### The United States federal government should increase statutory restrictions on the War Powers authority of the President by requiring congressional approval before entering armed forces into hostilities to prevent proliferation.

### Contention Two: Solvency

#### Obama’s counter-prolif posture is based on the Bush Doctrine interp of war powers authority to preempt

Mathew Waxman, September 11, 2013. “The Most Puzzling Line of the President’s Speech,” http://www.lawfareblog.com/2013/09/the-most-puzzling-line-of-the-presidents-speech/

My first question is to what he’s referring here, or to which part of the past decade. President Bush undoubtedly held very broad views of war powers, but the two major wars embarked up during his presidency, in Afghanistan and Iraq, were clearly congressionally authorized, and Congress has played a significant role in pushing their wind-down. The 2011 Libya intervention, by contrast, was not congressionally authorized, and the Obama administration adopted the view that the War Powers Resolution did not apply to the operations there (which, unlike the contemplated Syria operations, aimed to help bring down a regime). The Obama administration has also resisted the idea that Congress should re-examine the 2001 Authorization for Use of Military Force, which has been interpreted to apply in geographically broad ways that may or may not have been intended by Congress at the time it was adopted. My second question is why, if he believes it’s problematic that more and more war-making power has been put in the hands of the President to the exclusion of Congress, President Obama also adopts the position that he possesses unilateral constitutional authority to act in this case. We haven’t yet seen the underlying legal opinion and analysis, but Jack has pointed out here that in asserting the authority to act independently the Obama administration may be extending, not pulling back on, previous OLC reasoning about presidential power to use force. My third question is about effectiveness. I agree that as a general matter “America acts more effectively abroad when we stand together,” but which is better for the strategic goal Obama lays out here of deterring future chemical weapon use through limited strikes: a more congressionally constrained presidential power or a more flexible one? A President with broad unilateral authority, or a system of strong, formal constitutional checks? I’ve been thinking and writing recently about the relationship between constitutional allocation of war powers and strategies of deterrence or coercive diplomacy, and I believe that even without formally voting to authorize force or not, Congress plays an important role in politically constraining the President and in signaling abroad – to adversaries and allies alike – about our policy preferences and resolve. Part of what worries me about the President’s current approach is that even if the President can win a congressional vote to strike Syria in this instance, the debate so far has shown weak congressional commitment to a global chemical-weapons policing policy – which is what the President claims is important to U.S. security interests (“As the ban against these weapons erodes, other tyrants will have no reason to think twice about acquiring poison gas, and using them”).

#### Statutory restrictions control the perception of force posture – Congressional complicity with Bush doctrine authority implies “green-light” to preempt

Bacevich, 2007 (Andrew, professor of history and international relations at Boston University, “Rescinding the Bush Doctrine”, Boston News, March 1, http://www.boston.com/news/globe/editorial\_opinion/oped/articles/2007/03/01/rescinding\_the\_bush\_doctrine/)

RATHER THAN vainly sniping at President Bush over his management of the Iraq war, the Democratic-controlled Congress ought to focus on averting any recurrence of this misadventure. Decrying the so-called "surge" or curbing the president's authority to conduct ongoing operations will contribute little to that end. Legislative action to foreswear preventive war might contribute quite a lot. Long viewed as immoral, illicit, and imprudent, preventive war -- attacking to keep an adversary from someday posing a danger -- became the centerpiece of US national security strategy in the aftermath of 9/11. President Bush unveiled this new strategy in a speech at West Point in June 2002. "If we wait for threats to fully materialize," he said, "we will have waited too long." The new imperative was to strike before threats could form. Bush declared it the policy of the United States to "impose preemptive, unilateral military force when and where it chooses." Although the Constitution endows the legislative branch with the sole authority to declare war, the president did not consult Congress before announcing his new policy. He promulgated the Bush Doctrine by fiat. Then he acted on it. In 2003, Saddam Hussein posed no immediate threat to the United States; arguing that he might one day do so, the administration depicted the invasion of Iraq as an act of anticipatory self-defense. To their everlasting shame, a majority of members in both the House and the Senate went along, passing a resolution that "authorized" the president to do what he was clearly intent on doing anyway. Implicitly, the Bush Doctrine received congressional endorsement. Events since have affirmed the wisdom of seeing preventive war as immoral, illicit, and imprudent. The Bush administration expected a quick, economical, and decisive victory in Iraq. Advertising the war as an effort to topple a brutal dictator and liberate an oppressed people, it no doubt counted on battlefield success to endow the enterprise with a certain ex post facto legitimacy. Elated Iraqis showering American soldiers with flowers and candies would silence critics who condemned the war as morally unjustified and patently illegal. None of these expectations has come to pass. In its trial run, the Bush Doctrine has been found wanting. Today, Iraq teeters on the brink of disintegration. The war's costs, already staggering, continue to mount. Violence triggered by the US invasion has killed thousands of Iraqi civilians. We cannot fully absolve ourselves of responsibility for those deaths. Our folly has alienated friends and emboldened enemies. Rather than nipping in the bud an ostensibly emerging threat, the Iraq war has diverted attention from existing dangers (such as Al Qaeda) while encouraging potential adversaries (like Iran) to see us as weak. The remedy to this catastrophic failure lies not in having another go -- a preventive attack against Iran, for example -- but in acknowledging that the Bush Doctrine is inherently pernicious. Our reckless flirtation with preventive war qualifies as not only wrong, but also stupid. Indeed, the Bush Doctrine poses a greater danger to the United States than do the perils it supposedly guards against. We urgently need to abrogate that doctrine in favor of principles that reflect our true interests and our professed moral values. Here lies an opportunity for Congress to make a difference. The fifth anniversary of President Bush's West Point speech approaches. Prior to that date, Democratic leaders should offer a binding resolution that makes the following three points: First, the United States categorically renounces preventive war. Second, the United States will henceforth consider armed force to be an instrument of last resort. Third, except in response to a direct attack on the United States, any future use of force will require prior Congressional authorization, as required by the Constitution. The legislation should state plainly our determination to defend ourselves and our allies. But it should indicate no less plainly that the United States no longer claims the prerogative of using "preemptive, unilateral military force when and where it chooses." Declaring the Bush Doctrine defunct will not solve the problems posed by Iraq, but it will reduce the likelihood that we will see more Iraqs in our future. By taking such action, Congress will restore its relevance, its badly tarnished honor, and its standing in the eyes of the American people.

#### Broad development of nuclear energy is slow now – preempting prolif cements the “nuclear suppliers cartel,” killing technology trade and civilian growth

Mueller, 2008 (John, Dept of Political Science at Ohio State University, “The Costs and Consequences of Efforts to Prevent Proliferation”, July 16, http://politicalscience.osu.edu/faculty/jmueller//apsa08.pdf)

The nonproliferation focus has also exacerbated the nuclear waste problem in the United States. In the late 1970s, the Carter administration banned the reprocessing of nuclear fuel, something that radically reduces the amount of nuclear waste, under the highly questionable assumption that this policy would reduce the danger of nuclear proliferation. Nonproliferation efforts worldwide also hamper worldwide economic development by increasing the effective costs of developing nuclear energy--sometimes even making them prohibitive for some countries. As countries grow, they require ever increasing amounts of power. Any measure that limits their ability to acquire this vital commodity--or increases its price--effectively slows economic growth and essentially kills people by reducing the gains in life expectancy commonly afforded by economic development. The Non-Proliferation Treaty specifically guarantees to signing nonnuclear countries "the fullest possible exchange of technology" for the development of peaceful nuclear power. However, as Richard Betts points out, this rationale has been undermined by the development of a "nuclear suppliers cartel" which has worked to "cut off trade in technology for reprocessing plutonium or enriching uranium," thereby reducing the NPT to "a simple demand to the nuclear weapons have-nots to remain so."49 More broadly the nonproliferation quest has from time to time boosted international oil prices to the detriment of almost all the countries in the world except for the potential proliferator. Because nuclear power does not emit greenhouse gases, it is an obvious potential candidate for helping with the problem of global warming, an issue many people hold to be of the highest concern for the future of the planet.

#### Aff signal encourages suppliers – dual-use tech raises security flags – US posture is the number one factor in willingness to assist developing nuclear powers

Kate Davidson, UNE Business School Faculty of the Professions, University of New England, 2012. “Contemporary Perspectives on Nuclear Proliferation,” http://www.une.edu.au/\_\_data/assets/pdf\_file/0008/24110/econwp12-2.pdf

The role of the United States in matters of proliferation cannot be emphasised enough. In the Cold War period, the foreign policies of both the US and the Soviet Union were by and large premised upon nuclear matters and necessarily shaped the nuclear field we are faced with today. Post Cold War, US policy has dominated international interactions. The US does contribute enormously to the development of norms; however its own influence extends beyond and almost independently of these norms. In typical “do as I say, not as I do” style, the US exerts huge pressures on states to follow the path of non-proliferation despite their own attachment to nuclear weapons. Levite (2002/03, p76) acknowledges the “glaring omission” in the literature of a “systematic assessment of the vast array of non-proliferation instruments and assets employed by the United States across the cases of nuclear restraint and reversal”, mounting a convincing argument36 based on the claim that “an understanding with the United States is, in fact, a hallmark of many cases of nuclear slowdown or reversal” (p82). She contends that the US is least influential in effecting the nature of domestic regimes which shape nuclear ambitions, concluding that “success is within reach only to the extent that foreign influence and domestic conditions converge, and the foreign effort is closely tuned (in terms of both agenda and timing) to the domestic context” (p87). While the mechanisms by which the US asserts its influence are many and varied37, the hegemon’s role in non-proliferation is deemed to be fundamental.¶ Following on from this, since the US has been so willing to “purchase” non- proliferation through various means perhaps this leads states to making small developments towards the nuclear end which they can then “sell” in order to enhance their economic or diplomatic standing. Japan and North Korea have been implicated in such actions, and it is certainly a notion worth some consideration. It is also possible that Israel’s unwillingness to admit its own nuclear status is in part that doing so may compromise its foreign aid flows, particularly from the US.¶ The second and related issue of vital significance is the role of sanctions, both positive and negative, in non-proliferation measures. While such actions are inextricably linked with US policy and superpower, the theoretical grounding is markedly different. Quite fortunately for the purpose of this discussion, the very recent publishing of the book ‘Sanctions, Statecraft, and Nuclear Proliferation’ edited by Solingen (2012) addresses this very subject. While the authors focus largely on specific causal mechanisms, domestic distributional costs and benefits remain at the forefront and provide insight as to how sanctions and inducements, either targeted or comprehensive, can actually have unintended consequences, particularly given varying domestic political economy models and regime types.¶ As noted by Stein (2012, p30) although “sanctions are as old as antiquity”, they are more prevalent now than ever, but “ironically, sanctions can weaken a state absolutely¶ but also strengthen it relatively (to its society and domestic opposition)” (p55). That is, sanctions may actually support the regime which is driving a nuclear program and thereby strengthen its support – a counterproductive action by any standards. Similarly, Kreps and Pasha argue that military threats may make “good politics” domestically (p175), but empirically support the hypothesis that “military threats reinforce the coalitions that are hostile to international economic integration and cooperation with international regimes more generally” (p208) – the very regimes which Solingen argues are most likely to nuclearise.¶ Tying in with the initial point of discussion in this section, Nincic (2012) rethinks the US counter proliferation policy with regard to inducements, intuitively noting that “few measures could be fully effective when not initiated, or at least supported, by the world’s sole superpower” (p127). Observing the “abysmal failure and frequently counterproductive character of threats and punishment” (p153), Nincic pushes the role of positive engagement in non-proliferation measures. In a less US-centric rationale, Drezner (2012) claims “that more comprehensive economic sanctions – or more wide ranging inducements – will often be more likely to lead to the desired policy changes” than ‘smart sanctions’ which are specifically targeted to reduce externalities (p155).¶ The consistent failure of sanctions to procure desired outcomes is a theme throughout the various chapters. Solingen concludes by outlining three factors which burden the probability that sanctions would have the desired effects in the nuclear realm (2012, p347):¶ 1. Inward looking autocracies, being the most frequent targets of these sanctions, are also the least vulnerable to them.¶ 2. Selection bias results as “sanctions are expected to surface only when targets believe that concessions would risk regime survival more than defiance”. That is, targets receptive to inducements may pre-empt sanctions, leaving analysis of sanctions largely on inward-looking autocracies which “appear to be endogenous to why sanctions emerge as tools of statecraft to begin with”.¶ 3. Inward looking autocracies may price nuclear weapons markedly highly, justified as public goods, making them more resistant to comply with non-proliferation demands.¶ To illustrate the common use of these tools, Figure 6 shows the number of sanctions and inducements directed toward the four main targets of the period 1990 to 2009: North Korea, Libya, Iraq and Iran. From this the relative use of sanctions versus inducements for each target can be recognised, as can the dominance of the US in the utilisation of these tools. Other senders depicted in the legend of the Figure are non- US unilateral (Uni), United Nations (UN), and non-UN multilateral (Multi). It is also interesting to note that 78% of sanctions in the past three decades were imposed on non-democratic target states38, which gives rise to a possibility that perhaps discriminate treatment of non-democratic regimes by more powerful nations may provide incentive for nuclear weapon acquisition by the weaker state in a struggle for power. Or in other words, economic mistreatment gives rise to a perception of threatened security, which under the assumption of realism will provide motivation for nuclear weapon acquisition.¶ With Iran’s nuclear ambitions being so enthusiastically repressed at present, a few brief points are worth mentioning – the most obvious being that the huge numbers of sanctions have not worked. Stein notes the need to create an “international sanctioning cartel”39 can often “multilateralize an initial bilateral conflict” (p41). Unilateral sanctions are often ineffective or difficult to implement on their own and thus allies in sanctioning will often be sought. Drezner (2012, p167) points out that Iran “has been under some form of embargo for its entire existence, and the regime has grown comfortable with them”. Nader (2012) examines Iran in greater depth, finding it to be unclear whether sanctions have impacted Iran’s willingness to pursue its nuclear program but also suggesting the nation may actually thrive on a sense of political and economic isolation stemming from its ideology (p214). He concludes: “The regime’s survival is increasingly contingent on a favourable outcome regarding the nuclear program, whether it leads to a virtual or actual nuclear weapons capability. A sanctions regime contributing to Iran’s economic decline cannot alter this reality.” (p231)¶ A third point with regard to external incentives is, again, tied in tightly with the other two but worthy of mention: institutional organisations. A number of institutional non- proliferation measures have been already discussed: these include the IAEA, the UN, regional NWFZs and various other multilateral treaties. Through encouraging membership to these institutions and also utilising mechanisms under these structures, external pressure can be applied to nations in order to discourage them from developing nuclear weapons programs. The role of the US, and the use of sanctions and inducements by various nations, are both major features of any such institution, however, given the complex web of globalised trade and business patterns which have developed across the globe, the interactions of such institutions needs to be considered. ¶ While the subject of external incentives has focussed rather heavily on¶ discouraging proliferation, such circumstances may exist under which external pressures act in favour of nuclearisation. Aggressive marketing by nuclear technology companies may lead a nation down the path of nuclear energy, only to find its “Siamese twin” comes too**.** This now leads into the supply side explanation of ¶ proliferation. ¶ Access to nuclear technology: more able leads to more willing ¶ This theory of nuclear proliferation is a relatively new development in the literature40 ¶ and represents the supply side, positing that a state’s ability to build nuclear weapons ¶ will influence its probability of actually doing so. As nuclear technology has spread ¶ over the globe41¶ ¶ , the technical means of developing nuclear weapons has also spread ¶ through the dual purpose nature of the technology. The technical links between ¶ civilian nuclear facilities and military programs have previously been discussed, as has ¶ the notion of a virtual nuclear state, and it is important to remember that “whether or ¶ not a state wants a nuclear weapons is irrelevant if it is unable to acquire them” ¶ (Kroenig, 2009 p163). However, as many as fifty states could be considered to be ¶ nuclear weapons capable (Hymans, 2010 p13). The puzzle then is to explain the gap ¶ between the number of states which are technically capable of developing nuclear ¶ weapons and the number which actually choose to do so. Supply side theories seem to ¶ have relied heavily on empirical analysis, and as a result some of the quantitative ¶ proliferation literature will now be introduced to this discussion. ¶ Initially, there is a requirement that nuclear capability be defined. The possession of a ¶ nuclear reactor is obviously the first point required for a state to even be considered ¶ nuclear capable, however this is by no means sufficient. Contemporary literature has ¶ built on Meyer’s (1984) landmark book ‘The Dynamics of Nuclear Proliferation’ and ¶ Stoll’s (1996) revision of this data (cited in Sagan, 2011 p228). In defining nuclear ¶ latency, Meyer measured ten technical and economic indicators – previous national ¶ mining activity, indigenous uranium deposits, metallurgists, steel production, ¶ construction work force, chemical engineers, nitric acid production, electrical ¶ production capacity, nuclear engineers, physicists, chemists and explosives and ¶ electronics specialists42¶ ¶ . As neither the quantity or quality of a state’s nuclear ¶ engineers nor its explosives and electronics specialists could be accurately determined ¶ as being sufficient to develop a nuclear weapon, Meyer used two proxy indicators: ¶ whether the state had been operating a research reactor for three reactor years and ¶ whether the state manufactured automobiles, or assembled automobiles and ¶ manufactured radios and television sets. Based on these indicators, Meyer concluded ¶ that 34 states had the latent capability of building nuclear weapons in 1982 (cited in ¶ Sagan, 2011 p229). ¶ Stoll’s (1996) revision of the data set assumed that all states had access to nuclear ¶ materials since they were (purportedly) available on the open market, and thus ¶ “assumed away the crucial technical bottleneck of whether a state has access to ¶ uranium that, once enriched, could be used in a nuclear weapons program” (Sagan, ¶ 2011 p229). Stoll’s updated data set led to the conclusion that 48 states had latent ¶ weapons capability in 1992. ¶ ¶ Real world events brought supply side issues to the forefront of the proliferation ¶ debate and the 9/11 attack on the United States highlighted the potential role of non-¶ state actors in international conflict. Furthermore, the uncovering of the AQ Khan ¶ network of supplying nuclear equipment and knowledge, and the apparent ¶ nuclearisation of North Korea (more on these later) demonstrated that supply chains ¶ of nuclear material and technology were out of control, and the notion of second tier ¶ proliferation became a subject for debate. Braun and Chyba (2004) point to three ¶ challenges to the non-proliferation regime: ¶ ¶ i. Latent proliferation under the Non-proliferation Treaty ¶ ¶ ii. First tier nuclear proliferation, in which technology or material is ¶ stolen from private companies or state nuclear programs assists ¶ non-nuclear weapon states develop illegal programs ¶ ¶ iii. Second tier proliferation in which states in the developing world with ¶ varying technical capabilities trade amongst themselves to bolster ¶ one another’s nuclear and strategic weapons efforts ¶ ¶ They explore the proliferation “ring” formed by strategic alliances and trade occurring ¶ between and among a list of nations, most notably Pakistan, North Korea, Libya, Iran ¶ and Iraq. This inspired a greater focus on the supply of nuclear technology globally ¶ and more pertinently, the need to better understand the relationship between access ¶ to nuclear technology and materials, and weapons proliferation itself. ¶ ¶ Data coding applied to proliferation studies were further developed by Jo and Gartzke ¶ (2007), who considered the determinants of nuclear proliferation in terms of ¶ opportunity and willingness (p168). On the supply-side, they further organised ¶ opportunity into three categories (p169): the set of technologies related to the ¶ manufacture of nuclear weapons, nuclear fissile materials, and economic capacity. ¶ They then devised three variables upon which to base their analysis (Jo and Gartzke, ¶ 2007 p172-3). First, latent nuclear weapons production capability was constructed by ¶ summing resource and production capacities using seven components: uranium ¶ deposits, metallurgists, chemical engineers, and nuclear ¶ engineers/physicists/chemists, electronic/explosive specialists, nitric acid production ¶ capacity, and electricity production capacity. Second, economic capacity was ¶ constructed using data relating to states’ energy consumption and iron/steel ¶ production. Third, diffusion of knowledge of how to build nuclear weapons was ¶ assumed to occur, and quantified using a log transformation of years passed since ¶ 1938. The dependent variables were dichotomous and coded annually: NWEAPON ¶ identified whether states had a nuclear weapon in the given year, and NPROGRAM a ¶ nuclear weapons program. ¶ ¶ In relation to nuclear proliferation opportunity, they found that latent nuclear ¶ production capabilities increased the predicted probability of having a weapons ¶ program, but did not impact the conditional decision to produce weapons. ¶ Furthermore they concluded that barriers to proliferation ease with the diffusion of ¶ time. This data set was a significant step in the quantitative approach to proliferation ¶ studies and is very widely cited, thus warrants discussion here despite doing little to ¶ actually define nuclear latency. Their measure of nuclear latency was a simple scale ¶ from zero to seven reflecting the seven components of the index. Sagan (2011, p229) ¶ is quite critical of Jo and Gartzke’s coding, claiming the failure to treat possession of ¶ fissile materials as necessary for nuclear capability as inadequate. The shortcomings¶ of their coding rules are evidenced by the fact that North Korea and South Africa are ¶ both considered to not have full capability to develop weapons in 200143¶ ¶ (ibid). ¶ More recently, the supply side proliferation literature has explored the relationship between civilian nuclear assistance and nuclear proliferation. Matthew Fuhrmann has contributed enormously to the proliferation literature to this end44. He explored the determinants of dual-use trade (2008), defining dual-use commodities as having two ¶ applications: “they can be used in weapons of mass destruction (WMD) programs but ¶ also have many legitimate civilian applications” (p634). With most governments placing restrictions on the export of such commodities he was able to analyse licensed dual-use exports from the US between 1991 and 2001 (post Cold War era). He concludes his research to be “preliminary support for the assertion that states channel dual-use trade towards destinations where security guarantees exist and away from targets where security threats are present to minimise its potentially negative security externalities” 45¶ ¶ (p648). Following from this, Fuhrmann (2009a) explores whether the diffusion of knowledge makes proliferation more likely and further examines the determinants of civilian nuclear cooperation (2009b). These works tie in with the ¶ research of Matthew Kroenig, another significant contributor on the topic of nuclear ¶ assistance.

#### It’s reverse-causal – supplier perception is key to nuclear expansion – secure financing trumps obstacles

Sharon Squassoni, director and se- nior fellow of the Proliferation Prevention Program at the Center for Strategic and International Studies (CSIS). Prior to joining CSIS, she was a senior asso- ciate in the Nuclear Nonproliferation Program at the Carnegie Endowment for International Peace, December 2010. “Mapping Nuclear Power’s Future Spread, ” NUCLEAR POWER’S GLOBAL EXPANSION: WEIGHING ITS COSTS AND RISKS Henry Sokolski Editor, online

The largest increases in nuclear capacity in the next 20-30 years undoubtedly will occur in Asia, specifically, China, Japan, South Korea, and India. These countries are building nuclear power plants now and anticipate continued high economic growth levels. Other countries could feel the pinch of the current financial crisis more acutely, dampening demand for electricity below anticipated levels. A major expansion of nuclear power across the board, however, is not a foregone conclusion.¶ In addition, the traditional challenges besetting nuclear energy—cost, safety, waste, and proliferation—will likely continue to limit widespread growth. Government policies supporting nuclear energy in the future—as has been the case in the past—would be necessary to make major expansion a reality.¶ For many states, cost is the first and most immediate obstacle to nuclear expansion. But in those states where there is heavy involvement by the government in electricity markets, supporting nuclear energy may be as simple as providing government funding or financing. Solutions to nuclear waste tend to be deferred into the future, but policies by major suppliers to take back spent fuel could provide some incentives for growth. In states seeking nuclear power for the first time, actions to develop what some have termed the “three Ss”—safeguards, safety, and security— could improve their attractiveness to nuclear vendors. In all countries, some limits on, or costs attached to, carbon dioxide emissions could help enhance the attractiveness of nuclear power, but these should also enhance the attractiveness of renewable sources of energy as well.

#### The prolif dilemma underlies all nuclear energy development – relaxing posture is key to safe distribution at a scale large enough to solve warming

Squassoni, 2009 (Sharon, Senior associate at the Carnegie Endowment for International Peace focusing on nuclear nonproliferation and national security, “Nuclear Power: How Much More?” Nuclear Policy Education Center, March 25, http://www.npolicy.org/article.php?aid=176&rid=2)

The amount of nuclear capacity required to make a signification contribution to global climate change mitigation is so large that it would inevitably be widely distributed across the globe. Such a distribution would have particular implications for nuclear proliferation. However, projected distributions of nuclear energy out to 2050 are extremely speculative. The industry itself does not engage in such projections, and countries that set nuclear energy production goals have a history of widely missing long-range targets, such as China and India. The discussion below considers a hypothetical distribution of nuclear energy for 2050, based on the 2003 MIT Study. [12] Scenario III, shown in Figure 7, uses the “High 2050” scenario in Appendix 2 (“Global Electricity Demand and the Nuclear Power Growth Scenario”) of the 2003 MIT study, The Future of Nuclear Power. Although this is not a distribution designed to achieve optimal CO2 reductions, it is expansion at a level significant enough (1500 GWe) to have an effect on CO2 emissions. This would mean a fourfold increase from current reactor capacity. The MIT study used an underlying assumption that the developed countries would continue with a modest annual increase in per capita electricity use and the developing countries would move to the 4000 kWh per person per year benchmark if at all feasible (the 4000 kWh benchmark being the dividing line between developed and advanced countries). Electricity demand was then pegged to estimated population growth. Finally, it was assumed that nuclear energy would retain or increase its current share of electricity generation. The least-off developing countries were assumed in the MIT study not to have the wherewithal for nuclear energy. It should be noted that MIT’s 2050 projection was “an attempt to understand what the distribution of nuclear power deployment would be if robust growth were realized, perhaps driven by a broad commitment to reducing greenhouse gas emissions and a concurrent resolution of the various challenges confronting nuclear power’s acceptance in various countries.” A few countries that the MIT High 2050 case included but are not included here are countries that currently have laws restricting nuclear energy, such as Austria. Implications for Uranium Enrichment A fourfold expansion of nuclear energy would entail significant new production requirements for uranium enrichment as shown in Figure 8 and possibly, reprocessing. The MIT study anticipated that 54 states would have reactor capacities that could possibly justify indigenous uranium enrichment. If a capability of 10 GWe is considered the threshold at which indigenous enrichment becomes cost-effective, more than 15 additional states could find it advantageous to engage in uranium enrichment. Figure 9 depicts what the geographic distribution of enrichment capacity might look like, based on the development of 10 GWe or more of reactor capacity. Of course, some states – such as Australia or Kazakhstan – might opt to enrich uranium regardless of domestic nuclear energy capacity, choosing to add value to their own uranium exports. In addition, states may choose to take the path of the UAE, which has formally renounced domestic enrichment and reprocessing in its domestic law, despite aspiring to reach 10 GWe of capacity. Ultimately, these decisions lie very much in the political realm, and can be reversed. Implications for Proliferation Proliferation experts generally fall into two camps – those that do not consider power reactors a cause for proliferation concern but focus on the sensitive aspects of the nuclear fuel cycle and those that are concerned about the entire fuel cycle. Advocates of nuclear energy point out that most states that have developed nuclear weapons have used dedicated production or research reactors rather than power reactors to produce their fissile material [13]; others point to the potential for a state to use peaceful nuclear power to further a clandestine weapons program, either through technology transfer, hiding clandestine activities within a peaceful nuclear fuel cycle or diverting lightly irradiated fuel to be further enriched. Regardless of one’s views on the proliferation risks of power reactors, the recent surge of enthusiasm for nuclear energy poses several proliferation risks. First, recent enthusiasm is not limited just to power reactors. On the enrichment side, President Bush’s 2004 initiative to limit capabilities to current technology holders failed, not just in strategy but also in tactics. For example, Argentina, Canada, and South Africa have all expressed an interest in keeping their enrichment options open. Brazil, which is commissioning a new centrifuge enrichment plant at Resende, will likely produce more low-enriched uranium than is needed for its own consumption by 2015. By and large, these countries do not produce nuclear energy on at scale large enough to make domestic enrichment capability economic. [14] However, they have keen national interests in maintaining their right to enrich. Faced with allied objections to restricting future options, the Bush Administration folded. This is partly the reason for the impasse at the NSG on further detailed criteria restricting enrichment and reprocessing. A perception of the U.S. approach as discriminatory could open the door to further challenges. Even if piecemeal efforts to limit the number of states with uranium-enrichment or spent fuel reprocessing capabilities succeed, these could ultimately further erode the NPT by extending the existence of haves and have-nots from nuclear weapons into the nuclear fuel cycle. In the short term, efforts to limit expansion could slow some states’ implementation of the safeguards-strengthening measures in the 1997 Model Additional Protocol. In the long term, other decisions to strengthen the NPT could be jeopardized. On the reprocessing end, the United States has recently embraced spent fuel reprocessing at home and abroad. From the Global Nuclear Energy Partnership (GNEP) to nuclear cooperation with India, Bush administration policies supported reprocessing. This is a complete reversal from the policies adopted in the mid-1970s not to encourage the use of plutonium in the civilian fuel cycle. A nuclear renaissance that embraces reprocessing as necessary to reduce spent fuel accumulation could result in more plutonium in transit, providing more potential targets for diversion. A renaissance that includes widespread installation of fast reactors would similarly increase targets for diversion. Although GNEP advocates stress that the kind of spent fuel “conditioning” they favor would not result in the separation of plutonium, there are few assurances thus far that new techniques are any more proliferation-resistant than PUREX. As opponents like to point out, no future fuel conditioning technique in the United States will be more proliferation resistant than storing spent fuel. And while most countries are probably interested in having someone else solve the problem either of spent fuel storage or high-level waste storage, no commercial reprocessing service currently will store high-level waste. Neither the United States, nor Russia, nor France has committed to taking back spent fuel under GNEP. A further question is whether the next generation of reactors will be more or less proliferation-resistant than existing reactors. As of December 2002, the Generation IV Forum had not yet adopted a standard methodology for evaluating proliferation resistance and physical protection for the six systems under consideration. In addition, there have been a few reports that India is considering exporting its Pressurized Heavy Water Reactors. India may not be the only state in a second tier of suppliers that might be interested in exporting reactors, injecting some uncertainty into assessments. Beyond the technical realm, there are very real political questions about widespread diffusion of civilian nuclear power. Would new nuclear states would raise proliferation concerns by virtue of their geographic location, the existence of terrorist groups on their soil, or other sources of political instability? Would expanded nuclear infrastructure in Egypt, Jordan, Indonesia, Malaysia, Morocco, Nigeria, Vietnam, and the GCC countries lead their neighbors to worry about and respond to the possibility that these countries will develop weapons programs? The expansion of nuclear power would also have practical consequences for the nuclear nonproliferation regime. Additional facilities will place additional safeguards requirements on IAEA inspectors It is unclear how the IAEA will meet these requirements – will these mean more inspection days or will other approaches be used under the “integrated safeguards” program? Although reactors themselves require relatively few inspection days, there will be significant work in helping prepare new nuclear states for nuclear power programs. Already, the IAEA has conducted workshops on infrastructure requirements, including energy needs and planning considerations; nuclear security and safeguards; physical infrastructure; current and future reactor technology; experience in developing nuclear programs; human resource requirements; and public perceptions. States must also develop their states systems of accounting and control. A nuclear expansion, in particular, that results in more states with bulk-handling facilities (enrichment and reprocessing) could place significant strain on the IAEA and the inspections system. Recent experience suggest that current methods of inspection cannot provide timely detection. The fact that the IAEA’s goals for timely detection are clearly longer than material conversion times – that is, the time it would take for a proliferator to produce finished metal shapes – is a big concern. The largest enrichment and reprocessing plants under safeguards now are under EURATOM safeguards; the IAEA’s role in verifying material balances in those plants is limited by the IAEA-EURATOM agreement. The only experience in safeguarding commercial-scale enrichment and reprocessing plants outside of EURATOM in a non-nuclear-weapon state is in Japan, where incidents with significant material losses have raised questions. British commercial reprocessing at the THORP facility also has produced recurring reports of significant materials losses. Perhaps the largest question about a nuclear expansion is whether or not planned technological developments will outpace nonproliferation initiatives, such as fuel supply assurances and multinational fuel-cycle centers, voluntary export guidelines, and further restrictions within the Nuclear Suppliers Group. Criticism of the U.S. GNEP program had been aimed in part at the aggressive timeline for technology demonstration of advanced reprocessing, in contrast to developments more closely tied to nonproliferation objectives, such as supporting more proliferation-resistant reactors with sealed fuel cores that would limit handling of fuel. Already, efforts to manage expansion of the front and back ends of the fuel cycle, whether nuclear fuel assurances, fuel banks, or fuel leasing projects, have abandoned any concepts of formal restraints in favor of incentives. It is too soon to tell how compelling those incentives will be. Finally, although there is disagreement among experts about the proliferation potential of light water reactors, it is clear that the proliferation potential of a country with no nuclear expertise is lower than that of a country with nuclear power and its associated infrastructure. The current encouraging climate for nuclear energy – new cooperation agreements between France and the UAE, Libya and Algeria, and between the United States and Turkey and Jordan, for a few – suggests that regardless of global climate change concerns, or whether or not a significant expansion occurs, some states in the Middle East will develop nuclear energy. It is not clear whether new nuclear reactors in the Middle East would result in new enrichment or reprocessing plants in the Middle East. In part, much depends on the outcome of negotiations with Iran on its enrichment capabilities. If states clearly renounce making nuclear fuel and allow sufficient wide- ranging inspections to verify such pledges, the proliferation implications could be significantly diminished. The hope is that this can be accomplished with the UAE.

#### Nuclear power is necessary to avoid four degrees warming

Comeau 3-12-20’13

[Steve, a database programmer and a member of Local Motion, a Burlington-based group that promotes people-powered transportation, “Comeau: Nuclear power can be tool in avoiding global warming”, http://vtdigger.org/2013/03/12/comeau-nuclear-power-can-be-tool-in-avoiding-global-warming/]

Nuclear power is used to generate electricity, primarily replacing the use of coal for that purpose. In the two years since the Fukushima-Daiichi nuclear facility disaster hundreds of thousands of people worldwide have died from air pollution related to burning coal. According to the World Health Organization, “Urban outdoor air pollution is estimated to cause 1.3 million deaths worldwide per year.” Much of that pollution can be attributed to coal, which accounts for over 40 percent of electricity generated in the world. Burning coal produces massive amounts of waste products including fly ash, sulfur dioxide, mercury, and other heavy metals. Burning coal is bad for the environment and human health. But the biggest issue with burning coal is that it is the largest contributor of CO2 emissions, and therefore a huge contributor to human-caused global warming. To make progress on reducing CO2 emissions related to global warming, coal needs to stay in the ground. Of course there are many political and economic forces that make this close to impossible, but it can only be done if the electricity produced by coal is replaced. The replacements available for that purpose are natural gas, renewable energy, and nuclear power. These all have issues and risks, but are far cleaner and with fewer health consequences than coal. There are many interesting developments that will allow nuclear power to be safer, produce less waste, and even use up the existing nuclear waste. Bill Gates is promoting a company called TerraPower, developing the Traveling Wave Reactor. Environmentalist Stewart Brand, editor of the Whole Earth Catalog, supports nuclear power and the development of integral fast reactors that use uranium more efficiently and can use waste from other reactors. James Hansen, a leading climate scientist and now an activist, also supports third- and fourth-generation nuclear reactors as a way to avert climate change. The projections from a variety of sources depict that CO2 emissions will decline slowly in the United States and likely continue to increase around the world — so pretty much a “business-as-usual” scenario. A report by PricewaterhouseCoopers, “Too late for two degrees,” shows that in 2001 the world energy related emissions grew by 3 percent. China’s emissions grew by 9.4 percent, but emissions in the United States dropped by 1.9 percent, in part due to a mild winter. The most revealing and useful metric is the CO2 measurements taken at the Mauna Loa Observatory in Hawaii since 1959. Based on the trend of the CO2 measurements over the past 20 years, the atmospheric CO2 level — currently at 396 ppm (parts per million) — will reach 450 ppm in 2034. This is approximately the level of CO2 where the average global temperature will increase by 2 degrees (3.6 degrees F) over the pre-industrial level. Based on the latest climate change science, disruptive climate change is occurring now and will continue to occur with increased warming. That part is certain. What is uncertain is the intensity and timing of the transition to dangerous climate change, the threshold which is thought to be 2 degrees C of warming over the pre-industrial level. According to a report published in November 2012 by the World Bank, titled “Turn Down the Heat — Why a 4℃ Warmer World Must be Avoided,” if the current commitments and pledges for reducing emissions are not fully implemented, warming of 4 degrees C (7.2 degrees F) could occur as early as the 2060s. This level of warming will likely produce enormous environmental harm, as well as social and economic disruption. I encourage everyone to download and read this World Bank report. We need a greater understanding and appreciation of the magnitude of the projected harm that dangerous climate change can cause. People will adapt to climate change, but that adaptation will include migration and displacement that is orders of magnitude greater than that caused by the Fukushima-Daiichi nuclear facility disaster. That adaptation will include the abandonment of large cities flooded by a rising sea and migration from regions parched by drought. The warming and CO2 levels will last for centuries and change the world ecosystems. To postpone or avert the greatest harm from climate change it is necessary to accept the risks and potential harm that come with nuclear power, renewable energy, and natural gas, because the alternative is so much worse. The environmentalist positions against the energy technologies that offer effective solutions for replacement of coal are not helpful. As stated in the World Bank report: “The projected 4℃ warming must not be allowed to occur — the heat must be turned down.”

### Contention Three: Case Outweighs

#### Irrational bodies are built into prolif discourse, where “soft paths” for racism solidify into policy and affirm larger “patterns” that sustain deprivation and abandonment of the developing world – plan rearranges the institutional source of binary, exposing both of the lay of the land and thus revolutionary potential

Gusterson, 2004 [Hugh, People of the Bomb, p 25-27]

The dominant discourse that stabilizes this system of nuclear apartheid in Western ideology is a specialized variant within a broader system of colonial and postcolonial discourse that takes as its essentialist premise a profound Otherness separating Third World from Western countries.17 This inscription of Third World (especially Asian and Middle Eastern) na­tions as ineradicably different from our own has, in a different context, been labeled "Orientalism" by Edward Said. Said argues that orientalist discourse constructs the world in terms of a series of binary oppositions that produce the Orient as the mirror image of the West: where "we" are rational and disciplined, "they" are impulsive and emotional; where "we" are modern and flexible, "they" are slaves to ancient passions and routines; where "we" are honest and compassionate, "they" are treacherous and uncultivated. While the blatantly racist orientalism of the high colonial period has softened, more subtle orientalist ideologies endure in contempo­rary politics. They can be found, as Akhil Gupta has argued, in discourses of economic development that represent Third World nations as child na­tions lagging behind Western nations in a uniform cycle of development or, as Catherine Lutz and Jane Collins suggest, in the imagery of popular magazines such as *National Geographic."* I want to suggest here that an­other variant of contemporary orientalist ideology is also to be found in U.S. national security discourse.Following Anthony Giddens in his *Central Problems in Social Theory*, I define ideology as a way of constructing political ideas, institutions, and behavior that (1) makes the political structures and institutions created by dominant social groups, classes, and nations appear to be naturally given and inescapable rather than socially constructed; (2) presents the interests of elites as if they were universally shared; (3) obscures the connections between different social and political antagonisms so as to inhibit massive, binary confrontations (i.e., revolutionary situations); and (4) legitimates domination. The Western discourse on nuclear proliferation is ideological in all four of these senses: (1) it makes the simultaneous ownership of nu­clear weapons by the major powers and the absence of nuclear weapons in Third World countries seem natural and reasonable while problematizing attempts by such countries as India, Pakistan, and Iraq to acquire these weapons; (2) it presents the security needs of the established nuclear pow­ers as if they were everybody's; (3) it effaces the continuity between Third World countries' nuclear deprivation and other systematic patterns of dep­rivation in the underdeveloped world in order to inhibit a massive north- south confrontation; and (4) it legitimates the nuclear monopoly of the recognized nuclear powers.In the following pages I examine four popular arguments against hori­zontal nuclear proliferation and suggest that all four are ideological and ori­entalist. The arguments are that (1) Third World countries are too poor to afford nuclear weapons; (2) deterrence will be unstable in the Third World; (3) Third World regimes lack the technical maturity to be trusted with nu­clear weapons; and (4) Third World regimes lack the political maturity to be trusted with nuclear weapons. Each of these four arguments could as easily be turned backward and used to delegitimate Western nuclear weapons, as I show in the following commentary. Sometimes, in the specialized literature of defense experts, one finds frank discussion of near accidents, weaknesses, and anomalies in deterrence as it has been practiced by the established nuclear powers, but these admissions tend to be quarantined in specialized discursive spaces where the general public has little access to them and where it is hard to connect them to the broader public discourse on nuclear proliferation." In this chapter I retrieve some of these discussions of flaws in deterrence from their quarantined spaces and juxtapose them with the dominant discourse on the dangers of proliferation in order to destabilize its foundational as­sumption of a secure binary distinction between "the West" and "the Third World." It is my argument that, in the production of this binary distinc­tion, possible fears and ambivalences about Western nuclear weapons are purged and recast as intolerable aspects of the Other. This purging and recasting occurs in a discourse characterized by gaps and silences in its representation of our own nuclear weapons and exaggerations in its repre­sentation of those of the Other. Our discourse on proliferation is a piece of ideological machinery that transforms anxiety-provoking ambiguities into secure dichotomies. I should clarify two points here. First, I am not arguing that there are, finally, no differences between countries in terms of their reliability as custo­dians of nuclear weapons. I am arguing that those differences are complex, ambiguous, and crosscutting in ways that are not captured by a simple bi­nary division between, on the one hand, a few countries that have nuclear weapons and insist they are safe and, on the other hand, those countries that do not have nuclear weapons and are told they cannot safely acquire them. It is my goal here to demonstrate the ways in which this simple binary distinction works as an ideological mechanism to impede a more nuanced and realistic assessment of the polymorphous dangers posed by nuclear weapons in all countries and to obscure recognition of the ways in which our own policies in the West have often exacerbated dangers in the Third World that, far from being simply the problems of the Other, are problems produced by a world system dominated by First World institu­tions and states.

#### Challenging the way elites defer to market-based solutions reveals the legal and social premises of hierarchies that sustain white privilege – the aff policy design resuscitates discussion of global warming policy that acknowledges whiteness as part of the problem

Mandell 2008 [Bekah, A.B., Vassar College; J.D., Boston College Law School; Director of the Champlain Valley Office of Economic Opportunity Fair Housing Project, “Racial Reification and Global Warming: A Truly Inconvenient Truth,” Boston College Third World Law Journal Volume 28 | Issue 2 Article 3, 4-1-2008, <http://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=1046&context=twlj> ]

Fear of eroding the hierarchies that define race explains why politicians and other elites have consistently championed ineffectual “market-based approaches” to global warming.36 By focusing public and private energy on relatively insignificant individual behavior changes, the ¶ Bush administration and other privileged elites are able to maintain the ¶ racial hierarchy that consolidates their economic and social power.37¶ Politicians know that “[w]ithout white-over-black the state withers ¶ away.”38 Therefore, they have a profound incentive to maintain the racial hierarchy. Unsurprisingly, “because th[ese elites] accrue social and ¶ economic benefits by maintaining the status quo, they inevitably do.”39¶ This white consensus to maintain the spatial and mobility hierarchies ¶ that reify race is possible because, “[w]hite privilege thrives in highly ¶ racialized societies that espouse racial equality, but in which whites will ¶ not tolerate being either inconvenienced in order to achieve racial ¶ equality . . . or being denied the full benefits of their whiteness . . . .”40¶ With so much white privilege to lose, it becomes clear why even most ¶ passionate environmental advocates are far more willing to call for, and ¶ make, small non-structural changes in their behavior to ameliorate global warming, but are unwilling to embrace significant or meaningful ¶ actions to address the crisis.41¶ Even as global warming is starting to become the subject of increasing media coverage and as more environmental groups call for ¶ action to halt the crisis, most activism is limited to changes that maintain the existing spatial, social, economic and legal framework that defines American society.42 Despite knowing for decades that we have ¶ been living unsustainable lifestyles, and “hav[ing] had some intuition ¶ that it was a binge and the earth couldn’t support it, . . . aside from the ¶ easy things (biodegradable detergent, slightly smaller cars) we didn’t ¶ do much. We didn’t turn our lives around to prevent it.”43¶ Greenhouse emissions reduction challenges have cropped up on ¶ websites across the country, encouraging Americans to change their ¶ light bulbs, inflate their tires to the proper tire pressure to ensure optimal gas mileage, switch to hybrid cars, run dishwashers only when full, ¶ telecommute, or buy more efficient washers and dryers.44 However, ¶ popular emissions challenge web sites are not suggesting that Americans give up their cars, move into smaller homes in more densely populated urban neighborhoods near public transportation, or take other ¶ substantive actions to mitigate the global climate crisis.45 Even Al Gore the most famous voice in the climate change movement, reminds his ¶ fellow Americans that “[l]ittle things matter . . . buy a hybrid if you can, ¶ buy a flex-fuel car if you can. Get a higher mileage car that’s comfortable for your needs.”46 “[M]any yuppie progressive ‘greens’ are the ones who drove their SUVs to environmental rallies and, even worse, ¶ made their homes at the far exurban fringe, requiring massive car dependence in their daily lives,” taking residential segregation and racial ¶ and spacial hierarchies to previously unimagined dimensions.47 This ¶ focus on maintaining one’s privileged lifestyle while making minimal ¶ changes reflects the power of the underlying structural impediments ¶ blocking a comprehensive response to global climate change in the ¶ United States.48¶ It is not just political inaction that prevents a meaningful response. ¶ Millions of Americans do not demand a change in environmental policy because, just as with political elites, it is against the interests of those ¶ enjoying white privilege to take genuine ~~steps~~ to combat climate ¶ change.49 Real climate action would ultimately require relinquishing ¶ the spatial, social, and economic markers that have created and protected whiteness and the privilege it confers.50 Although “we too often ¶ fail to appreciate how important race remains as a system for amassing ¶ and defending wealth and privilege,” the painfully slow reaction of the ¶ American public to the growing dangers of global warming highlights ¶ just how important racial privilege remains and how reluctant its beneficiaries are to give it up.51 Elite reformists make meaningful change ¶ even more remote as they push for behaviors to tweak, but not to ¶ change the existing social, economic, and legal hierarchy in the face of “problems, [like global warming] that arise to threaten the predominance of the traditionalist, capitalist ruling class.”52

#### Our advocacy is one of negative state action, the aff fiats less imposition on a global scale – the state isn’t always good but policy-knowledge and deliberations are indispensable to the solution to climate change

**Hansen ‘9**, heads the [NASA](http://en.wikipedia.org/wiki/NASA) [Goddard Institute for Space Studies](http://en.wikipedia.org/wiki/Goddard_Institute_for_Space_Studies) and [adjunct professor](http://en.wikipedia.org/wiki/Professors_in_the_United_States#Adjunct_professor) in the Department of Earth and Environmental Sciences at [Columbia University](http://en.wikipedia.org/wiki/Columbia_University) (James, December, Storms of My Grandchildren, xi)

I believe the biggest obstacle to solving global warming is the role of money in politics, the undue sway of special interests. **But the public, and young people in particular, will need to get involved in a major way.** “What?” you say. You already did get involved by working your tail off to help elect President Barack Obama. Sure, I (a registered Independent who has voted for both Republicans and Democrats over the years) voted for change too, and I had moist eyes during his Election Day speech in Chicago. That was and always will be a great day for America. But let me tell you: President Obama does not get it. He and his key advisers are subject to heavy pressures, and so far the approach has been, “Let’s compromise.” **So you still have a hell of a lot of work ahead of you**. You do not have any choice. Your attitude must be “Yes, we can.” I am sorry to say that most of what our politicians are doing on the climate front is greenwashing – their proposals sound good, but they are deceiving you and themselves at the same time. Politicians think that if matters look difficult, compromise is a good approach. **Unfortunately, nature and the laws of physics cannot compromise – they** are what they are**.** Policy decisionsMARK on climate change are being deliberated every day by those without full knowledge of the science, and often with intentional misinformation spawned by special interests. This book was written to help rectify the situation. Citizens with a special interest – in their loved ones – need to become familiar with the science, exercise their democratic rights, and pay attention to politicians’ decisions. Otherwise, it seems, short-term special interests will hold sway in capitals around the world – and we are running out of time.

## 2AC

### Apoc

#### Climate apocalypticisism leads to activism that averts catastrophe – studies prove robust correlation

Veldman 12 – doctoral candidate in the Religion and Nature program at the University of Florida (Robin Globus, “Narrating the Environmental Apocalypse”, Volume 17, Number 1, Spring 2012, Ethics & the Environment, online, MCR)

Environmental Apocalypticism and Activism¶ As we saw in the introduction, critics often argue that apocalyptic rhetoric induces feelings of hopelessness or fatalism. While it certainly does for some people, in this section I will present evidence that apocalypticism also often goes hand in hand with activism.¶ Some of the strongest evidence of a connection between environmental apocalypticism and activism comes from a national survey that examined whether Americans perceived climate change to be dangerous. As part of his analysis, Anthony Leiserowitz identified several “interpretive communities,” which had consistent demographic characteristics but varied in their levels of risk perception. The group who perceived the risk to be the greatest, which he labeled “alarmists,” described climate change [End Page 5] using apocalyptic language, such as “Bad…bad…bad…like after nuclear war…no vegetation,” “Heat waves, it’s gonna kill the world,” and “Death of the planet” (2005, 1440). Given such language, this would seem to be a reasonable way to operationalize environmental apocalypticism. If such apocalypticism encouraged fatalism, we would expect alarmists to be less likely to have engaged in environmental behavior compared to groups with moderate or low levels of concern. To the contrary, however, Leiserowitz found that alarmists “were significantly more likely to have taken personal action to reduce greenhouse gas emissions” (ibid.) than respondents who perceived climate change to pose less of a threat. Interestingly, while one might expect such radical views to appeal only to a tiny minority, Leiserowitz found that a respectable eleven percent of Americans fell into this group (ibid).¶ Further supporting Leiserowitz’s findings, in a separate national survey conducted in 2008, Maibach, Roser-Renouf, and Leiserowitz found that a group they labeled “the Alarmed” (again, due to their high levels of concern about climate change) “are the segment most engaged in the issue of global warming. They are very convinced it is happening, human-caused, and a serious and urgent threat. The Alarmed are already making changes in their own lives and support an aggressive national response” (2009, 3, emphasis added). This group was far more likely than people with lower levels of concern over climate change to have engaged in consumer activism (by rewarding companies that support action to reduce global warming with their business, for example) or to have contacted elected officials to express their concern. Additionally, the authors found that “[w]hen asked which reason for action was most important to them personally, the Alarmed were most likely to select preventing the destruction of most life on the planet (31%)” (2009, 31)—a finding suggesting that for many in this group it is specifically the desire to avert catastrophe, rather than some other motivation, that encourages pro-environmental behavior. Taken together, these and other studies (cf. Semenza et al. 2008 and DerKarabetia, Stephenson, and Poggi 1996) provide important evidence that many of those who think environmental problems pose a severe threat practice some form of activism, rather than giving way to fatalistic resignation.

#### The 1AC is a narrativization of climate apocalypse – key to moral deliberation which ensures activism and avoids their apathy arguments since it’s tied to constructive solutions

Veldman 12 – doctoral candidate in the Religion and Nature program at the University of Florida (Robin Globus, “Narrating the Environmental Apocalypse”, Volume 17, Number 1, Spring 2012, Ethics & the Environment, online, MCR)

The Apocalyptic Narrative as a Framework for Moral Deliberation¶ In discussing how apocalypticism functions within the environmental community, it will be helpful to analyze it as a type of narrative. I do so because the domain of narrative includes both the stories that people read and write, as well as those they tell and live by. By using narratives as data, scholars can analyze experiential and textual sources simultaneously (Polkinghorne 1988; Riessman 2000).¶ To analyze environmental apocalypticism as a type of narrative is not to suggest that apocalyptics’ claims about the future are fictional. Rather, it is to highlight that the facts to which environmentalists appeal have been organized with particular goals in mind, goals which have necessarily shaped the selection and presentation of those facts. Compelling environmental writers do not simply list every known fact pertaining to the natural world, but instead select certain findings and place them within a larger interpretive framework. Alone, each fact has little meaning, but when woven into a larger narrative, a message emerges. This process of narrativization is essential if a message is to be persuasive (Killingsworth and Palmer 2000, 197), and has occurred not only in the rapidly expanding genre of environmental nonfiction, but in much scientific writing about the environment as well (Harré, Brockmeier, and Mühlhäusler 1999, 69).¶ What defines narratives as such is their beginning-middle-end structure, their ability to “describe an action that begins, continues over a well-defined period of time, and finally draws to a definite close” (Cronon 1992, 1367). Here I will focus on the last of these elements, the ending, because anything we can learn about how endings function within narratives in general will be applicable to the apocalypse, the most final ending of all.¶ An ending is essential in order for a story to be complete, but there is more to it than this. Endings are also key because they establish a story’s moral, the lesson it is supposed to impart upon the reader. In other words, to know the moral of the story, auditors must know the consequences of the actions depicted therein, so there can be no moral without an ending. To take a simple example, when we hear the story of the shepherd boy who falsely claims that a wolf is attacking his flock of sheep in order to entertain himself at his community’s expense, what makes the lesson clear is that when a wolf does attack his flock, the disenchanted town members refuse to come to his aid. By clearly illustrating how telling lies can have [End Page 9] unpleasant consequences for the perpetrator, the ending reveals the moral that lying is wrong. As Cronon explains, it is “[t]he difference between beginning and end [that] gives us our chance to extract a moral from the rhetorical landscape” (1992, 1370).¶ Endings play a similar role in environmental stories. In Al Gore’s book Earth in the Balance (1992), for example, he devotes over a third of the book’s pages to presenting scientific evidence that disaster is imminent.5 As he sums it up, “Modern industrial civilization…is colliding violently with our planet’s ecological system. The ferocity of its assault on the earth is breathtaking, and the horrific consequences are occurring so quickly as to defy our capacity to recognize them” (1992, 269). He builds this argument so carefully precisely because if the ending does not seem credible, the moral he wants readers to draw from the story will not be compelling. If his readers are not convinced that the ending to this story of ecological misbehavior will be a debacle of colossal proportions, they will not become convinced that they need to dramatically alter their ecological behavior. Thus the vision of future catastrophe that Gore presents provides a crucial vantage point from which the present environmental situation can be understood as the result of a grand moral failure, and Gore’s readers are made aware of their obligations in light of it. Gore himself appreciates the importance of this recognition, arguing that “whether we realize it or not, we are now engaged in an epic battle to right the balance of our earth, and the tide of this battle will turn only when the majority of people in the world become sufficiently aroused by a shared sense of urgent danger to join an all-out effort” (1992, 269, emphasis added). Here, as in so many other stories, the ending must be in place for the moral to become clear.¶ To say that endings are essential in order for stories to have morals is already to hint that stories alter behavior, that they can encourage action in the real world even as they invoke an imaginary one. This much is clear from Earth in the Balance (1992): Gore does not just want people to grasp a moral, to perceive some ethic in the abstract—he wants them change their behavior in the here and now. In constructing a narrative with this goal in mind, he is banking on the ability of powerful stories to motivate social change, to be, as Cronon puts it, “our chief moral compass in the world” (1992, 1375).¶ Mark Johnson’s insightful synthesis of cognitive science and philosophy helps explain further how this process of moral guidance occurs. For [End Page 10] Johnson, narrative is fundamental to our experience of reality, “the most comprehensive means we have for constructing temporal syntheses that bind together and unify our past, present, and future into more or less meaningful patterns” (1993, 174). Narratives are also critical to our ability to reason morally, an activity which Johnson asserts is fundamentally imaginative. In this view, we use stories to imagine ourselves in different scenarios, exploring and evaluating the consequences of different possible actions in order to determine the right one. Moral deliberation is thus¶ …an imaginative exploration of the possibilities for constructive action within a present situation. We have a problem to solve here and now (e.g., ‘What am I to do?’…. ‘How should I treat others?’), and we must try out various possible continuations of our narrative in search of the one that seems best to resolve the indeterminacy of our present situation.¶ (1993, 180)¶ Put another way, what cognitive science has revealed is that from an empirical perspective the process of moral deliberation entails constructing narratives rooted in our unique history and circumstances, rather than applying universal principles (such as Kant’s categorical imperative) to particular cases. That we use narratives to reason morally is not a result of conscious choice but of how human cognition works. That is, insofar as we experience ourselves as temporal beings, a narrative framework is necessary to organize, explain, and ultimately justify the many individual decisions that over time become a life. Formal principles may be useful in unambiguous textbook cases, but in real life “we can almost never decide (reflectively) how to act without considering the ways in which we can continue our narrative construction of our situation” (Johnson 1993, 160). Empirically speaking, “our moral reasoning is situated within our narrative understanding” (Johnson 1993, 180, italics in original).¶ The observation that people use narratives to reason morally may help explain the association between environmental apocalypticism and activism. The function of the apocalyptic narrative may be that it helps adherents determine how to act by providing a storyline from which they can imaginatively sample, enabling them to assess the consequences of their actions. In order to answer the question, “Should I drive or walk to the store?” for example, they can reason, “If I walk, that will reduce my carbon footprint, which will help keep the ice caps from melting, saving humans and other species.” It is their access to this narrative of impending [End Page 11] disaster that makes such reasoning possible, for it provides a simple framework within which people can consider and eventually arrive at some conclusion about their moral obligations.6 More broadly, it can guide entire lives by providing a narrative frame of reference that imbues the individual’s experiences with meaning. For example, it is the context of looming anthropogenic apocalypse which suggests that dedicating one’s life to achieving a healthier relationship with the natural world is a worthwhile endeavor. Absent the apocalypse, choices such as limiting one’s travel to reduce greenhouse gas emissions, becoming vegetarian, working in the environmental sector (often for less compensation), or growing one’s own food could seem to be meaningless sacrifices. Within this context, on the other hand, such choices become essential features of the quest to live a moral life.¶ The apocalyptic narrative is but one of many ways to tell the environmental story, yet it is one that seems particularly well-suited to encouraging pro-environmental behavior. First, the apocalyptic ending discloses certain everyday decisions as moral decisions. Without the narrative context of impending disaster, decisions such as whether to drive or walk to the store would be merely matters of convenience or preference. In the context of potentially disastrous consequences for valued places, people, and organisms, by contrast, such decisions become matters of right and wrong. Second, putting information about the environment into narrative form enables apocalyptics to link complex global environmental processes to their own lives, a perceptual technique Thomashow describes as “bringing the biosphere home” (2002). Developing this skill is essential because without that felt sense of connection to their own lived experience, people are much less likely to become convinced that it is incumbent upon them to act (2002, 2). Finally, the sheer magnitude of the impending disaster increases the feeling of responsibility to make good on one’s moral intuitions. By locating individuals within a drama of ultimate concern, the narrative frames their choices as cosmically important, and this feeling of urgency then helps to convert moral deliberation into action.¶ With this conceptual overview in place, we can now examine more closely what the relationship between apocalypticism and moral reasoning looks like in practice. [End Page 12]

#### Fear of extinction is a legitimate and productive response ---working through it is the only way to create an authentic relationship to the world and death

Macy 2000, Joanna Macy, adjunct professor at the California Institute of Integral Studies, 2000, Environmental Discourse and Practice: A Reader, p. 243

The move to a wider ecological sense of self is in large part a function of the dangers that are threatening to overwhelm us. We are confronted by social breakdown, wars, nuclear proliferation, and the progressive destruction of our biosphere. Polls show that people today are aware that the world, as they know it, may come to an end. This loss of certainty that there will be a future is the pivotal psychological reality of our time. Over the past twelve years my colleagues and I have worked with tens of thousands of people in North America, Europe, Asia, and Australia, helping them confront and explore what they know and feel about what is happening to their world. The purpose of this work, which was first known as “Despair and Empowerment Work,” is to overcome the numbing and powerlessness that result from suppression of painful responses to massively painful realities. As their grief and fear for the world is allowed to be expressed without apology or argument and validated as a wholesome, life-preserving response, people break through their avoidance mechanisms, break through their sense of futility and isolation. Generally what they break through into is a larger sense of identity. It is as if the pressure of their acknowledged awareness of the suffering of our world stretches or collapses the culturally defined boundaries of the self. It becomes clear, for example, that the grief and fear experienced for our world and our common future are categorically different from similar sentiments relating to one’s personal welfare. This pain cannot be equated with dread of one’s own individual demise. Its source lies less in concerns for personal survival than in apprehensions of collective suffering – of what looms for human life and other species and unborn generations to come. Its nature is akin to the original meaning of compassion – “suffering with.” It is the distress we feel on behalf of the larger whole of which we are a part. And, when it is so defined, it serves as a trigger or getaway to a more encompassing sense of identity, inseparable from the web of life in which we are as intricately connected as cells in a larger body. This shift in consciousness is an appropriate, adaptive response. For the crisis that threatens our planet, be it seen in its military, ecological, or social aspects, derives from a dysfunctional and pathogenic notion of the self. It is a mistake about our place in the order of things. It is the delusion that the self is so separate and fragile that we must delineate and defend its boundaries, that it is so small and needy that we must endlessly acquire and endlessly consume, that it is so aloof that we can – as individuals, corporations, nation-states, or as a species – be immune to what we do to other beings.

### 2AC

#### 1. Our interpretation is that the aff gets to weigh the plan against a competitive alternative

#### a. Predictability – there are millions of representations that we can’t predict – the resolution says USFG so we should debate that – predictability is key to fairness

#### b. Education – deliberation about policy options in terms of climate science is critical to motivate the public to get on board with carbon reductions – any alternative makes debate meaningless

#### 2. Perm do the plan and challenge the masculine conceptions of the 1AC and embrace a feminist ethic that challenges the inequalities and violence of the status quo

#### 3. Case is a Disad to the Alt – Global warming makes extinction inevitable and only reducing carbon emissions solves - simple rejection fails

Stewart, 2003 (Keith, PhD on environmental politics in Ontario and currently works for the Toronto Environmental Alliance, “If I Can't Dance: Reformism, Anti-Capitalism and the Canadian Environmental Movement”, Canadian Dimension, Vol. 37, No. 5)

Typically this action initially takes the form of seeking out practical, achievable solutions like the Kyoto Protocol, a ban in your community on the use of pesticides for cosmetic purposes, or saving the local wetland. These "reformist" solutions are not to be despised, for you can't build a movement without victories. Indeed, to dream of a movement that suddenly overthrows the existing order and replaces it with a socially and environmentally superior alternative without having won any victories along the way to inspire the collective imagination and from which to learn practical lessons is ludicrous.¶ When Reform Becomes Transformative¶ The real question is whether the victories of a movement — how the problem is framed, what solutions are proposed, how political pressure is brought to bear and the nature of the alliances and the enemies you make along the way — add up to a broader project of social change. The verdict is still out on whether Kyoto evolves into a techno-fix or becomes part of a broader transformation of the way we live, work and play together. But there is at least some promise in the struggle, so far.

#### Their prolif rhetoric link is our argument – proliferation discourse is structured by whiteness now, that white male bodies are the only bodies that are able to control nuclear power and are the only bodies that aren’t rational

#### The Science of the 1AC is not ignorant to difference but is rigorously tested by scientists across many fields

Shulman 2010

[Seth, Union of Concerned Scientists, “Climate Pioneer”, http://www.ucsusa.org/global\_warming/science\_and\_impacts/science/climate-scientist-warren-washington.html]

Washington stresses that today's climate models have been subjected to so many tests and trials over such a long period that scientists have a high level of confidence in their ability to project how the climate is likely to change when subjected to a range of highly specific scenarios. One such key test scientists have performed, he explains, is the so-called twentieth-century reconstruction, in which researchers start the computer model with data from 1850 and run it to the present, accounting for changes in heat-trapping emissions, volcanic activity, and a host of other variables. Only when the model is accurate enough to reproduce the climate features of the twentieth century will scientists use it to estimate possible future climate change. As Washington explains, "The most important thing is not just that we can reproduce twentieth-century changes—which we can. It is that we can go back and rerun the calculations, changing just one thing at a time. In this way the model becomes useful not only for future projections but also for understanding what factors have the most influence on changes in the climate." What comes out most clearly, Washington says, is that the model simply cannot reproduce today's temperature record when scientists remove the increase in atmospheric carbon dioxide from fossil-fuel burning. "To get the kinds of climatic conditions we have today, you need that increase in carbon dioxide. For anyone doubtful about the effect of human activity on global warming, that finding really is a 'smoking gun.'"

#### Any alternative method to a politics of scientific deliberation ensures that the right can coopt the discussion by latching onto epistemological indicts of science

**Banning ‘9**, Professor of Communication at the University of Colorado (Elisabeth, “When Poststructural Theory and Contemporary Politics Collide-The Vexed Case of Global Warming”, September)

**This essay critically reads a preeminent public policy debate\*that of global warming\*with a two-fold purpose**. **Because global warming skeptics have used strategies and coercions that lie mostly beneath the radar of public life to manipulate public opinion**, I array some of their extensive efforts to control public information. I offer this array of efforts not just to reveal what has occurred behind the scenes, but also to illustrate that the resources, motives, and authority behind these efforts are anything but symmetrical. Rather, **while there are clearly opposing points that can be reified on a talk show as a two-sided debate, there is an imbalance between conclusions based on scientific conventions, protocols, and inter-subjective agreement, and conclusions based on commercial interests, private profit, and corporate gain.** The debate on global warming exemplifies what has been termed a ‘‘disingenuous’’ or ‘‘pseudo-controversy,’’ 5 in which commercial and political entities labor to generate a perception of widespread debate among a scientific community where instead there is a strong agreement. **The goal of this pseudo-controversy is to keep viable the appearance that there is ongoing debate about global warming and to foster uncertainty amongst US publics.** Those attempting to manipulate the results of science research and the rhetorical impact of scientific findings on global warming to achieve these ends are not limited to the Bush Administration, but include various political action groups, the Republican National Committee, energy industry representatives, and conservative punditry positioned in mainstream media news outlets and elsewhere. To capture a sense of the extent of these efforts in this essay, I synthesize the COGR with other research reports, news accounts, policy statements, letters, and speeches on the topic. **Studies of discrete or ‘‘limited’’ texts are common in interpretive work in rhetoric**, such as presidential actions or speeches, canonical works, or official policy, **but the discursive actions occurring behind these textual scenes often contradict and complicate public and official discourses**; indeed, that is their purpose. **Amassing the evidence provides the grounds for an analysis that addresses the epistemological question of how various publics in the US can know what information to believe in their policy deliberations**, an analysis that discerns the connections between phenomena that are often scrutinized discretely. **My investigation is thus unabashedly normative\*it assumes there is a social imperative to which public discourse should be accountable and ethical warrants to which scholarship must answer**\*and it is informed by Fredric Jameson’s critical stance that eschews aporias and antinomies in favor of a focus on the central contradiction of a ‘‘text,’’ however construed. 6 Both sides in the struggle to define global warming offer factual claims that result in positions that are irreconcilable. Both positions cannot be equally true, and this is the central contradiction on which I focus. **My account implicitly relies on McGee’s notion that rhetorical critics need to construct ‘‘discourses from scraps and pieces of evidence’’ that they amass,** 7 **in order to illustrate the links between discursive and non-discursive practices** (the historical events that become the basis for further discourse), **and to account for the stabilization of beliefs about a historical event** (global warming). **My second purpose is to ask what institutional and discursive conditions have enabled this moment, in which the broad ideals of academic freedom and protocols guiding scientific inquiry appear to hold precarious authority in the public arena, and the knowledge produced by this inquiry is increasingly viewed as political**. **A complex of factors contributes to the difficulty for US publics to know what to believe about global warming or who to hold accountable for changes in policy: The quality of information that US publics have received is certainly key**. **Perhaps a more** insidious set of epistemological problems**, however, are the assumptions that the debate over global warming is in fact a debate, that all discourse is equally political, and that there are no standards by which to determine what to accept as contingently true.** **Even the most rudimentary rhetorical analysis of the public discourse on global warming would reveal that the interlocutors in this debate are not equally positioned in terms of resources, motives, and authority, nor do they abide by a normative set of deliberative standards for public discourse**. **There** **are two institutional arenas related to this set of epistemological problems to which I pay particular attention**, **the public arena** with its broad array of government, economic, and political operatives; **and the academic arena**\***specifically\*how theoretical discourses on knowledge and truth generated within this arena have been exported to**, if not expropriated in, **public discourse.** **This co-optation of contemporary critical perspectives on knowledge and truth in public discourse deserves particular scrutiny: When commercial interests deploy contemporary critical perspectives on knowledge and truth to obfuscate and mislead publics, they impede interventions designed to restore conditions for public reason in the political realm. Rhetorical critics and critical communication scholars are uniquely positioned to intervene when scientific conclusions relevant to public policy but disadvantageous to private and elite interests are manipulated**. It is not clear, however, how critical scholars of any stripe intervene in order to press this social imperative into service in the public arena, or what might be the moment and manner of critical intervention in pseudo-controversies such as these. As I will show, those like myself who are indebted to poststructuralist 8 theories of knowledge, truth, and power and who want to intervene in contemporary struggles over policy find ourselves positioned awkwardly\*at best\*by these theories and our own standards of disinterestedness. Our capacities as critical rhetorical and communication scholars are not easily translated into practice and when they are, they face the same claims of partisan politics as all discourse. The question of how these capacities might be pressed into service, however, seems worthy of attention.

#### Prioritize extinction – we can’t come back from that

Nick Bostrom, Professor in the Faculty of Philosophy & Oxford Martin School, Director of the Future of Humanity Institute, and Director of the Programme on the Impacts of Future Technology at the University of Oxford, recipient of the 2009 Eugene R. Gannon Award for the Continued Pursuit of Human Advancement, holds a Ph.D. in Philosophy from the London School of Economics, 2011 (“The Concept of Existential Risk,” Draft of a Paper published on ExistentialRisk.com, Available Online at <http://www.existentialrisk.com/concept.html>, Accessed 07-04-2011)

Even if we use the most conservative of these estimates, which entirely ignores the possibility of space colonization and software minds, we find that the expected loss of an existential catastrophe **is greater** than the value of 1018 human lives. This implies that the expected value of reducing existential risk by a mere one millionth of one percentage point is at least ten times the value of a billion human lives. The more technologically comprehensive estimate of 1054 human-brain-emulation subjective life-years (or 1052 lives of ordinary length) makes the same point even more starkly. Even if we give this allegedly lower bound on the cumulative output potential of a technologically mature civilization a mere 1% chance of being correct, we find that the expected value of reducing existential risk by **a mere one billionth of one billionth of one percentage point** is worth a **hundred billion times** as much as **a billion** human **lives**. One might consequently argue that **even the tiniest reduction** of existential risk has an expected value greater than that of the definite provision of any “ordinary” good, such as the direct benefit of saving 1 billion lives. And, further, that the absolute value of the indirect effect of saving 1 billion lives on the total cumulative amount of existential risk—positive or negative—is almost certainly larger than the positive value of the direct benefit of such an action.

#### Inherent equality of all beings requires utilitiarianism

David Cummiskey, Associate Professor of Philosophy @ Bates College & a Ph.D. from UM, 1996, Kantian Consequentialism, Pg. 145-146

In the next section, I will defend this interpretation of the duty of beneficence. For the sake of argument, however, let us first simply assume that beneficence does not require significant self-sacrifice and see what follows. Although Kant is unclear on this point, we will assume that significant self-sacrifices are supererogatory. Thus, if I must harm one in order to save many, the individual whom I will harm by my action is not morally required to affirm the action. On the other hand, I have a duty to do all that I can for those in need. As a consequence **I am faced with a dilemma: If I act, I harm a person in a way that a rational being need not consent to; if I fail to act, then I do not do my duty to those in need and thereby fail to promote an objective end.** Faced with such a choice, which horn of the dilemma is more consistent with the formula of the end-in-itself? **We must not obscure the issue by characterizing this type of case as the sacrifice of individuals for some abstract “social entity.” It is not a question of some persons having to bear the cost for some elusive “overall social good.”** Instead, **the question is whether some persons must bear the inescapable cost for the sake of other persons.** Robert Nozick, for example, argues that “**to use a person in this way does not sufficiently respect and take account of the fact that he [or she] is a separate person, that** ~~his~~ **is the only life he [or she] has.” But why is this not equally true of all those whom we do not save through our failure to act? By emphasizing solely the one who must bear the cost if we act, we fail to sufficiently respect and take account of the many other separate persons, each with only one life, who will bear the cost of our inaction.** In such a situation, what would a conscientious Kantian agent, an agent motivated by the unconditional value of rational beings, choose? **A morally good agent recognizes that the basis of all particular duties is the principle that “rational nature exists as an end in itself.”** Rational nature as such is the supreme objective end of all conduct. **If one truly believes that all** rational beings **have an equal value then the rational solution to such a dilemma involves maximally promoting the lives and liberties of as many** rational beings **as possible**. **In order to avoid this** conclusion, **the non-consequentialist** Kantian **needs to justify agent-centered constraints.** As we saw in chapter 1, however, even most Kantian **deontologists recognize that agent-centered constraints require a non-value based rationale.** But we have seen that Kant’s normative theory is based on an unconditionally valuable end. How can a concern for the value of rational beings lead to a refusal to sacrifice rational beings even when this would prevent other more extensive losses of rational beings? If the moral law is based on the value of rational beings and their ends, then what is the rationale for prohibiting a moral agent from maximally promoting these two tiers of value? **If I sacrifice some for the sake of others, I do not use them arbitrarily, and I do not deny the unconditional value of rational beings. Persons may have “dignity,** that is, **an unconditional and incomparable worth” that transcends any market value, but persons also have a fundamental equality that dictates that some must sometimes give way for the sake of others. The concept of the end-in-itself does not support the view that we may never force another to bear some cost in order to benefit others**. If on focuses on the equal value of all rational beings, then **equal consideration suggests that one may have to sacrifice some to save many**.

#### **Their techno-fixes arguments are wrong – only the plan solves warming and doesn’t cause violence**

Lewis 94 (Martin, lecturer in international history and interim director of the program in International Relations at Stanford University, Green Delusions: An Environmentalist Critique of Radical Environmentalism, Page 19-20)

As noted above, I believe that only a capitalist economy can generate the resources necessary for the development of a technologically sophisticated, ecologically sustainable global economy. In embracing capitalism I do not thereby advocate the laissez-faire approach of the Republican right. To say that the market plays an essential role is not to say that it should be given full sway. As Robert Kuttner (1991) persuasively argues, the laissez-faire ideology has actually placed shackles on the American economy; it has rather been “social market” economies, like that of Germany, have shown the greatest dynamism in the postwar period. Moreover, if the example of Japan teaches us anything, it should be that economic success stems rather from “combining free markets and individual initiative with social organization” (Thurow 1985:60; emphasis added). At the same time, hard heads must always be matched with soft hearts (see Blinder 1987); we must never lose sight of social goals when working for economic efficiency or ecological stability. But both social equity and environmental protection are, I will argue, more easily realized by working through rather than fighting against the market system and the corporate structure of late twentieth-century capitalism. Economic growth, environmental protection, and social welfare should be seen as positively rather than negatively linked; a society that demands strict pollution controls, for example, will be advantaged in industrial competition at the highest levels of technological sophistication, as will a society that continually upgrades its human resources by providing workers with skilled, well-paying jobs (Porter 1990). It is not coincidental that Japan, seemingly poised to grasp world economic leadership, enjoys a much more equal distribution of wealth than does the United States—and a socialized medical system as well. The Japanese have never taken laissez-faire seriously (C. Johnson 1982), and if the United States further embraces it we will be sorely disadvantaged in the global economic race. ¶ Nor should this work be construed as another manifesto for “technological optimism,” a naïve creed that environmentalists wisely disparage. We cannot blithely assume that unguided growth will solve our economic and environmental problems. But if we fail it will be in devoting too few of our resources to technology, not too many. More funds must be channeled into education, basic science, and long-term research and development if we are to find an environmentally sustainable mode of existence. While it is essential to guide technology into ecologically benign pathways, it is equally imperative that we consistently support the bases of technological progress itself. ¶ A healthy society, I would argue is one characterized by simultaneous increases in general prosperity, social equity, and environmental stability. The present trends are not encouraging; only a few societies are growing more prosperous, the gap between the rich and the poor is increasing both in the United States and in the world at large, and environmental systems throughout the planet are deteriorating. Yet we can devise ways to begin to even out social discrepancies and restore ecological health without sacrificing economic growth. I am convinced that such goals may be realized through “guided capitalism”—a corporate and market system in which the state mandates public goods, in which taxes are set both to level social disparities and to penalized environmental damage, and in which fiscal policies are manipulated to encourage long-term investments in both human and industrial capital (see Rosecrance 1990). But these social and environmental goals will, in the end, be attainable only if we nurture and guide rather than strangle the rather truculent capitalist goose that lays the golden eggs.

#### And it solves your impact – reduces militarism

**Barnett 1**, RESEARCH COUNCIL FELLOW IN THE SCHOOL OF SOCIAL AND ENVIRONMENTAL ENQUIRY AT THE UNIVERSITY OF MELBOURNE, 2001 [JON, THE MEANING OF ENVIRONMENTAL SECURITY: ECOLOGICAL POLITICS AND POLICY IN THE NEW SECURITY ERA, CHAPTER 9, 137-41]

The question of whether it is valid to understand environmental problems as security problems recurs throughout any thoughtful discussion of environmental security. The dilemma should by now be apparent; securitising environmental issues runs the risk that the strategic/realist approach will coopt and colonise the, environmental agenda rather than respond positively to environmental problems (as discussed in Chapter 6). For this reason critics of environmental security, such as Deudney (1991) and-Brock (1991), Suggest that it is dangerous to understand environmental problems as security issues: This book's position on the matter has been emerging in previous chapters. It contends that the problem turns not on the presentation of environmental problems as security issues, but on-the meaning and practice of security in present times. Environmental security, wittingly or not, contests the legitimacy of the realist conception of security by pointing to the contradictions of security as the defence of territory and resistance to change. It seeks to work from within the prevailing conception of security, but to be successful it must do so with a strong sense of purpose and a solid theoretical base. Understanding environmental problems as security problems is thus a form of conceptual speculation. It is one manifestation of the pressure the Green movement has exerted on states since the late 1960s. **This**pressure has pushed state legitimacy nearer to collaps**e,**for if the state cannot control a problem as elemental as environmental degradation, then what is its purpose? This legitimacy problem suggests that environmental degradation cannot further intensify without fundamental change or the collapse of the state. This in turn implies that state-sanctioned environmentally degrading practices such as those undertaken in the name of national security cannot extend their power further if it means further exacerbation of environmental insecurity. While the system may resist environmental security's challenge for change, it must also resist changes for the worse. In terms of the conceptual venture, therefore, appropriation by the security apparatus of the concept of environmental security is unlikely to result in an increase in environmental insecurity (although the concept itself may continue to be corrupted). On the other hand, succeeding in the conceptual venture may mean a positive modification of the theory and practice of national security. It may also mean that national governments will take environmental problems more seriously, reduce defence budgets, and generally implement policies for a morepeaceful and environmentally secure world.

#### Prior questions fail and make politics impossible

Owen 2 [David Owen, Reader of Political Theory at the Univ. of Southampton, Millennium Vol 31 No 3 2002 p. 655-7]

Commenting on the ‘philosophical turn’ in IR, Wæver remarks that ‘[a] frenzy for words like “epistemology” and “ontology” often signals this philosophical turn’, although he goes on to comment that these terms are often used loosely.4 However, loosely deployed or not, it is clear that debates concerning ontology and epistemology play a central role in the contemporary IR theory wars. In one respect, this is unsurprising since it is a characteristic feature of the social sciences that periods of disciplinary disorientation involve recourse to reflection on the philosophical commitments of different theoretical approaches, and there is no doubt that such reflection can play a valuable role in making explicit the commitments that characterise (and help individuate) diverse theoretical positions. Yet, such a philosophical turn is not without its dangers and I will briefly mention three before turning to consider a confusion that has, I will suggest, helped to promote the IR theory wars by motivating this philosophical turn. The first danger with the philosophical turn is that it has an inbuilt tendency to prioritise issues of ontology and epistemology over explanatory and/or interpretive power as if the latter two were merely a simple function of the former. But while the explanatory and/or interpretive power of a theoretical account is not wholly independent of its ontological and/or epistemological commitments (otherwise criticism of these features would not be a criticism that had any value), it is by no means clear that it is, in contrast, wholly dependent on these philosophical commitments. Thus, for example, one need not be sympathetic to rational choice theory to recognise that it can provide powerful accounts of certain kinds of problems, such as the tragedy of the commons in which dilemmas of collective action are foregrounded. It may, of course, be the case that the advocates of rational choice theory cannot give a good account of why this type of theory is powerful in accounting for this class of problems (i.e., how it is that the relevant actors come to exhibit features in these circumstances that approximate the assumptions of rational choice theory) and, if this is the case, it is a philosophical weakness—but this does not undermine the point that, for a certain class of problems, rational choice theory may provide the best account available to us. In other words, while the critical judgement of theoretical accounts in terms of their ontological and/or epistemological sophistication is one kind of critical judgement, it is not the only or even necessarily the most important kind. The second danger run by the philosophical turn is that because prioritisation of ontology and epistemology promotes theory-construction from philosophical first principles, it cultivates a theory-driven rather than problem-driven approach to IR. Paraphrasing Ian Shapiro, the point can be put like this: since it is the case that there is always a plurality of possible true descriptions of a given action, event or phenomenon, the challenge is to decide which is the most apt in terms of getting a perspicuous grip on the action, event or phenomenon in question given the purposes of the inquiry; yet, from this standpoint, ‘theory-driven work is part of a reductionist program’ in that it ‘dictates always opting for the description that calls for the explanation that flows from the preferred model or theory’.5 The justification offered for this strategy rests on the mistaken belief that it is necessary for social science because general explanations are required to characterise the classes of phenomena studied in similar terms. However, as Shapiro points out, this is to misunderstand the enterprise of science since ‘whether there are general explanations for classes of phenomena is a question for social-scientific inquiry, not to be prejudged before conducting that inquiry’.6 Moreover, this strategy easily slips into the promotion of the pursuit of generality over that of empirical validity. The third danger is that the preceding two combine to encourage the formation of a particular image of disciplinary debate in IR—what might be called (only slightly tongue in cheek) ‘the Highlander view’—namely, an image of warring theoretical approaches with each, despite occasional temporary tactical alliances, dedicated to the strategic achievement of sovereignty over the disciplinary field. It encourages this view because the turn to, and prioritisation of, ontology and epistemology stimulates the idea that there can only be one theoretical approach which gets things right, namely, the theoretical approach that gets its ontology and epistemology right. This image feeds back into IR exacerbating the first and second dangers, and so a potentially vicious circle arises.

#### overemphasizing representations fails – it prevents real world change by ignoring how material structures and agency work to create policies

Tuathail, ’96[Gearoid, Department of Georgraphy at Virginia Polytechnic Institute, Political Geography, 15(6-7), p. 664, science direct]

While theoretical debates at academic conferences are important to academics, the discourse and concerns of foreign-policy decision- makers are quite different, so different that they constitute a distinctive problem- solving, theory-averse, policy-making subculture. There is a danger that academics assume that the discourses they engage are more significant in the practice of foreign policy and the exercise of power than they really are. This is not, however, to minimize the obvious importance of academia as a general institutional structure among many that sustain certain epistemic communities in particular states. In general, I do not disagree with Dalby’s fourth point about politics and discourse except to note that his statement-‘Precisely because reality could be represented in particular ways political decisions could be taken, troops and material moved and war fought’-evades the important question of agency that I noted in my review essay. The assumption that it is representations that make action possible is inadequate by itself. Political, military and economic structures, institutions, discursive networks and leadership are all crucial in explaining social action and should be theorized together with representational practices. Both here and earlier, Dalby’s reasoning inclines towards a form of idealism. In response to Dalby’s fifth point (with its three subpoints), it is worth noting, first, that his book is about the CPD, not the Reagan administration. He analyzes certain CPD discourses, root the geographical reasoning practices of the Reagan administration nor its public-policy reasoning on national security. Dalby’s book is narrowly textual; the general contextuality of the Reagan administration is not dealt with. Second, let me simply note that I find that the distinction between critical theorists and post- structuralists is a little too rigidly and heroically drawn by Dalby and others. Third, Dalby’s interpretation of the reconceptualization of national security in Moscow as heavily influenced by dissident peace researchers in Europe is highly idealist, an interpretation that ignores the structural and ideological crises facing the Soviet elite at that time. Gorbachev’s reforms and his new security discourse were also strongly self- interested, an ultimately futile attempt to save the Communist Party and a discredited regime of power from disintegration. The issues raised by Simon Dalby in his comment are important ones for all those interested in the practice of critical geopolitics. While I agree with Dalby that questions of discourse are extremely important ones for political geographers to engage, there is a danger of fetishizing this concern with discourse so that we neglect the institutional and the sociological, the materialist and the cultural, the political and the geographical contexts within which particular discursive strategies become significant. Critical geopolitics, in other words, should not be a prisoner of the sweeping ahistorical cant that sometimes accompanies ‘poststructuralism nor convenient reading strategies like the identity politics narrative; it needs to always be open to the patterned mess that is human history.

#### Intervening actions check escalation

Trachtenberg 2000 (Prof of History, Pennsylvania (Marc, The "Accidental War" Question, http://www.sscnet.ucla.edu/polisci/faculty/trachtenberg/cv/inadv(1).pdf, CMR)

The second point has to do with how much risk there really is in situations of this sort. It should not be assumed too readily that states underestimate the degree to which they lose control of the situation when they engage in a crisis. States can generally **pull back from the brink** if they really want to; prestige will be sacrificed, but often states are willing to pay that price. The history of international politics in the century that just ended is **full of crises** that were liquidated by one side accepting what amounted to defeat, sometimes even humiliating defeat; and in the July Crisis in 1914, the German government chose at the most critical moment to let the war come rather than press for a compromise solution.9 The key thing here is that in 1914 and 1939 political leaders had not totally lost control, but had chosen to accept war rather than back off in a crisis. Their aversion to war was not overwhelming. But when both sides very much want to avoid a full-scale armed conflict, the story is very different. This was the case during the Cold War. People sometimes seem to assume that peace was hanging by a thread during that conflict, and that we were lucky to make our way through it without a thermonuclear holocaust. But I don't think this is true at all: and in general I think it is **very unlikely** that a great war would break out if both sides are determined to avoid it. These arguments about how war could break out almost by accident were frequently made during the Cold War itself--and indeed were made by responsible and experie nced officials. A British document from March 1946, for example, argued that the Soviets did not want war, but the kind of tactics they used with the West might lead to a war that neither side wanted: "although the intention may be defensive, the tactics will be offensive, and the danger always exists that Russian leaders may misjudge how far they can go without provoking war with American or ourselves."10 A year later, a British Foreign Office official warned that the fact that the Soviets had military superiority in Europe might make them careless, and that they might "misjudge what measures can safely be taken without producing a serious crisis." Events might get out of control and a situation might develop that could "lead to disaster."11 What is wrong with this point of view? It assumes that the Soviets would not be cautious, that they would not frame their actions very carefully with an eye to the American reaction, that in deciding how far to go they would not gauge very closely how the Americans reacted to the measures they had taken up to that point. This point of view assumes also that the Soviets would find it very hard to draw back if it became clear that they had overstepped the bounds and had thought the American reaction would not be as vigorous as it in fact was--or indeed that they had not made the mental reservation that they could draw back, in necessary, when they decided to embark on a provocative course of action. Basically the assumption is that the Soviets did not care enough about what a war would entail to take these rather elementary and normal precautions. This point of view also assumes that the American response would be very rigid and "spring-loaded": a slight Soviet infringement, and the Americans immediately take the plunge into general war--as though there are no intermediate measures of a political or military nature that would be taken, no process that would unfold within which the two sides would test each other out before resorting to extreme measures. To my mind, anyone with any sense should know that things would **never** move directly and mechanically from initial provocation to full-scale war, that things would unfold almost inevitably in a more complex way--or, in short, that enough "**cushioning**" exists in the system to keep relatively minor provocations from leading directly to general war.

**No nuke winter – studies**

Seitz 2011 (Russell, Harvard University Center for International Affairs visiting scholar, “Nuclear winter was and is debatable,” Nature, 7-7-11, Vol 475, pg37, accessed 9-27-11, CMR)

Alan Robock's contention that there has been no real scientific debate about the 'nuclear winter' concept is itself debatable (Nature 473, 275–276; 2011). This **potential climate disaster**, popularized in Science in 1983, **rested on** the output of **a one-dimensional model that** was later shown to **overestimate** the smoke a nuclear holocaust might engender. More refined estimates, combined with advanced three-dimensional models (see http://go.nature.com.libproxy.utdallas.edu/kss8te), have dramatically reduced the extent and severity of the projected cooling. Despite this, Carl Sagan, who co-authored the 1983 Science paper, went so far as to posit “the extinction of Homo sapiens” (C. Sagan Foreign Affairs 63, 75–77; 1984). **Some regarded this** apocalyptic **prediction as** **an exercise in mythology**. George **Rathjens of** the Massachusetts Institute of Technology **protested: “Nuclear winter is** **the worst example of the misrepresentation of science** to the public **in my memory**,” (see http://go.nature.com.libproxy.utdallas.edu/yujz84) and **climatologist** Kerry **Emanuel** observed that the subject had **“**become **notorious** for its **lack of scientific integrity”** § Marked 08:38 § (Nature 319, 259; 1986). Robock's single-digit fall in temperature is at odds with the subzero (about −25 °C) continental cooling originally projected for a wide spectrum of nuclear wars. Whereas Sagan predicted darkness at noon from a US–Soviet nuclear conflict, Robock projects global sunlight that is several orders of magnitude brighter for a Pakistan–India conflict — literally the difference between night and day. Since 1983, **the** projected **worst-case** cooling has fallen from a Siberian deep freeze spanning 11,000 degree-days Celsius (a measure of the severity of winters) to **numbers** so unseasonably small as to **call** the very term **'nuclear winter' into question**.