## 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.

#### Extinction outweighs – we can’t come back from it and it affects everyone

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

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

#### Interdependence checks war

Deudney 2009

(Daniel Prof of Pol Sci, and Ikenberry, Prof of International Affairs, and John, Prof of Pol Sci at John Hopkins and Prof of International Affairs at Princeton, “Why Liberal Democracy Will Prevail” <http://www.nwc.navy.mil/events/csf/readings/AutocraticRevival.aspx>, CMR)

This **bleak outlook is based on** an exaggeration of recent developments **and ignores powerful** countervailing factors and **forces**. Indeed, contrary to what the revivalists describe, **the most striking features of the** contemporary **international landscape are** the intensification of economic **globalization**, thickening **institutions**, and shared problems of **interdependence**. The overall structure of the international system today is quite unlike that of the nineteenth century. Compared to older orders, the **contemporary liberal**-centered international **order provides** a set of **constraints** and opportunities — of pushes and pulls — **that** reduce the likelihood of severe conflict while creating strong imperatives for cooperative problem solving. Those invoking the nineteenth century as a model for the twenty-first also fail to acknowledge the extent to which war as a path to conflict resolution and great-power expansion has become largely obsolete. Most important, **nuclear weapons have transformed great-power war** from a routine feature of international politics **into** an exercise in national suicide. With all of the great powers possessing nuclear weapons and ample means to rapidly expand their deterrent forces, **warfare** among these states **has** truly **become** an option of **last resort**. The prospect of such great losses has instilled in the great powers a level of caution and restraint that effectively precludes major revisionist efforts. Furthermore, the diffusion of small arms and the near universality of nationalism have severely limited the ability of great powers to conquer and occupy territory inhabited by resisting populations (as Algeria, Vietnam, Afghanistan, and now Iraq have demonstrated). Unlike during the days of empire building in the nineteenth century, states today cannot translate great asymmetries of power into effective territorial control; at most, they can hope for loose hegemonic relationships that require them to give something in return. Also unlike in the nineteenth century, today the density of trade, investment, and production networks across international borders raises even more the costs of war. A Chinese invasion of Taiwan, to take one of the most plausible cases of a future interstate war, would pose for the Chinese communist regime daunting economic costs, both domestic and international. Taken together**, these changes** in the economy of violence **mean** that **the international system is** far more primed for peace than the autocratic revivalists acknowledge.

**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.

#### The notion that claims of absolute truth lead to totalitarianism is false—our framework does embrace some truths contingently, but also allows for skepticism about those truths—debate enables us to test the validity of those claims

Fierlbeck 1994Dalhousie University, 1994 (Katherine, History and Theory, v.33 n.1, ebsco)

But the acceptance of "ultimate unknowability" is even more relevant within the context of normative issues than it is within that of mere explanation.[5] The claim to be able scientifically to determine what "justice" is, argues Lyotard, exacerbates the likelihood of political terror, as those who promulgate such an "accurate" and incontestable account of justice have a seemingly powerful justification to suppress any competing accounts. In this way, some post-modernists have linked scientific methodology with the political inclination to totalitarianism: for both assume that there is, ultimately, only one correct answer.[6] By refusing the metaphysical mindset that the One Great Truth must be "out there," asserts Lyotard, the possibility of populations accepting a totalitarian regime decreases. But this refusal does not oblige us to embrace a starkly relativist position, for the argument is not that "there are all sorts of justice" which we cannot compare and evaluate, but rather that "there is a necessity that we keep discussion as to the nature of the just open."[7] To accuse "liberalism" of encouraging the likelihood of totalitarianism because of its links with Enlightenment rationalism is, or course, a very selective reading of liberalism. While one must admit that liberalism has almost as many shapes and permutations as does post-modernism itself, it is also fair to suggest that the usual understanding of liberalism is grounded firmly upon John Stuart Mill's classical declaration that political freedom is essential because no one person's opinion is infallible. "Complete liberty of contradicting and disproving our opinion," wrote Mill, "is the very condition which justifies us in assuming its truth for purposes of action; and on no other terms can a being with human faculties have any rational assurance of being right."[8] While modern scientific methodology and the political protection of individual autonomy may both have had a common genesis within the Enlightenment era, there is simply no persuasive evidence that an alarming causal link between them will allow the former to extinguish the latter. Skepticism and pragmatism are invaluable attributes, both intellectually and politically. And, to the extent that post-modernism presents itself as a sober challenge to the excesses of metaphysical assumptions (a challenge that requires us to explain why theoretical reasoning [empiricism, rationality, universalism, causality] is an apt or accurate means to investigate human life), post-modernism can enrich the study of who we are, and why we are that way. And it can restrain the political abuses of power which are built upon the overwhelming authority of reason. But skepticism and pragmatism are not unique to post-modernist thought; they are frequently to be found within many variants of "liberalism" itself (such as that of Hayek). From a very cynical point of view, it might seem that post-modernism becomes more compelling the better it can misrepresent the "liberal" character of modern Western thought, culture, and political organization.

**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

### Risk

#### I’ll start with the squassoni evidence they read- it obviously answers itself – also the cohen evidence says that nuclear power is cheap enough to replace coal now

**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 indict of the Bostrom evidence is not applicable – obviously we think that understanding the probability of impacts is important – we just think that the science of global warming is so conclusive that the probability of the impact is extremely high

**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

#### Their solvency arguments are ridiculous – the squo is how the aff describes it

Riecke, 2004 (Henning, Resident Fellow at the German Council on Foreign Relations, “The Crisis in Halting WMD Proliferation”, Translantic Internationale Politik, https://ip-journal.dgap.org/en/article/getFullPDF/22996)

Today we can distinguish three tendencies in American nonproliferation policy that could undermine the principles of traditional nonproliferation policy. First, export controls are favored over treaties and verification. This is not a new tendency, but in the previous history of nonproliferation regimes, export controls and withholding of technology have been balanced by other principles, such as research cooperation. Now, however, the increasingly diffuse trade in sensitive and dual-use technologies has left those export control agreements among likeminded industrialized states accounting for only a part of all dangerous shipments. Those between proliferation candidates remain concealed. For decades the United States has been trying to keep sensitive reprocessing and enrichment technology out of the hands of developing nations; in the 1990s these withholding strategies were tailored directly to the handful of “rogue states” that Washington identified as threats. The latest example of Washington’s abiding interest in novel withholding mechanisms is the US Proliferation Security Initiative from spring of 2003. Together with other provider countries, the United States is exploring the possibilities of enforcing multilateral agreements by detecting and intercepting exports of sensitive technologies by land, sea, or air before they reach their destinations. Export restrictions are in the interest of both the US and other industrialized nations and will surely remain a component of US nonproliferation policy. The second trend is a dismissal of present multilateral treaties that borders on contempt. During the administration of George W. Bush a series of open flouting of treaties have laid bare the American paradigm change. These include the administration’s unwillingness to submit the Comprehensive Test Ban Treaty for ratification; the failure, thanks to US intransigence, of negotiations over a biological weapons verification protocol; the obstructionist US stance at the United Nations Conference on Illicit Trade in Small Arms and Light Weapons in summer of 2001 that forced the delegates to reach an unsatisfactory conclusion; and, finally, America and Russia’s withdrawal from the Anti-Ballistic Missile Treaty. There were understandable reasons for each of these individual steps, of course. Yet they also demonstrate that the United States considers itself better positioned to counteract WMD proliferation by its own political and military superiority than by commitments to multilateral treaties. Such ad hoc measures have their own drawbacks. They may be more efficient, but they also make American policy more erratic. The third tendency is greater dependence on military force. The US national doctrine for fighting the proliferation of weapons of mass destruction from September 2002 names three pillars of nonproliferation policy: military-based counter-proliferation, traditional nonproliferation, and “consequence management,” or preparation for an attack by weapons of mass destruction. Military elements are at the top of this list. They include components such as interdiction, the interception of sensitive technology shipments, deterrence, and defense against WMD attack. Defense includes the controversial elements of preemption, or military strikes against WMD programs even before a direct threat exists, and an anti-ballistic missile defense. Plans for developing and using even nuclear weapons as instruments of preemptive military strikes must also be seen in this context, regardless of the signal they send to non-nuclear powers of the value of such weapons. The military bias of American nonproliferation policy could lead to a split between supporters and opponents of military preemption in nonproliferation policy. The states of the European Union now also include military coercion—under the terms of the United Nations Charter— among the vital instruments of nonproliferation policy. Yet they strictly link these measures to the earlier work of the institutions.

#### **Even if they win that affect is a key motivator for action, it is both insufficient and ineffective in decision-making. 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.

**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.

### 2AC

#### Framework – the aff should get to weigh the implementation of the plan vs a competitive alternative – this is best

#### A Predictability – the rez says USFG so it is most predictable that we should defend that – anything else moots the 1AC and makes fair debate impossible

#### B Education – Debates about policy solutions to global warming are necessary to effective education that is most able to effectuate change – that’s the Hanson evidence – He makes a uniqueness claim that public activism to prevent global warming is low now – only a risk of aff offense

#### C The necessity of a competitive alt means that they should not be allowed to fiat utopia – they should defend a mechanism for alt solvency – anything short of that means that we literally cannot win offense to the alt – makes debate impossible – this is not to say they never get alternative fiat but that they must defend a predictable mechanism

#### Decisionmaking skills and engagement with the state energy apparatus prevents energy technocracy and actualizes radical politics

Hager, professor of political science – Bryn Mawr College, 1992

(Carol J., “Democratizing Technology: Citizen & State in West German Energy Politics, 1974-1990” *Polity*, Vol. 25, No. 1, p. 45-70)

During this phase, the citizen initiative attempted to overcome its defensive posture and implement an alternative politics. The strategy of legal and technical challenge might delay or even prevent plant construction, but it would not by itself accomplish the broader goal on the legitimation dimension, i.e., democratization. Indeed, it worked against broad participation. The activists had to find a viable means of achieving change. Citizens had proved they could contribute to a substantive policy discussion. Now, some activists turned to the parliamentary arena as a possible forum for an energy dialogue. Until now, parliament had been conspicuously absent as a relevant policy maker, but if parliament could be reshaped and activated, citizens would have a forum in which to address the broad questions of policy-making goals and forms. They would also have an institutional lever with which to pry apart the bureaucracy and utility. None of the established political parties could offer an alternative program. Thus, local activists met to discuss forming their own voting list. These discussions provoked internal dissent. Many citizen initiative members objected to the idea of forming a political party. If the problem lay in the role of parliament itself, another political party would not solve it. On the contrary, parliamentary participation was likely to destroy what political innovations the extraparliamentary movement had made. Others argued that a political party would give the movement an institutional platform from which to introduce some of the grassroots democratic political forms the groups had developed. Founding a party as the parliamentary arm of the citizen movement would allow these groups to play an active, critical role in institutionalized politics, participating in the policy debates while retaining their outside perspective. Despite the disagreements, the Alternative List for Democracy and Environmental Protection Berlin (AL) was formed in 1978 and first won seats in the Land parliament with 7.2 percent of the vote in 1981.43 The founders of the AL were encouraged by the success of newly formed local green parties in Lower Saxony and Hamburg,44 whose evolution had been very similar to that of the West Berlin citizen move-ment. Throughout the FRG, unpopular administrative decisions affect-ing local environments, generally in the form of state-sponsored indus-trial projects, prompted the development of the citizen initiative and ecology movements. The groups in turn focused constant attention on state planning "errors," calling into question not only the decisions themselves, but also the conventional forms of political decision making that produced them.45 Disgruntled citizens increasingly aimed their critique at the established political parties, in particular the federal SPD/ FDP coalition, which seemed unable to cope with the economic, social, and political problems of the 1970s. Fanned by publications such as the Club of Rome's report, "The Limits to Growth," the view spread among activists that the crisis phenomena were not merely a passing phase, but indicated instead "a long-term structural crisis, whose cause lies in the industrial-technocratic growth society itself."46 As they broadened their critique to include the political system as a whole, many grassroots groups found the extraparliamentary arena too restrictive. Like many in the West Berlin group, they reasoned that the necessary change would require a degree of political restructuring that could only be accomplished through their direct participation in parliamentary politics. Green/alternative parties and voting lists sprang up nationwide and began to win seats in local assemblies. The West Berlin Alternative List saw itself not as a party, but as the parliamentary arm of the citizen initiative movement. One member explains: "the starting point for alternative electoral participation was simply the notion of achieving a greater audience for [our] own ideas and thus to work in support of the extraparliamentary movements and initia-tives,"47 including non-environmentally oriented groups. The AL wanted to avoid developing structures and functions autonomous from the citizen initiative movement. Members adhered to a list of principles, such as rotation and the imperative mandate, designed to keep parliamentarians attached to the grassroots. Although their insistence on grassroots democracy often resulted in interminable heated discussions, the participants recognized the importance of experimenting with new forms of decision making, of not succumbing to the same hierarchical forms they were challenging. Some argued that the proper role of citizen initiative groups was not to represent the public in government, but to mobilize other citizens to participate directly in politics themselves; self-determination was the aim of their activity.48 Once in parliament, the AL proposed establishment of a temporary parliamentary commission to study energy policy, which for the first time would draw all concerned participants together in a discussion of both short-term choices and long-term goals of energy policy. With help from the SPD faction, which had been forced into the opposition by its defeat in the 1981 elections, two such commissions were created, one in 1982-83 and the other in 1984-85.49 These commissions gave the citizen activists the forum they sought to push for modernization and technical innovation in energy policy. Although it had scaled down the proposed new plant, the utility had produced no plan to upgrade its older, more polluting facilities or to install desulfurization devices. With prodding from the energy commission, Land and utility experts began to formulate such a plan, as did the citizen initiative. By exposing administrative failings in a public setting, and by producing a modernization plan itself, the combined citizen initiative and AL forced bureaucratic authorities to push the utility for improvements. They also forced the authorities to consider different technological solutions to West Berlin's energy and environmental problems. In this way, the activists served as technological innovators. In 1983, the first energy commission submitted a list of recommendations to the Land parliament which reflected the influence of the citizen protest movement. It emphasized goals of demand reduction and efficiency, noted the value of expanded citizen participation and urged authorities to "investigate more closely the positive role citizen participation can play in achieving policy goals."50 The second energy commission was created in 1984 to discuss the possibilities for modernization and shutdown of old plants and use of new, environmentally friendlier and cheaper technologies for electricity and heat generation. Its recommendations strengthened those of the first commission.51 Despite the non-binding nature of the commissions' recommendations, the public discussion of energy policy motivated policy makers to take stronger positions in favor of environmental protection. III. Conclusion The West Berlin energy project eventually cleared all planning hurdles, and construction began in the early 1980s. The new plant now conforms to the increasingly stringent environmental protection requirements of the law. The project was delayed, scaled down from 1200 to 600 MW, moved to a neutral location and, unlike other BEWAG plants, equipped with modern desulfurization devices. That the new plant, which opened in winter 1988-89, is the technologically most advanced and environmen-tally sound of BEWAG's plants is due entirely to the long legal battle with the citizen initiative group, during which nearly every aspect of the original plans was changed. In addition, through the efforts of the Alter-native List (AL) in parliament, the Land government and BEWAG formulated a long sought modernization and environmental protection plan for all of the city's plants. The AL prompted the other parliamentary parties to take pollution control seriously. Throughout the FRG, energy politics evolved in a similar fashion. As Habermas claimed, underlying the objections against particular projects was a reaction against the administrative-economic system in general. One author, for example, describes the emergence of two-dimensional protest against nuclear energy: The resistance against a concrete project became understood simul-taneously as resistance against the entire atomic program. Questions of energy planning, of economic growth, of understanding of democracy entered the picture. . . . Besides concern for human health, for security of conditions for human existence and protec-tion of nature arose critique of what was perceived as undemocratic planning, the "shock" of the delayed public announcement of pro-ject plans and the fear of political decision errors that would aggra-vate the problem.52 This passage supports a West Berliner's statement that the citizen initiative began with a project critique and arrived at *Systemkritik*.53 I have labeled these two aspects of the problem the public policy and legitima-tion dimensions. In the course of these conflicts, the legitimation dimen-sion emergd as the more important and in many ways the more prob-lematic. Parliamentary Politics In the 1970s, energy politics began to develop in the direction Offe de-scribed, with bureaucrats and protesters avoiding the parliamentary channels through which they should interact. The citizen groups them-selves, however, have to a degree reversed the slide into irrelevance of parliamentary politics. Grassroots groups overcame their defensive posture enough to begin to formulate an alternative politics, based upon concepts such as decision making through mutual understanding rather than technical criteria or bargaining. This new politics required new modes of interaction which the old corporatist or pluralist forms could not provide. Through the formation of green/alternative parties and voting lists and through new parliamentary commissions such as the two described in the case study, some members of grassroots groups attempted to both operate within the political system and fundamentally change it, to restore the link between bureaucracy and citizenry. Parliamentary politics was partially revived in the eyes of West German grassroots groups as a legitimate realm of citizen participation, an outcome the theory would not predict. It is not clear, however, that strengthening the parliamentary system would be a desirable outcome for everyone. Many remain skeptical that institutions that operate as part of the "system" can offer the kind of substantive participation that grass-roots groups want. The constant tension between institutionalized politics and grassroots action emerged clearly in the recent internal debate between "fundamentalist" and "realist" wings of the Greens. Fundis wanted to keep a firm footing outside the realm of institutionalized politics. They refused to bargain with the more established parties or to join coalition governments. Realos favored participating in institutionalized politics while pressing their grassroots agenda. Only this way, they claimed, would they have a chance to implement at least some parts of their program. This internal debate, which has never been resolved, can be interpreted in different ways. On one hand, the tension limits the appeal of green and alternative parties to the broader public, as the Greens' poor showing in the December 1990 all-German elections attests. The failure to come to agreement on basic issues can be viewed as a hazard of grass-roots democracy. The Greens, like the West Berlin citizen initiative, are opposed in principle to forcing one faction to give way to another. Disunity thus persists within the group. On the other hand, the tension can be understood not as a failure, but as a kind of success: grassroots politics has not been absorbed into the bureaucratized system; it retains its critical dimension, both in relation to the political system and within the groups themselves. The lively debate stimulated by grassroots groups and parties keeps questions of democracy on the public agenda. Technical Debate In West Berlin, the two-dimensionality of the energy issue forced citizen activists to become both participants in and critics of the policy process.

#### Inherent equality of all beings requires utilitiarianism

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

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

#### Extinction outweighs – Warming affects the entire planet and makes it impossible to live – we can come back from any perceived loss of value – Also – the 1AC does not create an ignorance toward the structural violence of the 1AC – the alt to focusing on Climate Change perpetuates structural violence because the neoliberal nations are able to not focus on warming while populations in Africa and Latin America are left as disposable

#### Prior questions fail and makes effective politics impossible

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

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

### Links

#### Their Warming arguments certainly don’t link to the conception of energy consumption of the 1AC – Yes imperialism has taken form in attempting to control how energy is produced – we clearly say that’s bad – we shouldn’t strike people who want to develop their own enrichment and reprocessing tech

#### Their mining Link argument – again not about the Aff – the reason mining is bad is that we have stripped the land of indigenous persons and taken resources for our own – the 1AC takes the stance that indigenous persons across the globe should be allowed to enrich and reprocess their own resources

#### Minimal mining impact

Bosselman, ‘7

[Fred, Professor of Law Emeritus, Chicago-Kent College of Law, “THE NEW POWER GENERATION: ENVIRONMENTAL LAW AND ELECTRICITY INNOVATION: COLLOQUIUM ARTICLE: THE ECOLOGICAL ADVANTAGES OF NUCLEAR POWER,” 15 N.Y.U. Envtl. L.J. 1, Lexis]

1. The Amount of Uranium Used Is a Tiny Fraction of the Coal Used The mining of uranium admittedly can create some of the same adverse ecological impacts as the mining of coal. [196](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n196) The difference, however, is that while the coal-fired power plants in the United States used slightly over a billion tons of coal in 2005, [197](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n197) nuclear power plants used only 66 million pounds of uranium oxide. [198](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n198) Thus the scale of the impact from uranium mining is not in the same ball park as the impact of coal mining. [199](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n199) Virtually all uranium mines currently operating in the United States are underground mines or use the in situ leaching method, [200](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n200) which both have much less impact on the environment than open pit uranium mining. [201](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n201) Moreover, coal-fired power plants produce [\*39] half the electricity in the United States while nuclear power plants produce one-fifth. [202](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n202) In addition, unlike coal, uranium used in power plants can be recycled and used again. [203](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n203) At the present time, the United States does not reprocess its nuclear fuel, [204](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n204) but countries such as Great Britain, France, Japan, and Russia do so on a regular basis. [205](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n205) The policy issues related to reprocessing are beyond the scope of this article, but it should be noted that the possibility of future reprocessing further reduces the slim risk that supplies of uranium will run out, [206](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n206) despite the fact that the known uranium resources would provide enough fuel to support four times the current amount of worldwide nuclear electricity generation for the next 80 years. [207](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n207) Furthermore, uranium is not the only element that can be used as nuclear fuel; India is producing nuclear fuel from thorium, of which it has ample supplies. [208](http://www.lexis.com/research/retrieve?_m=4a9f74e9d68358dde5b1da7c76fcc08d&docnum=49&_fmtstr=FULL&_startdoc=1&wchp=dGLbVlz-zSkAB&_md5=b940f69f179ebb657dc94d1baf8c0fbd#n208)

### Perm

#### Perm do the plan and open ourselves up to violence

#### Our Fierlbeck evidence makes a perm solvency argument that isn’t answered – Liberalism does not necessitate violence – pessimism and debate are critical to open up states for progressive action

#### And the discourse of the status quo is not neutral and neither is the discourse of the aff – the way that nuclear development is talked about is steeped in orientalism – the alternative doesn’t resolve the ways in which the third world is presented as irrational

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

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

#### Your idealist rejection of democracy is irrelevant – those channels of power are key to effective resistance and reform

Ramirez 2004 [Steven A., Professor ofLaw, Washburn University School ofLaw; Director, Washburn Business & Transactional Law Center Games CEOs Play and Interest Convergence Theory: Why Diversity Lags in America's Boardrooms and What To Do About **It,** *61 WASH* & *LEE L. REV* 1583 *(2004)*

The United States is a capitalist democracy. Consequently, the law in the United States responds to political and economic power. The American legal system is also a highly diffused system. Therefore, reformers must orchestrate political and economic power to bring pressure to bear upon the specific legal actors vested with responsibility over a particular issue if they wish to achieve durable reform. Interest convergence theory is the key to reform and progress in any area of law from race to corporate governance. As Derrick Bell has correctly stated: "Further progress to fulfill the mandate of*Brown* is possible to the extent that the divergence of racial interests can be avoided or minimized. ,,162 The converse of Bell's observation is equally true: To the extent interest convergence is maximized, reform opportunities are maximized. This Article seeks to extend interest convergence theory to its logical endsspecifically, to include the possibility that interests can be aligned to further the goal ofreform, racial or otherwise. This possibility can come to fruition when individuals seeking specific reforms can convince specific individuals with economic or political power over that specific issue. This is essentially what the NAACP achieved in the *Brown* decision. This alignment of interests was achieved in the *Grutter* opinion fifty years later, where it succeeded in securing qualified support for affirmative action from a fundamentally conservative Court. It also explains Richard Painter's efforts to relandscape professional responsibility for attorneys representing publicly held companies. In each case, economic and political power was brought to bear on lawmakers vested with specific power over a specific issue.

### Alt

#### Violence fails – only ensures the systems of oppression respond more violently

Martin 08 (Brian, How nonviolence is misrepresented, Published in Gandhi Marg, volume 30, number 2, July-September 2008, pp. 235-257 http://www.bmartin.cc/pubs/08gm2.html)

2. Violence often alienates potential supporters. Opponents may dig in and resist more strenuously. A psychological perspective called correspondent inference theory helps explain why. People often infer someone else's motivations by looking at the consequences of their actions. If the actions lead to people dying, the inference is that activists are motivated to kill - not to liberate, which might be their actual motivation. This theory helps explain why terrorists' motives are so widely misinterpreted.[12] Violence targets individuals, but harming individuals is not an effective way to challenge systems of oppression. Killing a politician does not undermine the state, because politicians can be replaced, sometimes with ones who are worse. Furthermore, a person who is a politician has other roles, such as parent, friend and musician. Violence, by not discriminating between roles, destroys much that is good, rather than targeting the damaging roles and building on the beneficial ones.[13] When challengers use violence, this gives greater legitimacy to state violence against them. The jiu-jitsu effect is reduced, even when the state uses far more violence than challengers.

### Liberalism

#### Liberalism isn’t going away – our Duedney evidence makes two arguments – 1. Liberalism is inevitable – there are major incentives for countries to continue engaging in the system because of trade interdependence and 2. Liberalism stabilizes international relations – trade disincentivizes wars for land and resources – allows us to focus not on conflict but on environmental problems – the alternative refocuses the debate to conflict in the liberal order which prevents the ability to solve warming

#### Contingent truth – we can understand that actions have responses and use empirics to inform how we respond to that

#### Their rejection of liberal rationality is coopted by conservatives and makes all forms of violence worse

Sherry 96 – Professor of Civil Rights and Civil Liberties Law and the University of Minnesota (Suzanna, Georgetown Law Journal, “The Sleep of Reason,” February 1996, 84 Geo. L.J. 453

We all know the Enlightenment story, but this article recounts -- and criticizes -- the rather surprising ending that is currently in vogue. Once upon a time, reason replaced faith as the guiding epistemology. In response, religion became largely rational itself, questioning the sharp distinction between faith and reason. [n6](http://www.lexisnexis.com.ezproxy.lib.ou.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1285602121837&returnToKey=20_T10208434889&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.466563.51045007084" \l "n6) Despite occasional upsurges, religiosity of the traditional, pre-Enlightenment, antirational kind gradually diminished in the Western world. Originally pure and acontextual, reason eventually came to encompass pragmatism or practical reason. [n7](http://www.lexisnexis.com.ezproxy.lib.ou.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1285602121837&returnToKey=20_T10208434889&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.466563.51045007084" \l "n7) For good or ill, the reason and empiricism of the Enlightenment -- modified and expanded by later thinkers -- reigned supreme. Occasional critics were discounted as primitive, naive, or uneducated, and rarely gained a foothold in universities. [n8](http://www.lexisnexis.com.ezproxy.lib.ou.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1285602121837&returnToKey=20_T10208434889&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.466563.51045007084" \l "n8)The first ripple in this once uncontroversial ending came from French postmodernists, whose ideas were quickly adopted in the 1980s by legal academics on the left. Critical legal scholars, radical feminists, critical race theorists, and gay and lesbian theorists [n9](http://www.lexisnexis.com.ezproxy.lib.ou.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1285602121837&returnToKey=20_T10208434889&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.466563.51045007084" \l "n9) began to attribute the Enlightenment epistemology to powerful straight white men, to suggest that others might have different and equally valid epistemologies, and to argue for a sort of epistemological pluralism. This approach has more recently been adopted by conservative scholars arguing that we ought to afford religion a more central place in our politics and culture. Enlightenment reason, they suggest, is just one of a number of alternative epistemologies, and there is no justification for privileging it over religious ways of knowing such as faith and revelation.Nor is this all merely abstract philosophical speculation: both the radicals and  [\*455]  the religionists use their critique of the Enlightenment to advocate very real legal change. Questions of epistemology are thus made central to issues of public policy, and the question becomes what sort of epistemology we should use in governance. After first describing the surprising congruence between the left and the right, I will suggest in this article that our history, the basic structure of our government, and serious practical considerations all point to Enlightenment epistemology as the one best suited for public governance.

## 1AR

### Expertism

#### Technocracy and scientific expertise are good and turn the K – they direct consumers towards most efficient outcomes and eliminate unnecessary production

Chai 5 ¶ (Andreas, Evolutionary Economics Unit, Max Planck Institute for Research into Economic Systems, “Menger’s theory of ‘imaginary goods’ and the¶ historical emergence of British medical experts”, http://www.tagung05.uni-bonn.de/Papers/Chai.pdf)

For Menger, all things are subject to the laws of cause and effect (Menger 1950:51). But which cause and which effect? A fundamental prerequisite to understanding why people consume certain things is to first comprehend how they learn to associate these things to certain consequences, and how the strength of such associations change over time. Rather than define a good as anything that is exchanged on a market, he defined a good as anything that can be causally associated with the servicing of human wants (Menger 1950:2). In this way, what is and what is not a good is not constant or set over time, rather things can loose their ‘goods characteristics’ according to what consumers know, learn and do (Menger, 1950:56). Acts of consumption can become complex since a thing does not need to serve a human want directly in order to be considered a good, rather it can become a ‘indirect good’ by serving as a input into a transformation process which results in the production of final goods (Menger, 1950). This is problematic because whether or not such a indirect good is used successfully depends on not only its objective characteristics but on the consumers ability to use and transform it as well as the other higher order goods that are simultaneously used in the transformation. For example, a consumer may know how to operate a mobile telephone which may be in perfect working order, but if she is outside the network’s range, the phone is useless to the consumer. Similarly, if the consumer does not have the adequate knowledge to engage in a mobile phone contract, the phone will remain a ‘thing’ rather than a ‘good’. Menger also recognized that the duration it takes to consume is not just a costly input, but also complicates the act of discerning what the causal associations are between goods and observed effects (Menger, 1950:68). Hence, complexity increases the possibility of consumers making errors and mistakes in their decisions. In this way, the degree of complexity which the consumer faces exponentially increases the more goods she uses and the more knowledge and command these require, as well as the time taken between engaging in a transformation and observing its results. Juxtaposing his approach to both the neoclassical and institutional methods of studying consumption change, there are simultaneously some interesting similarities and notable differences to observe. Both Lancaster (Lancaster, 1966) as well as Stigler and Becker (Stigler and Becker, 1977) make an important start in capturing the transformative nature of consumption by specifying that utility is not a direct function of market goods consumed, but rather a function of final goods which are produced from market goods. This enables scholars to study how consumption patterns change with the introduction of new goods (Bianchi, 2002). However some problems still exist. While a transformation does occur, it is not one that addresses how a thing becomes a good, since the model starts with specifying given goods that can be changed with full certainty into final goods (Ruprecht, 2002). Furthermore, these models do not fully take into account the impact of increasing complexity that results from an increase in the number of inputs used. Other than perhaps affecting how much time it takes to consume, the actual number of inputs used, their complexity and how they relate to each other are not explicitly accounted for. Indeed the way such models treat time as just another input is itself questionable (Steedman, 2001). In this sense Menger seriously challenges economists to study consumption as a phenomena that is not just related to price and income effects, but also related to how consumer actually learn to consume and make associations between goods and their effects. In comparison to institutionalist approaches, Menger’s systematic examination of consumption via the law of cause and effect bring into question their tendency to simply rely on social influences to explain the nature of consumer behavior (Trigg, 2001). Yet at the same time, Menger does recognize that certain institutions do play an important role in guiding consumer behavior. Specifically, he suggests that the scientific knowledge that comes with economic development improves consumer’s welfare by promoting those consumption technologies which are in some sense relatively more ‘objectively accurate’(Menger, 1950:53). Such progress will essentially wipe out those goods that are consumed on pretenses that are essentially false

, such as aphrodisiacs, love potions and amulets. These he labeled ‘imaginary goods’ and argued that they occur when 1) attributes are erroneously ascribed to things that do not really posses them, or 2) when non-existent human needs are mistakenly thought to exist. Notably, in the first category he mentions ‘the majority of medicines administered to the sick by peoples of early civilization’ and in the second category he mentions ‘medicines for diseases that do not actually exist’ (Menger 1950:53). Without doubt, experts play an important role in influencing contemporary consumption patterns. Studying how consumers react to information from other consumers and experts has been widely explored both in the optimizing framework (Akerlof, 1980;Banerjee, 1993;Bikhchandani et al., 1992;Conlisk, 1980;Nelson, 1970;Rosen, 1981) as well as from a more heterodox perspective (Cowan et al., 1997;Mokyr, 2002;Morlacchi, 2004;Rogers, 1962). Beyond economics, many scholars point out that how agents coordinate learning is not only vital to understanding economic behavior, but also to accounting for how civilizations evolve and function in general (Bandura, 1986;Richerson and Boyd, 2004). Continuing Menger’s concern for how consumers cope in increasingly complex environments, it has been postulated that the growing predominance of service industries reflects a greater role for experts in forming ‘low level consumption preferences’ (Earl and Potts, 2004). Consequently such conditions have been argued to both stimulate and require greater coordination between supply and demand (Langlois and Cosgel, 1998;Scitovsky, 1976).