## 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 – only emissions reductions solve

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

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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 destroys global agriculture– resulting in mass starvation

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 overall conclusions of IPCC AR4 concerning food production and agriculture included the following: • Crop productivity is projected to increase slightly at mid- to high latitudes for local mean temperature increases of up to 1 to 3°C depending on the crop, and then decrease beyond that in some regions (medium confidence) {WGII 5.4, SPM}. • At lower latitudes, especially in seasonally dry and tropical regions, crop productivity is projected to decrease for even small local temperature increases (1 to 2°C) which would increase the risk of hunger (medium confidence) {WGII 5.4, SPM}. • Globally, the potential for food production is projected to increase with increases in local average temperature over a range of 1 to 3°C, but above this it is projected to decrease (medium confidence) {WGII 5.4, 5.5, SPM}. These findings clearly indicate a growing risk for low-latitude regions at quite low levels of temperature increase and a growing risk for systemic global problems above a warming of a few degrees Celsius. While a comprehensive review of literature is forthcoming in the IPCC AR5, the snapshot overview of recent scientific literature provided here illustrates that the concerns identified in the AR4 are confirmed by recent literature and in important cases extended. In particular, impacts of extreme heat waves deserve mention here for observed agricultural impacts (see also Chapter 2). This chapter will focus on the latest findings regarding possible limits and risks to large-scale agriculture production because of climate change, summarizing recent studies relevant to this risk assessment, including at high levels of global warming approaching 4°C. In particular, it will deliberately highlight important findings that point to the risks of assuming a forward projection of historical trends. Projections for food and agriculture over the 21st century indicate substantial challenges irrespective of climate change. As early as 2050, the world’s population is expected to reach about 9 billion people (Lutz and Samir 2010) and demand for food is expected to increase accordingly. Based on the observed relationship between per capita GDP and per capita demand for crop calories (human consumption, feed crops, fish production and losses during food production), Tilman et al. (2011) project a global increase in the demand for crops by about 100 percent from 2005 to 2050. Other estimates for the same period project a 70 percent increase of demand (Alexandratos 2009). Several projections suggest that global cereal and livestock production may need to increase by between 60 and 100 percent to 2050, depending on the warming scenario (Thornton et al. 2011). The historical context can on the one hand provide reassurance that despite growing population, food production has been able to increase to keep pace with demand and that despite occasional fluctuations, food prices generally stabilize or decrease in real terms (Godfray, Crute, et al. 2010). Increases in food production have mainly been driven by more efficient use of land, rather than by the extension of arable land, with the former more widespread in rich countries and the latter tending to be practiced in poor countries (Tilman et al. 2011). While grain production has more than doubled, the area of land used for arable agriculture has only increased by approximately 9 percent (Godfray, Beddington, et al. 2010). However, although the expansion of agricultural production has proved possible through technological innovation and improved water-use efficiency, observation and analysis point to a significant level of vulnerability of food production and prices to the consequences of climate change, extreme weather, and underlying social and economic development trends. There are some indications that climate change may reduce arable land in low-latitude regions, with reductions most pronounced in Africa, Latin America, and India (Zhang and Cai 2011). For example, flooding of agricultural land is also expected to severely impact crop yields in the future: 10.7 percent of South Asia´s agricultural land is projected to be exposed to inundation, accompanied by a 10 percent intensification of storm surges, with 1 m sea-level rise (Lange et al. 2010). Given the competition for land that may be used for other human activities (for example, urbanization and biofuel production), which can be expected to increase as climate change places pressure on scarce resources, it is likely that the main increase in production will have to be managed by an intensification of agriculture on the same—or possibly even reduced—amount of land (Godfray, Beddington et al. 2010; Smith et al. 2010). Declines in nutrient availability (for example, phosphorus), as well as the spread in pests and weeds, could further limit the increase of agricultural productivity. Geographical shifts in production patterns resulting from the effects of global warming could further escalate distributional issues in the future. While this will not be taken into consideration here, it illustrates the plethora of factors to take into account when thinking of challenges to promoting food security in a warming world. New results published since 2007 point to a more rapidly escalating risk of crop yield reductions associated with warming than previously predicted (Schlenker and Lobell 2010; Schlenker and Roberts 2009). In the period since 1980, patterns of global crop production have presented significant indications of an adverse effect resulting from climate trends and variability, with maize declining by 3.8 percent and wheat production by 5.5 percent compared to a case without climate trends. A significant portion of increases in crop yields from technology, CO2 fertilization, and other changes may have been offset by climate trends in some countries (Lobell et al. 2011). This indication alone casts some doubt on future projections based on earlier crop models. In relation to the projected effects of climate change three interrelated factors are important: temperature-induced effect, precipitation-induced effect, and the CO2 -fertilization effect. The following discussion will focus only on these biophysical factors. Other factors that can damage crops, for example, the elevated levels of tropospheric ozone (van Groenigen et al. 2012), fall outside the scope of this report and will not be addressed. Largely beyond the scope of this report are the far-reaching and uneven adverse implications for poverty in many regions arising from the macroeconomic consequences of shocks to global agricultural production from climate change. It is necessary to stress here that even where overall food production is not reduced or is even increased with low levels of warming, distributional issues mean that food security will remain a precarious matter or worsen as different regions are impacted differently and food security is further challenged by a multitude of nonclimatic factors.

#### 4 degrees of warming destroys global biodiversity – overwhelms resilience and adaptation – the impact is extinction

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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).

#### Ocean acidification is accelerating – overcomes ocean resiliency – only decreasing emissions solves

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 high emission scenarios would also result in very high carbon dioxide concentrations and ocean acidification, as can be seen in Figure 25 and Figure 26. The increase of carbon dioxide concentration to the present-day value of 390 ppm has caused the pH to drop by 0.1 since preindustrial conditions. This has increased ocean acidity, which because of the logarithmic scale of pH is equivalent to a 30 percent increase in ocean acidity (concentration of hydrogen ions). The scenarios of 4°C warming or more by 2100 correspond to a carbon dioxide concentration of above 800 ppm and lead to a further decrease of pH by another 0.3, equivalent to a 150 percent acidity increase since preindustrial levels. Ongoing ocean acidification is likely to have very severe consequences for coral reefs, various species of marine calcifying organisms, and ocean ecosystems generally (for example, Vézina & Hoegh-Guldberg 2008; Hofmann and Schellnhuber 2009). A recent review shows that the degree and timescale of ocean acidification resulting from anthropogenic CO2 emissions appears to be greater than during any of the ocean acidification events identified so far over the geological past, dating back millions of years and including several mass extinction events (Zeebe 2012). If atmospheric CO2 reaches 450 ppm, coral reef growth around the world is expected to slow down considerably and at 550 ppm reefs are expected to start to dissolve (Cao and Caldeira 2008; Silverman et al. 2009). Reduced growth, coral skeleton weakening, and increased temperature dependence would start to affect coral reefs already below 450 ppm. Thus, a CO2 level of below 350 ppm appears to be required for the long-term survival of coral reefs, if multiple stressors, such as high ocean surface-water temperature events, sea-level rise, and deterioration in water quality, are included (Veron et al. 2009). Based on an estimate of the relationship between atmospheric carbon dioxide concentration and surface ocean acidity (Bernie, Lowe, Tyrrell, and Legge 2010), only very low emission scenarios are able to halt and ultimately reverse ocean acidification (Figure 26). An important caveat on these results is that the approach used here is likely to be valid only for relatively short timescales. If mitigation measures are not implemented soon to reduce carbon dioxide emissions, then ocean acidification can be expected to extend into the deep ocean. The calculations shown refer only to the response of the ocean surface layers, and once ocean acidification has spread more thoroughly, slowing and reversing this will be much more difficult. This would further add significant stress to marine ecosystems already under pressure from human influences, such as overfishing and pollution.

**Extinction**

Kristof 6 (NICHOLAS D. KRISTOF, American journalist, author, op-ed columnist, and a winner of two Pulitzer Prizes, “Scandal Below the Surface”, Oct 31, 2006, http://select.nytimes.com/2006/10/31/opinion/31kristof.html?\_r=1, CMR)

If you think of the earth’s surface as a great beaker, then it’s filled mostly with ocean water. It is slightly alkaline, and that’s what creates a hospitable home for fish, coral reefs and plankton — and indirectly, higher up the food chain, for us. But scientists have discovered that the carbon dioxide (CO2) we’re spewing into the air doesn’t just heat up the atmosphere and lead to rising seas. Much of that carbon is absorbed by the oceans, and there it produces carbonic acid — the same stuff found in soda pop. That makes oceans a bit more acidic, impairing the ability of certain shellfish to produce shells, which, like coral reefs, are made of calcium carbonate. A recent article in Scientific American explained the indignity of being a dissolving mollusk in an acidic ocean: “Drop a piece of chalk (calcium carbonate) into a glass of vinegar (a mild acid) if you need a demonstration of the general worry: the chalk will begin dissolving immediately.” The more acidic waters may spell the end, at least in higher latitudes, of some of the tiniest variations of shellfish — certain plankton and tiny snails called pteropods. This would **disrupt the food chain,** possibly killing off many whales and fish, and rippling up all the way to humans. We stand, so to speak, on the shoulders of plankton. “There have been a couple of very big events in geological history where the carbon cycle changed dramatically,” said Scott Doney, senior scientist at the Woods Hole Oceanographic Institution in Massachusetts. One was an abrupt warming that took place 55 million years ago in conjunction with acidification of the oceans and **mass extinctions**. Most scientists don’t believe we’re headed toward a man-made variant on that episode — not **yet**, at any rate. But many worry that we’re hurtling into unknown dangers. “Whether in 20 years or 100 years, I think marine ecosystems are going to be dramatically different by the end of this century, and that’ll lead to **extinction events**,” Mr. Doney added. “This is the only habitable planet we have,” he said. “The damage we do is going to be felt by **all the generations to come.”** So that should be one of the great political issues for this century — the vandalism we’re committing to our planet because of our refusal to curb greenhouse gases. Yet the subject is barely debated in this campaign. Changes in ocean chemistry are only one among many damaging consequences of carbon emissions. Evidence is also growing about the more familiar dangers: melting glaciers, changing rainfall patterns, rising seas and more powerful hurricanes. Last year, the World Health Organization released a study indicating that climate change results in an extra 150,000 deaths and five million sicknesses each year, by causing the spread of malaria, diarrhea, malnutrition and other ailments. A report prepared for the British government and published yesterday, the Stern Review on the Economics of Climate Change, warned that inaction “could create risks of major disruption to economic and social activity, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century.” If emissions are not curbed, climate change will cut 5 percent to 20 percent of global G.D.P. each year, declared the mammoth report. “In contrast,” it said, “the costs of action — reducing greenhouse gas emissions to avoid the worst impacts of climate change — can be limited to around 1 percent of global G.D.P. each year.” Some analysts put the costs of action higher, but most agree that it makes sense to invest far more in alternative energy sources, both to wean ourselves of oil and to reduce the strain on our planet. We know what is needed: a carbon tax or cap-and-trade system, a post-Kyoto accord on emissions cutbacks, and major research on alternative energy sources. But as The Times’s Andrew Revkin noted yesterday, spending on energy research and development has fallen by more than half, after inflation, since 1979.

### Plan Text

#### 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

#### Presidential authority guarantees counter-proliferation – Obama administration makes it inevitable

CNN, 8/31 (“Text of draft legislation submitted by Obama to Congress”, 2013, CNN Staff, http://www.cnn.com/2013/08/31/us/obama-authorization-request-text/index.html)

(CNN) -- Whereas, on August 21, 2013, the Syrian government carried out a chemical weapons attack in the suburbs of Damascus, Syria, killing more than 1,000 innocent Syrians; Whereas these flagrant actions were in violation of international norms and the laws of war; Whereas the United States and 188 other countries comprising 98 percent of the world's population are parties to the Chemical Weapons Convention, which prohibits the development, production, acquisition, stockpiling or use of chemical weapons; Whereas, in the Syria Accountability and Lebanese Sovereignty Restoration Act of 2003, Congress found that Syria's acquisition of weapons of mass destruction threatens the security of the Middle East and the national security interests of the United States; Whereas the United Nations Security Council, in Resolution 1540 (2004), affirmed that the proliferation of nuclear, chemical and biological weapons constitutes a threat to international peace and security; Whereas, the objective of the United States' use of military force in connection with this authorization should be to deter, disrupt, prevent, and degrade the potential for, future uses of chemical weapons or other weapons of mass destruction; Whereas, the conflict in Syria will only be resolved through a negotiated political settlement, and Congress calls on all parties to the conflict in Syria to participate urgently and constructively in the Geneva process; and Whereas, unified action by the legislative and executive branches will send a clear signal of American resolve. SEC. \_\_\_ AUTHORIZATION FOR USE OF UNITED STATES ARMED FORCES (a) Authorization. -- The President is authorized to use the Armed Forces of the United States as he determines to be necessary and appropriate in connection with the use of chemical weapons or other weapons of mass destruction in the conflict in Syria in order to -- (1) prevent or deter the use or proliferation (including the transfer to terrorist groups or other state or non-state actors), within, to or from Syria, of any weapons of mass destruction, including chemical or biological weapons or components of or materials used in such weapons; or (2) protect the United States and its allies and partners against the threat posed by such weapons. (b) War Powers Resolution Requirements. -- (1) Specific Statutory Authorization. -- Consistent with section 8(a)(1) of the War Powers Resolution, the Congress declares that this section is intended to constitute specific statutory authorization within the meaning of section 5(b) of the War Powers Resolution. (2) Applicability of other requirements. -- Nothing in this joint resolution supersedes any requirement of the War Powers Resolution.

#### Statutory restrictions control the perception of preemption

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.

#### Status quo nuclear preemption policy crushes global development of nuclear power

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.

#### Proliferation fears underlie all nuclear energy development – relaxing non-prolif pressure is key to global distribution of nuclear power – that’s the necessary internal link to solve

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

[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.”

#### Other sources fail

Cohen 2012

[Armond, Executive Director, Clean Air Task Force, 2-13, “Decarbonization: The Nuclear Option,” http://energy.nationaljournal.com/2012/02/is-america-poised-for-nuclear.php?print=true&printcomment=2161670]

Just on its face, this is a tall order**. The capital investment is jaw-dropping, and it is becoming increasingly difficult to site new energy projects**, regardless of whether they are solar or wind farms, transmission lines, CCS infrastructure, shale gas drilling, or nuclear facilities. More subtly, **integrating these various energy sources—especially balancing output of intermittent renewables in an electric grid with no significant ability to store energy—is a major challenge; it is far from certain it can even be done at very large scale. To maximize our odds of meeting the target, we will need to prioritize development and deployment of technologies that appear capable of growing economically to full scale.¶ Cheap** unscrubbed **natural gas is a “McSolution” to the problem—tempting, but probably not the healthiest long-term choice. In order to make a major contribution to climate abatement, methane emissions from natural gas production and distribution will need to be reduced, and gas-fired power plants will need to use CCS technologies**. And**, although gas in the United States today is sold at prices below production costs, that cannot continue for long, especially in increasingly international markets**. Similarly**, “soft energy paths” like PV power** (also sometimes today sold below cost) **will need significant grid support and zero-carbon balancing to generate meaningful emission reductions. The economic supply curve for large, attractive sites for these projects is bound to bend sharply upwards over time as well. In this context, nuclear power has** potentially significant advantages to offer: **It is demonstrably low-carbon; it provides baseload energy; unlike wind and solar, it has high power density; and, although gas is cheap today, the price of new nuclear power appears to approach that of new coal**. Perhaps more importantly, **the price of new nuclear plants will decline as years pass. Standardization will lead to** some **cost reductions; factory assembly of small, modular units could bring about further step-change reductions** (as it has for automobiles and airplanes) **in production costs**. None of this means that nuclear is poised for a renaissance in the United States. Utilities and their regulators won’t argue with $3 gas, Congress is unwilling to put a price on carbon, and some people remain vehemently opposed to nuclear energy. Ultimately, however, **nuclear energy is** probably **an** indispensible element of any credible plan to substantially decarbonize the country. The Nuclear Regulatory Commission’s recent approval of the new Westinghouse reactor design is good news in this regard, as it should help revitalize the American nuclear industry and keep it moving on a path of continuous improvement. In the longer term, a **host of newer technologies, including passively cooled small reactors, gas-cooled reactors, and reactors with liquid fuels offer significant potential for further improvements in cost and safety. The country would do well to support continued development and deployment of these designs. In an ideal world, we might wait to scale up nuclear power until after we’ve exhausted all efficiency and renewables options**. Unfortunately, however, **we don’t have decades to do this, even if we thought traditional green sources would eventually fill the zero-carbon void, which seems unrealistic. Half of the CO2 emitted today will still be warming the planet 1,000 years from now, and these legacy emissions won’t erase themselves**. We need to develop all low-carbon energy options now to hedge against the risk of serious climate consequences; **nuclear power**, despite its genuine challenges, cannot be left off the table.

#### And err aff – posturing doesn’t prevent proliferation

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)

It may be time, then, to reconsider the "supreme priority" approach to nuclear proliferation. It would certainly be preferable that a number of variously designated regimes (and quite a few others) ever obtain nuclear weapons. But if they do so they are by far most likely to put them to use--if that is the term--the same way other nuclear countries have: to stoke their collective egos and to deter real or perceived threats. Proliferation alarmists (a category which seems to embrace almost the totality of the foreign policy establishment) may occasionally grant that countries principally obtain a nuclear arsenal to counter real or perceived threats. But many go on to argue that the newly nuclear country will then use its nuclear weapons to dominate the area. This argument was repeatedly used with dramatic urgency by Kenneth Pollack and many others for the dangers to world peace and order supposedly posed by Saddam Hussein, and it is now being dusted off and applied to Iran. Exactly how this domination business is to be carried out is never make very clear. The United States possesses a tidy array of thousands of nuclear weapons and can't even dominate downtown Baghdad--or even keep the lights on there. But the notion apparently is that should an atomic Iraq (in earlier fantasies) or North Korea or Iran (in present ones) rattle the occasional rocket, all other countries in the area, suitably intimidated, would supinely bow to its demands. Far more likely is that any threatened states will make common cause with each other against the threatening neighbor, perhaps enlisting the convenient aid eagerly proffered by other countries probably including the United States and conceivably even, in the case of Iran, Israel. Cirincione paints a much darker picture. He thinks a nuclear Iran or North Korea could readily be deterred from using a nuclear weapon against their neighbors or the United States, and he discounts the likelihood either might "intentionally give a weapon to a terrorist group they could not control." What sets Cirincione off instead is an extravagant fear cascade which envisions "a nuclear chain reaction where states feel they must match each other's nuclear capability," something "underway already in the Middle East where a dozen Muslim nations suddenly declared interest in starting nuclear-power programs" which, he asserts, are a "nuclear hedge against Iran" (or, one might add, against the United States). This, continues Cirincione, "could lead to a Middle East with not one nuclear-weapons state, Israel, but four or five," and that, he concludes, "is a recipe for nuclear war."97 President Bush is more blunt, but equally fanciful: "if you're interested in avoiding World War III, it seems like you ought to be interested in preventing [Iran] from having the knowledge necessary to make a nuclear weapon."98 Following this imaginative chain of logic, and it becomes clear that, if North Korea and Iran cannot be stopped by lesser means from getting a bomb (or in Bush's terms even from acquiring the knowledge of how to do so), the world has no choice but to apply military force to stop them, killing in the process thousands, or even tens or hundreds of thousands, of people. All this to avoid finding out if the extreme imaginings have any substance.99 If a leader of a state is determined to obtain a nuclear capacity, dedicated antiproliferators have choice of two policy options: 1) let him have it, or, in distinct contrast, 2) let him have it. Under the first option, antiproliferators might seek to make things difficult and costly for the nuclear aspirant, but in the end they would stand back and let the undesirable development come about, trusting (or hoping) that the new nuclear country could be kept in line by deterrence even as they remain mindful of historical experience which strongly suggests that new nuclear countries--even ones that once seemed to be hugely threatening like China in 1964--have been content to use their weapons for purposes of prestige and deterrence. Under the second option, antiproliferators, under the influence of imaginings about dire things that could conceivably transpire should the nuclear aspirant succeed, would desperately apply military action or sanctions against the determined nuclear aspirant, policies that will inevitably result in the deaths of a very considerable number of people, quite possible more than have been killed by all the nuclear explosions in all of history. This paper warns against the second of these, and recommends the first. "It is dangerous," muses Jacques Hymans aptly, "to fight smoke with fire."100 Nuclear proliferation, while not necessarily desirable, is unlikely to accelerate or prove to be a major danger. And extreme policies based, however logically, on worst case fantasies about proliferation need careful reconsideration.101 They can generate costs far higher than those likely to be generated by the potential (and often imaginary) problems they seek to address.

### Contention Three: Warming Outweighs

#### Uncertainty means vote aff – our ability to predict exactly what will happen and adapt is minimal

Kim, 2012 (Dr. Jim Yong, President of the World Bank Group, “Turn Down The heat: why a 4°C warmer world must be avoided”, November, World Bank, http://climatechange.worldbank.org/sites/default/files/Turn\_Down\_the\_heat\_Why\_a\_4\_degree\_centrigrade\_warmer\_world\_must\_be\_avoided.pdf)

It is my hope that this report shocks us into action. Even for those of us already committed to fighting climate change, I hope it causes us to work with much more urgency. This report spells out what the world would be like if it warmed by 4 degrees Celsius, which is what scientists are nearly unanimously predicting by the end of the century, without serious policy changes. The 4°C scenarios are devastating: the inundation of coastal cities; increasing risks for food production potentially leading to higher malnutrition rates; many dry regions becoming dryer, wet regions wetter; unprecedented heat waves in many regions, especially in the tropics; substantially exacerbated water scarcity in many regions; increased frequency of high-intensity tropical cyclones; and irreversible loss of biodiversity, including coral reef systems. And most importantly, a 4°C world is so different from the current one that it comes with high uncertainty and new risks that threaten our ability to anticipate and plan for future adaptation needs. The lack of action on climate change not only risks putting prosperity out of reach of millions of people in the developing world, it threatens to roll back decades of sustainable development. It is clear that we already know a great deal about the threat before us. The science is unequivocal that humans are the cause of global warming, and major changes are already being observed: global mean warming is 0.8°C above pre industrial levels; oceans have warmed by 0.09°C since the 1950s and are acidifying; sea levels rose by about 20 cm since pre-industrial times and are now rising at 3.2 cm per decade; an exceptional number of extreme heat waves occurred in the last decade; major food crop growing areas are increasingly affected by drought. Despite the global community’s best intentions to keep global warming below a 2°C increase above pre-industrial climate, higher levels of warming are increasingly likely. Scientists agree that countries’ current United Nations Framework Convention on Climate Change emission pledges and commitments would most likely result in 3.5 to 4°C warming. And the longer those pledges remain unmet, the more likely a 4°C world becomes. Data and evidence drive the work of the World Bank Group. Science reports, including those produced by the Intergovernmental Panel on Climate Change, informed our decision to ramp up work on these issues, leading to, a World Development Report on climate change designed to improve our understanding of the implications of a warming planet; a Strategic Framework on Development and Climate Change, and a report on Inclusive Green Growth. The World Bank is a leading advocate for ambitious action on climate change, not only because it is a moral imperative, but because it makes good economic sense. But what if we fail to ramp up efforts on mitigation? What are the implications of a 4°C world? We commissioned this report from the Potsdam Institute for Climate Impact Research and Climate Analytics to help us understand the state of the science and the potential impact on development in such a world. It would be so dramatically different from today’s world that it is hard to describe accurately; much relies on complex projections and interpretations. We are well aware of the uncertainty that surrounds these scenarios and we know that different scholars and studies sometimes disagree on the degree of risk. But the fact that such scenarios cannot be discarded is sufficient to justify strengthening current climate change policies. Finding ways to avoid that scenario is vital for the health and welfare of communities around the world. While every region of the world will be affected, the poor and most vulnerable would be hit hardest. A 4°C world can, and must, be avoided. The World Bank Group will continue to be a strong advocate for international and regional agreements and increasing climate financing. We will redouble our efforts to support fast growing national initiatives to mitigate carbon emissions and build adaptive capacity as well as support inclusive green growth and climate smart development. Our work on inclusive green growth has shown that—through more efficiency and smarter use of energy and natural resources—many opportunities exist to drastically reduce the climate impact of development, without slowing down poverty alleviation and economic growth. This report is a stark reminder that climate change affects everything. The solutions don’t lie only in climate finance or climate projects. The solutions lie in effective risk management and ensuring all our work, all our thinking, is designed with the threat of a 4°C degree world in mind. The World Bank Group will step up to the challenge.

#### Err aff on probability – risks of major war are almost ZERO

Fettweis 2006

[Christopher, National Security Decision Making Department, US Naval War College, “A Revolution in International Relation Theory: Or, What If Mueller Is Right?” International Studies Review (2006) 8, 677–697]

The obsolescence-of-major-war argument is familiar enough to need little introduction (Mueller 1989, 1995, 2004; see also Rosecrance 1986, 1999; Ray 1989; Kaysen 1990; Van Evera 1990–1991; Kegley 1993; Jervis 2002; Mandelbaum 2002). In its most basic and common form, the thesis holds that **a broad shift in attitudes toward warfare has occurred within the most powerful states of the international system, virtually removing the possibility for the kind of war that pits the strongest states against each other. Major wars**, fought by the most powerful members of the international system, **are**, in Michael Mandelbaum's (1998/1999:20) words, "somewhere between impossible and unlikely."  The argument is founded upon a traditional liberal faith in the possibility of moral progress within the society of great powers, which has created for the first time "an almost universal sense that the deliberate launching of a war can no longer be justified" (Ray 1989:425; also Luard 1986, 1989). To use Francis Fukayama's (1992) phrase**, it is the "autonomous power of ideas" that has brought major war to an end. Whereas past leaders were at times compelled by the masses to use force in the defense of the national honor, today popular pressures urge peaceful resolutions to disputes between industrialized states. This normative shift has all but removed warfare from the set of options before policymakers, making it a** highly unlikely outcome. Mueller (1989:11) has referred to the abolition of slavery and dueling as precedents. "Dueling, a form of violence famed and fabled for centuries, is avoided not merely because it has ceased to seem 'necessary,' but because it has sunk from thought as a viable, conscious possibility. You can't fight a duel if the idea of doing so never occurs to you or your opponent." By extension, states cannot fight wars if doing so does not occur to them or to their opponent. Major war has become, in Mueller's words, "sub-rationally unthinkable."  Obviously, the obsolescence-of-major-war argument is not without critics. First, and most basic, the literature is sometimes quite vague about what constitutes a "major war" and who exactly the "great powers" are. In Retreat from Doomsday, Mueller (1989) alternately describes his data set as consisting of "developed countries" (p. 4), the "first and second worlds" (p. 256), the "major and not-so-major countries" (p. 5), and the 44 wealthiest states (p. 252). Others refer to the great powers as those states with a certain minimum standard of living, especially those in Europe (Luard 1986:398); modern, "industrial societies" (Kaysen 1990); the "leading global powers" (Väyrynen 2006:13); or merely "the most powerful members of the international system" (Mandelbaum 1998/1999:21). What constitutes a "major" war is also often left unclear. Some analyses use arbitrary quantitative values (for example, 1,000 battle deaths); others study only world wars, those fought by the most powerful members of the international system, drawing on all their resources, with the potential to lead to outcomes of "revolutionary geopolitical consequences including the birth and death of regimes, the redrawing of borders, and the reordering of the hierarchy of sovereign states" (Mandelbaum 1998/1999:20).  **Definitions are often the last refuge of academic scoundrels—many IR theories deal with potentially contradictory information by simply refining or redefining the data under consideration. Perhaps the best way to avoid this pitfall is to err on the side of inclusion, expanding the analysis as broadly as possible. While the obsolescence-of-major-war argument clearly covers the kind of catastrophic wars that Mandelbaum analyzes, any big war between industrialized, powerful states would render the proposition false. At its essence, like pornography, one knows major war when one sees it.** Major powers will likely occasionally deem it in their interest to strike the minor, and at times small, states, especially those led by nondemocratic, unenlightened leaders. **But societal unease at the continuation of small wars—such as those in Afghanistan and Iraq or between poor, weak states like Ethiopia and Eritrea—should be ameliorated by the knowledge that, for the first time in history, world war is exceedingly unlikely**. Determining which states are great powers is slightly more complicated, but not by much. Two decades ago, Jack Levy (1983:10) noted that the importance of the concept of "great power" was not matched by anything approaching analytical precision in its use and the field has not progressed much since. Relevant states for this analysis are those with the potential to be great powers, whether that potential is realized or not. The choice not to devote a large portion of one's national resources toward territorial defense was not available to most states in other, bygone eras. If today's rich states can choose not to prepare for war without consequence, then the nature of the system may well have changed.  Broadly speaking, there is an indirect relationship between the relative level of development and the chances of being involved in a major war against a peer. In its most basic, inclusive, and falsifiable form, the obsolescence-of-major-war argument postulates that the most advanced countries—roughly speaking, those in the global north—are unlikely to fight one another ever again. Precise determination of which countries are in the "north" and which are not is less important than it may seem at first, since current versions of the argument do not restrict themselves to the great powers. As will be discussed below, if the logic behind the obsolescence-of-major-war argument is correct, a drastic diminution of all kinds of war everywhere may be on the horizon. It is important to note that this argument does not suggest that competition is coming to a conclusion, only that the means to compete have changed. Rivalry will continue; envy, hubris, and lust for power will likely never disappear. Rogues and outlaws will probably always plague humanity, but very rarely as leaders of powerful states, especially in the northern democracies. **The Mueller argument merely holds that** war need not follow from any of this, **especially major wars**. States can compete in nonviolent ways, addressing the logic of war with the grammar of commerce, to paraphrase Edward Luttwak (1990:19). The conflicts of the future may be fought in boardrooms rather than battlefields, using diplomacy, sanctions, and the methods of commerce rather than brute force.  One of the obvious strengths of the obsolescence-of-major-war argument is that it carries clear routes to falsification. It can be proven incorrect by virtually any big war in Western Europe, in the Pacific Rim, or in North America. If Japan attacks Australia, if the United States moves north, or if Germany rises again and makes another thrust at Paris and Moscow, Retreat from Doomsday will join The Great Illusion (Angell [1909] 1913) in the skeptical realist's list of utopian fantasies. Until that happens, however, scholars are left to explain one of the great anomalies in the history of the international system.  Most IR scholarship carries on as if such an anomaly simply does not exist. This is especially true of realists, whose theories typically leave little room for fundamental systemic change (Lebow 1994). "The game of politics does not change from age to age," argued a skeptical Colin Gray (1999:163), "let alone from decade to decade." Indeed, the most powerful counterargument to Mueller—and one that is ultimately unanswerable—is that this period of peace will be temporary and that someday these trends will be reversed. Neorealists traditionally contend that the anarchic structure of the system stacks the deck against long-term stability, which accounts for "war's dismal recurrence throughout the millennia," in the words of Kenneth Waltz (1989:44). Other scholars are skeptical about the explanatory power of ideas, at least as independent variables in models of state behavior (Mearsheimer 1994/1995; Brooks and Wohlforth 2000/2001; Copeland 2003).  However, one need not be convinced about the potential for ideas to transform international politics to believe that major war is extremely unlikely to recur. Mueller, Mandelbaum, Ray, and others may give primary credit for the end of major war to ideational evolution akin to that which made slavery and dueling obsolete, but others have interpreted the causal chain quite differently. Neoliberal institutionalists have long argued that complex economic interdependence can have a pacifying effect upon state behavior (Keohane and Nye 1977, 1987). Richard Rosecrance (1986, 1999) has contended that evolution in socio-economic organization has altered **the shortest, most rational route to state prosperity** in ways that **make war unlikely.** Finally, many others have argued that credit for great power peace can be given to the existence of nuclear weapons, which make aggression irrational (Jervis 1989; Kagan et al. 1999). With so many overlapping and mutually reinforcing explanations, at times the end of major war may seem to be overdetermined (Jervis 2002:8–9). For purposes of the present discussion, successful identification of the exact cause of this fundamental change in state behavior is probably not as important as belief in its existence. In other words, the outcome is far more important than the mechanism. The importance of Mueller's argument for the field of IR is ultimately not dependent upon why major war has become obsolete, only that it has.  Almost as significant, all these proposed explanations have one important point in common: they all imply that change will be permanent. Normative/ideational evolution is typically unidirectional—few would argue that it is likely, for instance, for slavery or dueling to return in this century. The complexity of economic interdependence is deepening as time goes on and going at a quicker pace. And, obviously, nuclear weapons cannot be uninvented and (at least at this point) no foolproof defense against their use seems to be on the horizon. The combination of forces that may have brought major war to an end seems to be unlikely to allow its return.  **The twentieth century witnessed an unprecedented pace of evolution in all areas of human endeavor, from science and medicine to philosophy and religion. In such an atmosphere, it is not difficult to imagine that attitudes toward the venerable institution of war may also have experienced rapid evolution and that its obsolescence could become plausible, perhaps even probable, in spite of thousands of years of violent precedent. The** burden of proof **would seem to be on those who maintain that the "rules of the game" of international politics, including the rules of war, are the lone area of human interaction immune to fundamental evolution and that, due to these immutable and eternal rules, war will always be with us. Rather than ask how major war could have grown obsolete, perhaps scholars should ask why anyone should believe that it could not.**

**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”** (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.

**Education about federal policies must be informed by climate science – that is key to check special interests from causing warming, and it’s low now**

**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 decisions 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.

**Put our predictions on a different level – they are based in fact and not politics. Attempts to relegate science as mere opinion empower climate skeptics and cause warming**

**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.

## 2AC

### Species

#### You should evaluate the plan vs. the alternative – anything else moots the 1AC – it was predicated on the resolution as the starting point of the debate – This focus is necessary – Our Hanson ev says that the application of science to policy development is critical to prevent apathy

#### Prior questions fail

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.

#### Frame the link debate in terms of the 1AC – Yes we rely on the law and we’ll contest their link arguments but the 1AC is presented as a response to the way the environment is situated in the law right now – the status quo views the non-human as a lesser concern than distinctly human concerns like proliferation – the 1AC reframes the debate which means the perm accesses their internal links

#### The aff adopts an ethic of environmental pragmatism, which prevents a will to dominate nature and solves planetary extinction

Kelly A. Parker, assistant professor of philosophy at Grand Valley State University, in Allendale, Michigan, “Pragmatism and Environmental Thought,” *Environmental Pragmatism* 1996, ed: Light and Katz, p. 25-27

(1) For the pragmatist, the environment is above all not something "out there," somehow separate from us, standing ready to be used up or preserved as we deem necessary. As the French phenomenologist Maurice Merleau-Ponty said, "Our own body is in the world as the heart is in the organism".17 We cannot talk about environment without talking about experience, the most basic term in pragmatism. All that we or any being can feel, know, value, or believe in, from the most concrete fact ("I am cold") to the most abstract or transcendental idea ("Justice," "God"), has its meaning, first of all, in some aspect of an immediately felt here and now. Environment, in the most basic sense, is the field where experience occurs, where my life and the lives of others arise and take place. Experience, again, is not merely subjective. It has its "subjective" side, but experience as such is just another name for the manifestation of what is. What is is the ongoing series of transactions between organisms and their environments. The quality of experience - whether life is rich or sterile, chaotic or orderly, harsh or pleasant - is determined at least as much by the quality of the environment involved as by what the organism brings to the encounter. Environment is as much a part of each of us as we are parts of the environment, and moreover, each of us is a part of the environment - a part of experience - with which other beings have to contend. In asserting the fundamental relatedness among organisms and environments, pragmatism commits us to treating all environments with equal seriousness. Urban and rural; wilderness, park and city; ocean and prairie; housing project, hospital and mountain trail - all are places where experience unfolds. The world, in this view, is a continuum of various environments. Endangered environments perhaps rightly occupy our attention first, but environmental philosophy and ecological science are at bottom attempts to understand all the environments we inhabit. Attention to the whole continuum of environments allows us to put into perspective what is truly valuable about each. The environments we inhabit directly affect the kinds of lives that we and others can live. There is an unfortunate tendency to draw crassly instrumentalist conclusions from this line of thought. I want to caution against this tendency. If environment "funds" experience, this reasoning might go, then let us use technology to turn the whole world into an easily manageable, convenient stock of environments that conduce to pleasant human experiences. This Theme Park: Earth line of thinking neglects our inherent limitations as finite parts of the world, and sets us up for disaster. Repeated attempts to dominate nature (e.g., our damming the Nile and its damning us right back, or our tragicomic' efforts to "tame" the atom) should have begun to teach us something about the limits of human intelligence. Such attempts to dominate nature assume that no part of the environment in question is beyond the field of settled experience. We can indeed exert remarkable control over parts of the experienced world, remaking it to suit our purposes. This may be appropriate, if our purposes make sense in the first place. (I know of no reason to object to the prudent use of natural gas to heat our homes, for example.) But the very idea that the environment funds experience involves the notion that there is an ineffable aspect of the world. It is indeed arrogant to think that we can master nature; it is moreover delusional and ultimately self-negating. If we have our being in the ongoing encounter with environment, then to will that the environment become a fully settled, predictable thing, a mere instrumental resource in which there can be no further novelty, is to will that we undergo no further growth in experience. The attempt to dominate nature completely is thus an attempt to annihilate the ultimate source of our growth, and hence to annihilate ourselves.

#### Perm do the Plan and embrace your ethical imperative for Political Scholarship and Speech against the oppression of humanism

#### Alt fails --- public won’t sign on to a radical paradigm shift --- the perm solves best because it builds the foundation for a transition to an environmentally benign effort --- [this is magnified by their perm answers that say that ANY use of the state is complicit with violence]

Alyson C. Flournoy, Professor, University of Florida, Levin College of Law, Building an Environmental Ethic from the Ground Up, 27 Environs Envtl. L. & Pol'y J. 53, Fall, 2003, LN

Given this assumption, what is the relevance of environmental philosophy? Environmental philosophers are making contributions on many fronts, but the most visible is work that develops coherent theories promoting less destructive relationships with the nonhuman world. When one surveys the literature on environmental philosophy, the most prevalent focus is the challenge to identify a coherent alternative to a human-centered utilitarian theory. n35 Thus the first step most philosophers take is to reject the dominant human-centered utilitarian ethic. This is essential work that may provide alternative ethical frameworks for people who are dissatisfied with the ethics reflected in traditional Western philosophy and our current practices. In other words, **people who already know that they reject the dominant ethic may immediately benefit by the insight into alternative ethics. But the vast majority of citizens** who may **consider themselves sympathetic to environmentalism may not identify** easily **with** these **radically different ethics. So** mainstream **philosophical discourse on environmental ethics may not engage the** American **public** on relevant ethical questions. Philosophical environmental ethics may be so far removed from lay values and worldviews as to **be irrelevant and inaccessible**. **Engaging a broad**er **swath** of the public on the question of what matters is what I call building an ethic from the ground up. This paper suggests that a key step towards such engagement may be the **develop**ment of **a new discourse about environmental values.** Initially, the term environmentalism may have served as an adequate focus for our discourse. It captured and expressed the public desire to embrace a new ethic, new values, and prompted deep thought about our relationship with the environment. But the meaning of the term has been so diluted over time that commentators have noted that it is now on a par with apple pie and motherhood, n36 something most people embrace and only a few view unsympathetically. n37 Today, environmentalism seems to suggest a posture supportive of environmental laws as they exist or with moderate reforms. It may be that environmentalism today [\*69] lacks a core meaning distinct from the dominant human-centered utilitarian ethic. n38 Use of the word "environmentalism" does not lead to thoughtful engagement with the ethical and practical problems that arise under the current dominant ethic. It is a question mark too often used as a period. One might argue that to cure this void, coherent alternative theories are needed and that the theory-building work being done by philosophers is the most urgent need. However, it seems possible that the leap required of people if they are to understand and embrace a coherent environmental ethic is too difficult for most, given current attitudes and the limited public discourse about underlying values. Coherent environmental ethics are compartmentalized as "radical" and rejected, leaving a vast undefined realm of "mainstream" environmentalism. Most people believe themselves concerned about the environment, even though that commitment may be one without well-defined content. To challenge the public's comfortable self image as "environmentally friendly," we may need concepts that are **not so radically removed from utilitarianism** but which **frame the ethical** and practical **shortcomings** of our current ethics as applied to environmental problems. n39 In other words, concepts that show the possibility and value [\*70] of more ecologically enlightened ethics, but which do not require wholesale acceptance of a radically altered worldview, may have value. n40 A. Towards a New Ethical Discourse: Stepping Stones This paper emphasizes the value of an environmental ethics discourse that can reach a wide segment of the public. Concepts that can frame the ethical issues in a more accessible form may help those who are not completely satisfied with the dominant bounded and imperfect, anthropocentric utilitarian ethics embedded in our policies and laws. Therefore, I advocate developing concepts that can serve as points of departure from where the majority is today -- concepts that frame the ethical issues in an accessible form and offer a new direction for those whose ethical impulses diverge from current dominant norms. n41 Such concepts may fill a gap that exists between legal scholars' work that is directed at improving decisionmakers' analytic techniques and philosophers' work to develop coherent ethical theories. Concepts and vocabulary that draw on both philosophy and law may be useful tools that will help members of the public to understand the full implications of current laws in ethical terms, and to identify or envision practices and policies consistent with their evolving individual ethical intuitions. Developing these concepts will require that we broaden the definition of appropriate work for lawyers and philosophers. Philosophers' contribution **cannot be limited** to developing and justifying a coherent alternative completely apart from human-centered utilitarianism. And lawyers' contribution cannot be limited to critiquing current legal standards or decisionmaking techniques. Philosophers must help us to create a discourse that describes ways of valuing the environment that builds on people's current values, and lawyers must analyze the extent to which existing and proposed laws are compatible with these values. Ultimately, such concepts **may prove more radical in practice than ecocentric ethical theories, in that they may enable ethical transformation that would otherwise not occur.** Metaphorically, we can think of such concepts as stepping stones -- ideas that help people to find their way past some of the constraints of [\*71] traditional ethics. Such concepts should focus public attention on the constraints imposed by traditional utilitarian ethics and bring into view the possibility of an ethic that addresses these constraints. These constraints include inadequate capacity to deal with long time horizons, uncertainty, integrated decisionmaking, social equity, and values that are not easily monetized. Stepping stones, unlike a true environmental ethic, may not provide coherent and complete responses to these constraints, but **by making the issues salient for the public**, they may **represent a necessary step in any widespread ethical evolution.** Where an environmental ethic might be described as requiring a leap from current dominant ethics, stepping stones require only a small step. They invite contemplation of change by highlighting the constraints of current ethics, but they do not demand a complete ethical transformation. To be effective, a stepping stone must have broad resonance with the public and provide a context for confronting some of the challenges that any environmental ethic will have to overcome, including long time horizons, scientific uncertainty and the limitations of the dominant economic framework. n42 One objection to the work of developing stepping stones may be that this is not the work of either philosophy or law. Under this view, environmental philosophy should properly focus on developing coherent alternatives to traditional ethics. Enlightened human-centered ethics will never transcend the ethical inadequacies of human-centered ethics and thus are compromised from the start. But **if environmental philosophy** is to take root, if **it is to reach its potential** as both an intellectual and moral tool for people interested in it, **some accessible groundwork must be laid.** n43 Further, the work to identify such concepts [\*72] is not entirely removed from philosophical concerns, but often lies at the boundary between philosophy and law. Some environmental philosophers and legal scholars are already working in this vein. n44 My goal here is to suggest that more common effort on this endeavor is essential. To illustrate the potential value of this approach, I explore one concept -- **sustainability** -- which holds promise as a stepping stone. **If systematically integrated into debates on law and policy** -- not as a legal standard, but **as a concept that frames the ethical questions** that law and policy raise -- it **may enable environmental philosophy to grow from the ground up**. Sustainability is not the only such concept, but it is one that warrants attention for reasons that I explore below.

#### Our perspectives aren’t irreconcilable – incorporating conceptions of the oppressed into the law is the only way to produce structural change.

Keith Hirokawa, “Some Pragmatic Observations About Radical Critique in Environmental law,” STANFORD ENVIRONMENTAL LAW JORNAL, 2002, LN.

Pragmatism may prove a useful tool in environmental debates simply because such debates can be characterized as competing, irreconcilable perspectives that suggest conflicts between paradigms. The environmentalist, for instance, may find it "incomprehensible that an applicant may be permitted to construct a shopping mall, a non-water dependent activity, on wetlands." n127 Yet, the property rights activist believes that "loss of freedom goes [\*254] hand-in-hand with loss of property rights." n128 As a result of such deadlocks (or at least what appear to be deadlocks), many commentators find themselves pessimistic and unable to move beyond the polemic. n129 Delgado's nostalgic recounting of the environmental debate prior to adoption of the public trust doctrine is essentially a "what if" story about someone else's victory. n130 Similar frustration exists in Justice Douglas' dissent in Sierra Club v. Morton, n131 as he tried to convince the court to extend standing to natural resource interests before the wilderness disappeared, in the helplessness pervading Rachel Carson's Silent Spring, n132 and in the nihilism felt by students of William Cronon's environmental history courses. n133 The pragmatic lesson to be learned from these losses is to recognize the conflict between the environmentalists' goals and the most appropriate methods of effecting those goals. The challenge is to "find a way 'the law' can be understood to include conceptions of the oppressed as they are coming to be, even if the weight of legal institutions coherently excludes them." n134

#### Double Bind – EITHER humans are morally equal to animals in which exploiting other animals is justified by the laws of nature, OR humans are morally superior in which case their framework is bunk

Neil Schulman 1995 [“The Illogic of Animal Rights”, http://www.pulpless.com/jneil/aniright.html]

If human beings are no different from other animals, thenlike all other animalsit is our nature to kill any other animal which serves the purposes of our survival and well-being, for that is the way of all nature. Therefore, aside from economic concerns such as making sure we don't kill so quickly that we destroy a species and deprive our descendants of prey,human animals can kill members of other animal species for their usefulness to us.It is only if we are not just another animal -- if our nature is distinctly superior to other animals -- that we become subject to ethics at all -- and then those ethics must take into account our nature as masters of the lower animals. We may seek a balance of nature; but "balance" is a concept that only a species as intelligent as humankind could even contemplate. We may choose to temper the purposes to which we put lower animals with empathy and wisdom; butby virtue of our superior nature, we decide... and if those decisions include the consumption of animals for human utilitarian or recreational purposes, then the limits on the uses we put the lower beasts are ones we set according to our individual human consciences. "Animal rights" do not exist in either case.

#### Creating this distinction is critical – it doesn’t result in their impacts and there is only a risk of aff offense

David R. Schmahmann and Lori J. Polacheck 1995, a partner in the firm of Nutter, McLennan & Fish, Boston College Environmental Affairs Law Review, SPRING, 95

In the end, however, it is the aggregate of these characteristics that does render humans fundamentally, importantly, and unbridgeably different from animals, even though it is also beyond question that in individual instances -- for example, in the case of vegetative individuals -- some animals may indeed have higher cognitive skills than some humans. To argue on that basis alone, however, that human institutions are morally flawed because they rest on assumptions regarding the aggregate of human abilities, needs, and actions is to deny such institutions the capacity to draw any distinctions at all. Consider the consequences of a theory which does not distinguish between animal life and human life for purposes of identifying and enforcing legal rights. Every individual member of every species would have recognized claims against human beings and the state, and perhaps other animals as well. As the concept of rights expanded to include the "claims" of all living creatures, the concept would lose much of its force, and human rights would suffer as a consequence. Long before Singer wrote Animal Liberation, one philosopher wrote: If it is once observed that there is no difference in principle between the case of dogs, cats, or horses, or stags, foxes, and hares, and that of tsetse-flies or tapeworms or the bacteria in our own blood-stream, the conclusion likely to be drawn is that there is so much wrong that we cannot help doing to the brute creation that it is best not to trouble ourselves about it any more at all. The ultimate sufferers are likely to be our fellow men [sic], because the final conclusion is likely to be, not that we ought to treat the [\*753] brutes like human beings, but that there is no good reason why we should not treat human beings like brutes. Extension of this principle leads straight to Belsen and Buchenwald, Dachau and Auschwitz, where the German and the Jew or Pole only took the place of the human being and the Colorado beetle.

#### Radical theorizing fails --- incremental legal change better actualizes the goals the alt

Keith Hirokawa, L.L.M., Northwestern School of Law of Lewis & Clark College; J.D., University of Connecticut, Some Pragmatic Observations About Radical Critique In Environmental Law, 21 Stan. Envtl. L.J. 225, June, 2002, LN

Changes in each instance create entirely new contexts in which more (or less) progressive arguments find a hold. Every time a change occurs, even if it is incremental or ostensibly seems benign, the change creates a new context within which an entirely new set of possibilities will arise. n230 The pragmatist therefore evaluates progress by the distance a new idea causes practices to move away from past practices and paradigms. The difference between the pragmatic version of progress and the Kuhnian version is one only of degree. In the end, the results of both versions of progress are the same - we look back at the change and realize that earlier ideas do not make sense anymore. The effectiveness of the pragmatic approach lies in the simple realization that, in adopting an innovative approach to a legal question, courts will find comfort in adopting what appears to be an incremental change, rather than a radical paradigmatic shift**. In** [\*278] **contrast to radical theorists** that deny the existence of progress because of a failure to immediately reach the radical goals of alternative paradigms, the pragmatist recognizes that a **series of incremental changes eventually add up**. Environmental pragmatism enables environmentalists to seek **achievable gains** by focusing on minor improvements in the law that **incrementally close the gap** between the values that pre-existed current environmental law and the alternative paradigms of environmental protection. Hence, the pragmatic view contests the main thrust of Delgado's argument - that the adoption of the public trust doctrine effectively stunted hopes for progress in environmental law. An idea might be completely foreclosed from the legal arena due only to the character of the idea itself; an idea that cannot be integrated into an existing body of law will not be well received. Accordingly, Delgado's invitation to **critical** **environmental theory can emphatically be rejected**. **Innovative legal theories of environmental protection,** such as the public trust doctrine, **have altered our conception of the environment** and hence **made law more amenable to the radical theories of environmental protection.**

#### Humanism is inescapable – and giving up on it dooms the planet to extinction

Davies 97

(Tony, Professor of English at Birmignham. Humanism. 130)

So there will not after all be, nor indeed could there be, any tidy definitions. **The several humanisms** – the civic humanism of the quattrocento Italian city-states, the Protestant humanism of sixteenth century northern Europe, the rationalistic humanism that attended at the revolutions of enlightened modernity, and the romantic and positivistic humanisms through which the European bourgeoisies established their hegemony over it, the revolutionary humanism that shook the world and the liberal humanism that sought to tame it, the humanism of the Nazis and the humanism of their victims and opponents, the antihumanist humanism of Heidegger and the humanist antihumanism of Foucault and Althusser – **are not reducible to one, or even to a single line or pattern**. Each has its distinctive historical curve, its particular discursive poetics, its own problematic scansion of the human. Each seeks, as all discourses must, to impose its own answer to the question of ‘which is to be master’. Meanwhile, **the problem of humanism remains, for the present, an inescapable horizon within which all attempts to think about the ways in which human being have, do, might live together in and on the world are contained**. Not that the actual humanisms described here necessarily provide a model, or even a useful history, least of all for those very numerous people, and peoples, for whom they have been alien and oppressive. Some, at least, offer a grim warning. Certainly it should no longer be possible to formulate phrases like ‘the destiny of man’ or ‘the triumph of human reason’ without an instant consciousness of the folly and brutality they drag behind them. **All humanisms, until now, have been imperial**. They speak of the human in the accents and the interests of a class, a sex, a ‘race’. **Their embrace suffocates those whom it does not ignore**. The first humanists scripted the tyranny of Borgias, Medicis and Tudors. Later humanisms dreamed of freedom and celebrated Frederick II, Bonaparte, Bismarck, Stalin. The liberators of colonial America, like the Greek and Roman thinkers they emulated, owned slaves. **At various times, not excluding the present, the circuit of the human has excluded women, those who do not speak Greek or Latin or English, those whose complexions are not pink, children, Jews. It is almost impossible to think of a crime that has not been committed in the name of humanity. At the same time, though it is clear that the master narrative of transcendental Man has outlasted its usefulness, it would be unwise simply to abandon the ground occupied by the historical humanisms. For one thing, some variety of humanism remains, on many occasions, the only available alternative to bigotry and persecution.** **The freedom to speak and write, to organize and campaign in defence of individual or collective interests, to protest and disobey: all these, and the prospect of a world in which they will be secured, can only be articulated in humanist terms. It is true that** the Baconian ‘Knowledge of Causes, and Secrett Motions of Things’, harnessed to an **overweening rationality** and an unbridled technological will to power, **has enlarged the bounds** of human empire **to the point of endangering the survival of the** violated **planet** on which we live. **But how, if not by mobilizing collective resources of human understanding and responsibility of ‘enlightened self-interest’ even, can that danger be turned aside?**

### Risk

**Perm do the plan and include a moment of dissensus – solve the links because it allows for self-reflexive analysis that solves their risk calculus arguments**

**The affirmative is a move away from this sort of risk analysis – Counter-Prolif decisions are based around false internal link claims like the domino effect and assumptions that nuclear power = nuclear weapons – Their Leep evidence proves this argument**

**K doesn’t solve the case – doesn’t change the way we debate non-prolif and nuclear power – Our hanson evidence answers their Boggs impact and says that public engagement is low now and the aff solves** (If they claim they solve the case that makes the alt a floating pic—that’s a voter for fairness because it moots the 1AC and makes it impossible for the aff to get offense on the K)

#### Only apocalyptic narrative solves – uniquely key to activism

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)

All this is not to say that apocalypticism directly or inevitably causes activism, or that believing catastrophe is imminent is the only reason people become activists. However, it is to say that activism and apocalypticism are associated for some people, and that this association is not arbitrary, for there is something uniquely powerful and compelling about the apocalyptic narrative. Plenty of people will hear it and ignore it, or find it implausible, or simply decide that if the situation really is so dire there is nothing they can do to prevent it from continuing to deteriorate. Yet to focus only on the ability of apocalyptic rhetoric to induce apathy, indifference or reactance is to ignore the evidence that it also fuels quite the opposite—grave concern, activism, and sometimes even outrage. It is also to ignore the movement’s history. From Silent Spring (Carson [1962] 2002) to The Limits to Growth (Meadows et al 1972) to The End of Nature (McKibben 1989), apocalyptic arguments have held a prominent place within environmental literature, topping best-seller lists and spreading the message far and wide that protecting the environment should be a societal priority. Thus, while it is not a style of argument that will be effective in convincing everyone to commit to the environmental cause (see Feinberg and Willer 2011), there does appear to be a close relationship between apocalyptic belief and activism among a certain minority. The next section explores the implications of that relationship further. [End Page 8]

#### Only our specific rhetoric solves

Stepp, 11/5/2012 (Matthew, Contributor and Senior Policy Analyst of the D.C.-based think tank the Information Technology and Innovation Foundation, “Climate Hawks and 'Reverse Tribalism': How Our Policy Choices Are Fueling Climate Inaction”, Forbes, http://www.forbes.com/sites/matthewstepp/2012/11/05/climate-hawks-and-reverse-tribalism-how-are-policy-choices-are-fueling-climate-inaction/)

A self-aware and important discussion has emerged among climate advocates on ‘reverse tribalism’: the process by which some within the climate community scold climate hawks for making exaggerated claims about climate change and extreme weather (see Hurricane Sandy). As Grist writer Dave Roberts puts it, these ‘climate scolds’ believe they, “are saving the [climate hawk] activists from themselves,” by keeping them within the bounds of peer-reviewed science and not allowing their alarming message to be used against them to create climate denial and spurn policy action.¶ **But this process** of reverse tribalism **exists** in the first place **because climate advocates are supporting the wrong policy choices**. In other words, reverse tribalism isn’t a communications issue, it’s a policy issue and it’s at the heart of solving climate change.¶ On paper, making the connection between specific extreme weather events like Hurricane Sandy and climate change is seen as a communications strategy. It’s a way for climate hawks (and I consider myself one) to convey a visceral sense of what climate change means and even feels like. If Americans connect the images of flooded subways, long gas station lines, and washed away neighborhoods to human-driven climate change, then they’re more likely to support climate policy.¶ For communicators like Roberts, it’s the best way to get their point across. And I couldn’t agree more that climate change is an urgent, society-threatening problem that requires aggressive attention over many decades.¶ The problem is that making the extreme weather-climate change connection isn’t working, reverse tribalism or not. It didn’t work after Hurricane Katrina. Or after another year of historic droughts and wildfires. And it probably won’t work after Hurricane Sandy.¶ Sure, Sandy’s devastating impacts on New Jersey and New York are helping spark a long overdue discussion on climate change within the parameters of the Presidential election (if we count NYC Mayor Michael Bloomberg’s endorsement of President Obama on climate grounds as a national discussion), but this shows the limits of it as a communications strategy. Policy elites will discuss climate change, reporters will challenge politicos with climate questions, and cover stories will be written, but more likely than not anything actionable will come from it. I am not suggesting the discussion of climate change isn’t important, but don’t expect Hurricane Sandy to be the proverbial foot to the policymakers backside.¶ **Jarring images of extreme weather aren’t sparking action because ‘climate scolds’ are muddying the messaging.** No, as I wrote in Sunday’s Washington Post the images aren’t sparking action because the policy options most climate advocates and environmentalists are selling the public are bankrupt:¶ “Many environmentalists argue that the best way to address climate change is for Americans to change their lifestyles and make sacrifices for the good of the planet. Americans are told they must consume less, waste less and spend more to buy clean energy. While David Brooks’s “Bourgeois Bohemians” may be able to retrofit their homes with solar panels and drive Chevy Volts, most of us can’t.”¶ Shifting from using fossil fuels to clean energy isn’t an obvious or easy economic choice for most Americans. Clean energy technologies like wind, solar, nuclear, and electric vehicles are more expensive than carbon-intensive alternatives and suffer from limited performance and intermittency problems. As a result, the dominant climate policies emphasized by advocates and environmentalists are like selling nothing more than a bill of goods. Preferred government mandates like Clean Energy Standards or regulatory schemes like cap-and-trade will raise energy prices. In absence of mandates, significant tax-payer subsidies are required to spur even modest clean energy deployment. As I put it in the same piece in the Post, climate change policy has:¶ “…become a hair shirt that Americans are expected to wear for the ‘good of the planet.’ Middle America has long been told what not to do: not to buy incandescent light bulbs, drive gas-guzzling cars and trucks, or use dirty energy.”¶ If Americans were offered clean energy options that were affordable and better than gasoline, coal, and natural gas, much of the derision towards clean energy would go away. Only then would mandates accelerate the deployment of cheap, clean energy rather than force more expensive clean energy technologies on the market. Only then would long-term subsidies not be needed for the clean energy industry to simply survive. And the need to constantly harp on every extreme weather event as one more reason for Americans to sacrifice for the public good becomes less of an issue, as does reverse tribalism.¶ To remove these cost and technology performance barriers – and therefore the major barrier to mitigating climate change – climate advocates should be discussing how best to support clean energy innovation to develop cheaper, better clean energy options. It’s clear that we can’t put the deployment cart before the development horse without feeding the very derision that climate advocates hope to overcome by connecting extreme weather to climate change. It’s an endless positive feedback loop and a vicious one at that.¶ Many fellow climate hawks will respond by saying that I have it all wrong. We just need better messaging. The aforementioned ‘climate scolds’ need to back off the reverse tribalism. Or even more wonky, I shouldn’t bash deployment policies to elevate clean energy innovation – it’s not an either/or proposition. By which they really mean “clean energy R&D is okay, but what is really important is deploying the clean tech we have today.”¶ But the reality is that clean energy is not ready for prime time and all the deployment in the world won’t make it so. One hundred more lithium ion car battery factories won’t get us batteries that cost $100/kWh and have 5 times more storage capacity. Only R&D-based innovation will get us that. The same is true with other key clean energy technologies. Most climate advocates have it wrong by overwhelmingly emphasizing deployment.¶ What we need today – and what Americans would get behind as ‘climate policy’ – is an aggressive clean energy innovation strategy aimed at developing cheaper and better technology options. Smarter deployment policies may be needed down the road to scale better technologies, but they would come with less baggage than the blunt deployment policies used today. Climate advocates and environmentalists need to forget about messaging and start innovating.

#### Their Weart evidence misses the boat – only the plan solves

Ted Nordhaus 11, chairman – Breakthrough Instiute, and Michael Shellenberger, president – Breakthrough Institute, MA cultural anthropology – University of California, Santa Cruz, 2-25, http://thebreakthrough.org/archive/the\_long\_death\_of\_environmenta)

Tenth, we are going to have to get over our suspicion of technology, especially nuclear power. There is no credible path to reducing global carbon emissions without an enormous expansion of nuclear power. It is the only low carbon technology we have today with the demonstrated capability to generate large quantities of centrally generated electrtic power. It is the low carbon of technology of choice for much of the rest of the world. Even uber-green nations, like Germany and Sweden, have reversed plans to phase out nuclear power as they have begun to reconcile their energy needs with their climate commitments. Eleventh, we will need to embrace again the role of the state as a direct provider of public goods. The modern environmental movement, borne of the new left rejection of social authority of all sorts, has embraced the notion of state regulation and even creation of private markets while largely rejecting the generative role of the state. In the modern environmental imagination, government promotion of technology - whether nuclear power, the green revolution, synfuels, or ethanol - almost always ends badly. Never mind that virtually the entire history of American industrialization and technological innovation is the story of government investments in the development and commercialization of new technologies. Think of a transformative technology over the last century - computers, the Internet, pharmaceutical drugs, jet turbines, cellular telephones, nuclear power - and what you will find is government investing in those technologies at a scale that private firms simply cannot replicate. Twelveth, big is beautiful. The rising economies of the developing world will continue to develop whether we want them to or not. The solution to the ecological crises wrought by modernity, technology, and progress will be more modernity, technology, and progress. The solutions to the ecological challenges faced by a planet of 6 billion going on 9 billion will not be decentralized energy technologies like solar panels, small scale organic agriculture, and a drawing of unenforceable boundaries around what remains of our ecological inheritance, be it the rainforests of the Amazon or the chemical composition of the atmosphere. Rather, these solutions will be: large central station power technologies that can meet the energy needs of billions of people increasingly living in the dense mega-cities of the global south without emitting carbon dioxide, further intensification of industrial scale agriculture to meet the nutritional needs of a population that is not only growing but eating higher up the food chain, and a whole suite of new agricultural, desalinization and other technologies for gardening planet Earth that might allow us not only to pull back from forests and other threatened ecosystems but also to create new ones. The New Ecological Politics The great ecological challenges that our generation faces demands an ecological politics that is generative, not restrictive. An ecological politics capable of addressing global warming will require us to reexamine virtually every prominent strand of post-war green ideology. From Paul Erlich's warnings of a population bomb to The Club of Rome's "Limits to Growth," contemporary ecological politics have consistently embraced green Malthusianism despite the fact that the Malthusian premise has persistently failed for the better part of three centuries. Indeed, the green revolution was exponentially increasing agricultural yields at the very moment that Erlich was predicting mass starvation and the serial predictions of peak oil and various others resource collapses that have followed have continue to fail. This does not mean that Malthusian outcomes are impossible, but neither are they inevitable. We do have a choice in the matter, but it is not the choice that greens have long imagined. The choice that humanity faces is not whether to constrain our growth, development, and aspirations or die. It is whether we will continue to innovate and accelerate technological progress in order to thrive. Human technology and ingenuity have repeatedly confounded Malthusian predictions yet green ideology continues to cast a suspect eye towards the very technologies that have allowed us to avoid resource and ecological catastrophes. But such solutions will require environmentalists to abandon the "small is beautiful" ethic that has also characterized environmental thought since the 1960's. We, the most secure, affluent, and thoroughly modern human beings to have ever lived upon the planet, must abandon both the dark, zero-sum Malthusian visions and the idealized and nostalgic fantasies for a simpler, more bucolic past in which humans lived in harmony with Nature.

**Alt collapses policy analysis**

Hendrick 9 (Diane; Department of Peace Studies – University of Bradford, “Complexity Theory and Conflict Transformation: An Exploration of Potential and Implications,” June,http://143.53.238.22/acad/confres/papers/pdfs/CCR17.pdf)

It is still relatively early days in the application of complexity theory to social sciences and there are doubts and criticisms, either about the applicability of the ideas or about the expectations generated for them. It is true that the translation of terms from natural science to social science is sometimes contested due to the significant differences in these domains, and that there are concerns that the meanings of terms may be **distorted,** thus making their use **arbitrary** or even **misleading**. Developing new, relevant definitions for the new domain applications, where the terms indicate a new idea or a new synthesis that takes our understanding forward, are required. In some cases, particular aspects of complexity theory are seen as of **only limited applicability**, for example, self-organisation (see Rosenau‘s argument above that it is only relevant in systems in which authority does not play a role). There are those who argue that much that is being touted as new is actually already known, whether from systems theory or from experience, and so complexity theory cannot be seen as adding value in that way. There are also concerns that the theory has not been worked out in sufficient detail, or with sufficient rigour, to make itself useful yet. Even that it encourages woolly thinking and imprecision. In terms of application in the field, it could be argued that it may lead to **paralysis,** in fear of all the unexpected things that could happen, and all the unintended consequences that could result, from a particular intervention. The proposed adaptability and sensitivity to emerging new situations may lead to difficulties in planning or, better expressed, must lead to a different conception of what constitutes planning, which is, in itself, challenging (or even threatening) for many fields. The criteria for funding projects or research may not fit comfortably with a complexity approach, and evaluation, already difficult especially in the field of conflict transformation, would require a re-conceptualisation. Pressure for results could act as a disincentive to change project design in the light of emergent processes. There may be the desire to maintain the illusion of control in order to retain the confidence of funders. On the other hand, there are fears that **complexity may be used as an excuse for poor planning, and implementation**, which is a valid concern for funders. In addition, there may be scepticism that the co-operation and co-ordination between different researchers or interveners, (let alone transdisciplinary undertakings) appropriate to working on complex problem domains, will not work due to differing mental models, competing interests and aims, competition for funding, prestige, etc. Such attempts appear, therefore, unrealistic or unfeasible.

#### None of their role of the ballot claims denies the internal link chains of our advantages – the ballot represents a question of whether we should adopt the plan or not – it is irrelevant why or how the public responds – without addressing our internal link chains the worst case scenario of a desensitized public would cease to exist because our impacts determine that they will be dead. We have moved past 1999, this debate does not spillover into the general public – what we are debating about is how the government should act and what actions they should take. Our impact framing is simple – the government should act to avoid global warming. It is irrelevant if we are desensitized to the concept of apocalypse – the point of debate is to contest about policy to determine if a plan is good

**No impact – scenario planning has no downside, just an upside in the instance we’re right, at best they will win that we don’t solve our impacts which is a solvency arg not an impact or theory argument**

**There is a fundamental difference between scenario planning and predictions – the aff engages in the former, means theres no link**

Steven Bernstein et al., “God Gave Physics the Easy Problems: Adapting Social Science to an Unpredictable World,” EJIR, 6, 43, 2000, p. 53-55

One useful alternative approach is the development of scenarios, or narratives with plot lines that map a set of causes and trends in future time. This forward reasoning strategy is based on a notion of contingent causal mechanisms, in opposition to the standard, neo-positivist focus on efficient causes, but with no clear parallel in evolutionary biology. It should not be confused with efforts by some to develop social scientific concepts directly analogous to evolutionary mechanisms (such as variation or selection) in biology to explain, for example, transformations in the international system or institutions, or conditions for optimum performance in the international political economy. Scenarios are not predictions; rather, they start with the assumption that the future is unpredictable and tell alternative stories of how the future may unfold. Scenarios are generally constructed by distinguishing what we believe is relatively certain from what we think is uncertain. The most important ‘’certainties’ are common to all scenarios that address the problem or trend, while the most important perceived uncertainties differentiate one scenario from another. The approach differs significantly from a forecasting tournament or competition, where advocates of different theoretical perspectives generate differential perspectives on a single outcome in the hope of subsequently identifying the ‘best’ or most accurate performer. Rather, by constructing scenarios, or plausible stories of paths to the future, we can identify the different driving forces (a term we prefer to independent variable, since it implies a force pushing in a certain direction rather than what is known on one side of an ‘equals’ sign) and then attempt to combine these forces in logical chains that generate a range of outcomes, rather than single futures. Scenarios make contingent claims rather than point predictions. They reinsert a sensible notion of contingency into theoretical arguments that would otherwise tend toward determinism. Scholars in international relations tend to privilege arguments that reach back into the past and parse out one or two causal variables that are then posited to be the major driving forces of past and future outcomes. The field also favors variables that are structural or otherwise parametric, thus downplaying the role of both agency and accident. Forward reasoning undercuts structural determinism by raising the possibility and plausibility of multiple futures. Scenarios are impressionistic pictures that build on different combinations of causal variables that may also take on different values in different scenarios. Thus it is possible to construct scenarios without pre-existing firm proof of theoretical claims that meet strict positivist standards. The foundation for scenarios is made up of provisional assumptions and causal claims. These become the subject of revision and updating more than testing. A set of scenarios often contains competing or at least contrasting assumptions. It is less important where people start, than it is where they end up through frequent revisions, and how they got there. A good scenario is an internally consistent hypothesis about how the future might unfold; it is a chain of logic that connects ‘drivers’ to outcomes

(Rosell, 1999:126). Consider as an example one plausible scenario at the level of a ‘global future’ where power continues to shift away from the state and towards international institutions, transnational actors and local communities. The state lose its monopoly on the provision of security and basic characteristics of the Westphalian system as we have known it are fundamentally altered. In this setting, key decisions about security, economics and culture will be made by non-state actors. Security may become a commodity that can be bought like other commodities in the global marketplace. A detailed scenario about this transformation would specify the range of changes that are expected to occur and how they are connected to one another. It would also identify what kinds of evidence might support the scenario as these or other processes unfold over the next decade, and what kind of evidence would count against the scenario. This is simply a form of process tracing, or increasing the number of observable implications of an argument, in future rather than past time. Eventually, as in the heuristics of evolutionary biology, future history becomes data. But instead of thinking of data as something that can falsify any particular hypothesis, one should think of it as something capable of distinguishing or selecting the story that was from the stories that might have been.

**Predicting international response to actions is possible – we can understand macro-functioning within systems and predict actions based on that**

Streufert and Satish in 97 (Siegried and Usha, Department of Behavioral Science Pennsylvanian State University, “Complexity Theory: Predictions Based on the Confluence of Science-Wide and Behavioral Theories,” *Journal of Applied Social Psychology*, n. 27, pp. 2096-2116)

G. Predictions and  Explanations G1. Cognitions and behavior at each multidimensional system level are unique and cannot be measured, understood, or predicted on the basis of the elements that comprise that system.G2. **Global functioning is subject to prediction.** G3. Unidimensional cognition and behavior tend to be internally consistent and predictable. Predictions for specific outcomes of unidimensional information processing are possible, as long as the placement of events on existing dimensionality is known.G4. Which among two or more differentiated dimensions may be employed in selecting a specific action or a specific response to the environment may not be subject to reliable prediction. Consequently, the predictive capacity for specific behavioral responses by differentiators tends to be limited, unless the likely placement of events onto a specific available dimension is known. The effectiveness of information processing in specified environments is subject to prediction and depends on the match of environmental complexity with differentiation capacity. G5. Behavioral outcomes of integrated information processing display unique characteristics that were not available at levels of unidimensional or differentiative functioning. Specific actions of integrators often cannot be reliably predicted in advance. The probability of success of integrators in dealing with task environments that vary in fluidity and complexity is subject to prediction. Specific actions in response to complex and fluid environments often cannot be reliably predicted.G6.  Specific actions by high-level integrators in complex and fluid environments are difficult to predict in advance. Prediction of the output quality of high integrative systems is possible via knowledge of (a) system complexity and adaptiveness, (b) the system’s capacity to handle task conditions at specified levels of fluidity and task complexity, and (c) the general direction of network development on the basis of early characteristics (positive feedback).**Prediction can only be probabilistic in nature.** G7.  Predictions for the probable level of adaptation (success) and output quality in handling task environments, as well as predictions for certain characteristics of network development (positive feedback) by persons capable of metacomplex functioning are possible. Prediction of specific actions is not possible unless it is known in advance that the person returns to global or unidimensional processing, and it is  known which global opposites or  which dimension will be selected.G8. **Careful analysis of hierarchical multidimensional systems may permit prediction of specific outcome behaviors, since interrelationships among network elements at each systemic level tend to be fixed, and information processing sequences tend to be predetermined.**

**Empiricism is the only practical and accurate method—prefer it**

Walt 05annu rev polit sci 8 23-48 (“the relationship between theory and policy in international relations”)

Policy decisions can be influenced by several types of knowledge. First, policy makers invariably rely on purely factual knowledge (e.g., how large are the opponent's forces? What is the current balance of payments?). Second, decision makers sometimes employ “rules of thumb”: simple decision rules acquired through experience rather than via systematic study (Mearsheimer 1989).3A third type of knowledge consists of typologies, which classify phenomena based on sets of specific traits. Policy makers can also rely on empirical laws. An empirical law is an observed correspondence between two or more phenomena that systematic inquiry has shown to be reliable. Such laws (e.g., “democracies do not fight each other” or “human beings are more risk averse with respect to losses than to gains”) can be useful guides even if we do not know why they occur, or if our explanations for them are incorrect. Finally, policy makers can also use theories. A theory is a causal explanation—it identifies recurring relations between two or more phenomena and explains why that relationship obtains. By providing us with a picture of the central forces that determine real-world behavior, theories invariably simplify reality in order to render it comprehensible. At the most general level, theoretical IR work consists of “efforts by social scientists…to account for interstate and trans-state processes, issues, and outcomes in general causal terms” (Lepgold & Nincic 2001, p. 5; Viotti & Kauppi 1993). IR theories offer explanations for the level of security competition between states (including both the likelihood of war among particular states and the war-proneness of specific countries); the level and forms of international cooperation (e.g., alliances, regimes, openness to trade and investment); the spread of ideas, norms, and institutions; and the transformation of particular international systems, among other topics. In constructing these theories, IR scholars employ an equally diverse set of explanatory variables. Some of these theories operate at the level of the international system, using variables such as the distribution of power among states (Waltz 1979, Copeland 2000, Mearsheimer 2001), the volume of trade, financial flows, and interstate communications (Deutsch 1969, Ruggie 1983, Rosecrance 1986); or the degree of institutionalization among states (Keohane 1984, Keohane & Martin 2003). Other theories emphasize different national characteristics, such as regime type (Andreski 1980, Doyle 1986, Fearon 1994, Russett 1995), bureaucratic and organizational politics (Allison & Halperin 1972, Halperin 1972), or domestic cohesion (Levy 1989); or the content of particular ideas or doctrines (Van Evera 1984, Hall 1989, Goldstein & Keohane 1993, Snyder 1993). Yet another family of theories operates at the individual level, focusing on individual or group psychology, gender differences, and other human traits (De Rivera 1968, Jervis 1976, Mercer 1996, Byman & Pollock 2001, Goldgeier & Tetlock 2001, Tickner 2001, Goldstein 2003), while a fourth body of theory focuses on collective ideas, identities, and social discourse (e.g., Finnemore 1996, Ruggie 1998, Wendt 1999). To develop these ideas, IR theorists employ the full range of social science methods: comparative case studies, formal theory, large-N statistical analysis, and hermeneutical or interpretivist approaches.

#### **Even if they win that affect is a key motivator for action, it is both insufficient and ineffective in decisionmaking. Prefer our evidence, it is comparative that you cannot exclude focusing on the risk of the advantage**

Marx et al 2007 [Sabine M., “Communication and mental processes: Experiential and analytic processing of uncertain climate information,” Global Environmental Change 17, google it

 Yet, while the engagement of experience-based, affective decision-making can make risk communications more salient and motivate behavior, experiential processing is also subject to its own biases, limitations and distortions, such as the finite pool of worry and single action bias. Experiential processing works best with easily imaginable, emotionally laden material, yet many aspects of climate variability and change are relatively abstract and require a certain level of analytical understanding (e.g., long-term trends in mean temperatures or precipitation). Ideally, communication of climate forecasts should encourage the interactive engagement of both analytic and experiential processing systems in the course of making concrete decisions about climate, ranging from individual choices about what crops to plant in a particular season to broad social choices about how to mitigate or adapt to global climate change. One way to facilitate this interaction is through group and participatory decision-making. As the Uganda example suggests, group processes allow individuals with a range of knowledge, skills and personal experience to share diverse information and perspectives and work together on a problem. Ideally, groups should include at least one member trained to understand statistical forecast information to ensure that all sources of information—both experiential and analytic—are considered as part of the decision-making process. Communications to groups should also try to translate statistical information into formats readily understood in the language, personal and cultural experience of group members. In a somewhat iterative or cyclical process, the shared concrete information can then be re-abstracted to an analytic level that leads to action. Risk and uncertainty are inherent dimensions of all climate forecasts and related decisions. Analytic products like trend analysis, forecast probabilities, and ranges of uncertainty ought to be valuable contributions to stakeholder decision-making. Yet decision makers also listen to the inner and communal voices of personal and collective experience, affect and emotion, and cultural values. Both systems—analytic and experiential—should be considered in the design of climate forecasts and risk communications. If not, many analytic products will fall on deaf ears as decision makers continue to rely heavily on personal experience and affective cues to make plans for an uncertain future. The challenge is to find innovative and creative ways to engage both systems in the process of individual and group decision-making.

## 1AR

### Risk

#### Accidents don’t scare people into paralysis – their argument misreads the fukushima meltdown

**Domenici and Miller, 2012** (Pete, former senator and senior fellow at the Bipartisan Policy Center; Warren F, PhD in Engineering Sciences from Northwestern and recently served as assistant secretary for nuclear energy at the U.S. Department of Energy; “Maintaining U.S. Leadership in Global Nuclear Energy Markets”, Report of the Bipartisan Policy Center’s Nuclear Initiative, July, http://bipartisanpolicy.org/sites/default/files/Leadership%20in%20Nuclear%20Energy%20Markets.pdf)

Internationally, the outlook is quite different: a number of countries intend to grow their nuclear fleet or enter the market for nuclear technology for the first time. **Though enthusiasm for nuclear investments has been somewhat dimmed by the Fukushima accident, there still seems to be substantial international interest** **in the further deployment of nuclear power**. In 2008, when the Nuclear Energy Agency of the Organization for Economic Cooperation and Development (OECD) last conducted its Nuclear Energy Outlook, it analyzed global growth scenarios ranging from 450 to 600 gigawatts of electricity through nuclear capacity by 2050, taking into account existing capacity and new additions. 14 Several years later, the lower-end projection seems more likely given the impacts of the worldwide economic crisis and the impacts of the Fukushima accident. 15 In fact, **Fukushima has caused, appropriately, an international pause as each country with existing or planned nuclear capacity takes time to reassess the safety of its currently operating plants and to review its commitment to future nuclear energy development**. **Some countries**—Germany is a prominent example—**have reversed course on their nuclear energy programs**. In March 2011, Germany’s 17 reactors generated approximately 25 percent of that country’s electricity supply. After Fukushima, the German government immediately shut down eight reactors and reinstated its policy of phasing out nuclear energy altogether by 2022. 16 Italy and Switzerland have made similar decisions to phase out or delay the growth of their nuclear programs. 17 After Fukushima, the Japanese government reversed its policy goal of expanding nuclear power to 30 to 40 percent of electric generation. 18 As of May 2012, all 54 of Japan’s nuclear power reactors had been shut down for scheduled maintenance; due to public opposition, to date, only one of these plants has been able to restart. 19,20 **Several other countries, by contrast, have reaffirmed their intentions to continue expanding or developing a nuclear energy program after Fukushima.** **These countries include China, India, South Korea, and Russia. Together, they are expected to account for 80 percent of new nuclear plant construction globally over the next decade** or longer. China alone accounts for 40 percent of planned new construction globally, with 26 new reactors under development. 21 **Thus, global growth in nuclear energy is still expected to be positive overall.**

#### 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]

### Alt/Perm

#### Institutional changes are easier and more effective than trying to change mindsets

S.F. Sapontzis, “The Nature of the Value of Nature,” CSU-Hayward, Spring 1995, <http://ejap.louisiana.edu/EJAP/1995.spring/sapontzis.1995.spring.html>

[5] Finally, if the motivating concern about the value of nature really is practical, it must be political. In order to overcome the environmental crisis, we must convince peoples and governments to change their behaviors and institutions in the ways necessary to achieve that end. If the peoples and governments which are devastating nature are anthropocentric, then environmentally enlightened anthropocentric arguments have an immediate relevance to political debates concerning environmentally significant practices. In contrast, arguments employing ideas of the overriding, objective value of nature are politically irrelevant until these anthropocentric, nature-devastating peoples and governments come to believe that nature has such value. While neither task is easy, convincing peoples and governments to change their fundamental value systems seems a far more problematic and time-consuming task than convincing them that continuing their nature-devastating practices is contrary to their anthropocentric values. Especially in a time of crisis, pursuing the less problematic and time-consuming course of argument is the course to take to make a real, political difference. Consequently, the practical motivation of overcoming the environmental crisis does not direct us to establish the overriding, objective value of nature; rather, it directs us to develop politically compelling, anthropocentric arguments for environmentalism.