## 1AC

### Contention One is Warming

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

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

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

#### Fossil fuels are key

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

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

#### 4 degree warming is inevitable with current carbon usage trends – only emissions reductions solve

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

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

#### Not too late – every reduction key

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

#### Global warming destroys global agriculture– resulting in mass starvation

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

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

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

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

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

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

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

**Extinction**

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

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

### Plan Text

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

### Contention Two: Solvency

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

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

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

#### Statutory restrictions control the perception of preemption

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

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

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

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

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

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

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

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

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

Comeau 3-12

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

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

#### Other sources fail

Cohen 2012

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

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

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

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

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

### Contention Three: Warming Outweighs

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

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

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

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

Fettweis 2006

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

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

#### No nuclear war – deterrence

Tepperman 2009

[Deputy Editor at Newsweek. Frmr Deputy Managing Editor, Foreign Affairs. LLM, i-law, NYU. MA, jurisprudence, Oxford. (Jonathan, Why Obama Should Learn to Love the Bomb, <http://jonathantepperman.com/Welcome_files/nukes_Final.pdf>, CMR]

The argument that nuclear weapons can be agents of peace as well as destruction rests on two deceptively simple observations. First, nuclear weapons have not been used since 1945. Second, there’s never been a nuclear, or even a nonnuclear, war between two states that possess them. Just stop for a second and think about that: it’s hard to overstate how remarkable it is, especially given the singular viciousness of the 20th century. As Kenneth Waltz, the leading “nuclear optimist” and a professor emeritus of political science at UC Berkeley puts it, “We now have 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” To understand why—and why the next 64 years are likely to play out the same way—you need to start by recognizing that **all states are rational** on some basic level. **Their leaders** may be stupid, petty, venal, even evil, but they **tend to do things** only when **they’re** pretty **sure they can get away with** them. Take war: a country will start a fight only when it’s almost certain it can get what it wants at an acceptable price. Not even Hitler or Saddam waged wars they didn’t think they could win. The problem historically has been that leaders often make the wrong gamble and underestimate the other side—and millions of innocents pay the price. **Nuclear weapons** change all that by **mak**ing **the costs of war** obvious, inevitable, and unacceptable. Suddenly, when both sides have the ability to turn the other to ashes with the push of a button— and everybody knows it—the basic math shifts. **Even the craziest** tin-pot dictator is forced to **accept** that **war** with a nuclear state **is unwinnable** and thus not worth the effort. As Waltz puts it, “Why fight if you can’t win and might lose everything?” Why indeed? The iron logic of deterrence and mutually assured destruction is so compelling, it’s led to what’s known as the nuclear peace: the virtually unprecedented stretch since the end of World War II in which all the world’s major powers have avoided coming to blows. They did fight **proxy wars**, ranging from Korea to Vietnam to Angola to Latin America. But these **never matched** the furious destruction of full-on, **great-power war** (World War II alone was responsible for some 50 million to 70 million deaths). And since the end of the Cold War, such bloodshed has declined precipitously. Meanwhile, the nuclear powers have scrupulously avoided direct combat, and there’s very good reason to think they always will. There have been some near misses, but a close look at these cases is fundamentally reassuring—because in each instance, very different leaders all came to the same safe conclusion. Take the mother of all nuclear standoffs: the Cuban missile crisis. For 13 days in October 1962, the United States and the Soviet Union each threatened the other with destruction. But both **countries** soon **stepped back** from the brink **when they recognized** that **a war would** have **mean**t **curtains** for everyone. As important as the fact that they did is the reason why: Soviet leader Nikita Khrushchev’s aide Fyodor Burlatsky said later on, “It is impossible to win a nuclear war, and both sides realized that, maybe for the first time.” The record since then shows the same pattern repeating: **nuclear** armed **enemies** slide toward war, then **pull back**, always for the same reasons. The best recent example is India and Pakistan, which fought three bloody wars after independence before acquiring their own nukes in 1998. Getting their hands on weapons of mass destruction didn’t do anything to lessen their animosity. But it did dramatically mellow their behavior. Since acquiring atomic weapons, the two sides have never fought another war, despite severe provocations (like Pakistani-based terrorist attacks on India in 2001 and 2008). They have skirmished once. But during that flare-up, in Kashmir in 1999, both countries were careful to keep the fighting limited and to avoid threatening the other’s vital interests. Sumit Ganguly, an Indiana University professor and coauthor of the forthcoming India, Pakistan, and the Bomb, has found that on both sides, officials’ thinking was strikingly similar to that of the Russians and Americans in 1962. The prospect of war brought Delhi and Islamabad face to face with a nuclear holocaust, and leaders in each country did what they had to do to avoid it.

#### Miscalc is impossible

Quinlan 2009

(Sir Michael, visiting professor at King's College London, Permanent Under-Secretary at the Ministry of Defence and former senior fellow at the International Institute of Strategic Studies, “Thinking About Nuclear Weapons: Principles, Problems, Prospects,” Oxford University Press, CMR)

One special form of **miscalculation** appeared sporadically in the speculations of academic commentators, though it **was** scarcely ever to be encountered—at least so far as my own observation went—in the utterances of practical planners within government. This is the idea that nuclear war might be erroneously triggered, or erroneously widened, through a state under attack misreading either what sort of attack it was being subjected to, or where the attack came from. The postulated misreading of the nature of the attack referred in particular to the hypothesis that if a delivery system—normally a missile—that was known to be capable of carrying either a nuclear or a conventional warhead was launched in a conventional role, the target country might, on detecting the launch through its early warning systems, misconstrue the mission as an imminent nuclear strike and immediately unleash a nuclear counter-strike of its own. This conjecture was voiced, for example, as a criticism of the proposals for giving the US Trident SLBM, long associated with nuclear missions, a capability to deliver conventional warheads. Whatever the merit of those proposals (it is not explored here), it is hard to regard this particular apprehension as having any real-life credibility. The ﬂight time of a ballistic missile would not exceed about thirty minutes, and that of a cruise missile a few hours, before arrival on target made its character—conventional or nuclear—unmistakable. No government will need, and no nonlunatic government could wish, to take within so short a span of time a step as enormous and irrevocable as the execution of a nuclear strike on the basis of early-warning information alone without knowing the true nature of the incoming attack. The speculation tends moreover to be expressed without reference either to any realistic political or conﬂict-related context thought to render the episode plausible, or to the manifest interest of the launching country, should there be any risk of doubt, in ensuring—by explicit communication if necessary—that there was no misinterpretation of its conventionally armed launch.

#### Interdependence checks

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.

#### Nuclear war doesn’t cause extinction

**Socol 2011**

Yehoshua (Ph.D.), an inter-disciplinary physicist, is an expert in electro-optics, high-energy physics and applications, and material science and Moshe Yanovskiy, Jan 2, “Nuclear Proliferation and Democracy”, http://www.americanthinker.com/2011/01/nuclear\_proliferation\_and\_demo.html, CMR

Nuclear proliferation should no longer be treated as an unthinkable nightmare; it is likely to be the future reality. Nuclear weapons have been acquired not only by an extremely poor per capita but large country such as India, but also by even poorer and medium-sized nations such as Pakistan and North Korea. One could also mention South Africa, which successfully acquired a nuclear arsenal despite economic sanctions (the likes of which have not yet been imposed on Iran). It is widely believed that sanctions and rhetoric will not prevent Iran from acquiring nuclear weapons and that many countries, in the Middle East and beyond, will act accordingly (see, e.g., recent Heritage report). Nuclear Warfare -- Myths And Facts The direct consequences of the limited use of nuclear weapons -- especially low-yield devices most likely to be in the hands of non-state actors or irresponsible governments -- **would** probably **not be great enough** to bring about significant geopolitical upheavals. Casualties from a single 20-KT nuclear device are estimated [1] at about 25,000 fatalities with a similar number of injured, assuming a rather unfortunate scenario (the center of a large city, with minimal warning). Scaling the above toll to larger devices or to a larger number of devices is less than linear. For example, it has been estimated that it would take as many as eighty devices of 20-KT yield each to cause 300,000 civilian fatalities in German cities (a result actually achieved by Allied area attacks, or carpet-bombings, during the Second World War). A single 1-MT device used against Detroit has been estimated by U.S. Congress OTA to result in about 220,000 fatalities. It is anticipated that well-prepared civil defense measures, based on rather simple presently known techniques, would decrease these numbers by maybe an order of magnitude (as will be discussed later). There is little doubt that a nation determined to survive and with a strong sense of its own destiny **would not succumb to** such **losses**. It is often argued that the fallout effects of even the limited use of nuclear weapons would be worldwide and would last for generations. This is an **exaggeration**. The following facts speak for themselves. -- In Japan, as assessed by REFR, less than 1,000 excess cancer cases (i.e., above the natural occurrence) were recorded in over 100,000 survivors over the past sixty years -- compared with about 110,000 immediate fatalities in the two atomic bombings. No clinical or even sub-clinical effects were discovered in the survivors' offspring. -- In the Chernobyl area, as assessed by IAEA, only fifteen cancer deaths can be directly attributed to fallout radiation. No radiation-related increase in congenital formations was recorded. Nuclear Conflict -- Possible Scenarios With reference to a possible regional nuclear conflict between a rogue state and a democratic one, the no-winner (mutual assured destruction) scenario is probably false. An analysis by Anthony Cordesman, et al. regarding a possible Israel-Iran nuclear conflict estimated that while Israel might survive an Iranian nuclear blow, Iran would certainly not survive as an organized society. Even though the projected casualties cited in that study seem to us overstated, especially as regards Israel, the conclusion rings true. Due to the extreme high intensity ("above-conventional") of nuclear conflict, it is nearly certain that such a war, no matter its outcome, **would not last for years,** as we have become accustomed to in current low-intensity conflicts. Rather, we should anticipate a new geo-political reality: the emergence of clear winners and losers **within** several **days**, or at most weeks after the initial outbreak of hostilities. This latter reality will most probably contain fewer nuclear-possessing states than the former.

**No nuke winter - studies**

Seitz 2011

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

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

#### Counterforce targeting checks

Mueller 2009

(John, Woody Hayes Chair of National Security Studies and Professor of Political Science at Ohio State University. “Atomic Obsession: Nuclear Alarmism from Hiroshima to Al-Qaeda” p. 8)

To begin to approach a condition that can credibly justify applying such extreme characterizations as societal annihilation, a full-out attack with hundreds, probably thousands, of thermonuclear bombs would be required. Even in such extreme cases, the area actually devastated by the bombs' blast and thermal pulse effects would be limited: 2,000 I-MT explosions with a destructive radius of 5 miles each would directly demolish less than 5 percent of the territory of the United States, for example. Obviously, if major population centers were targeted, this sort of attack could inflict massive casualties. Back in cold war days, when such devastating events sometimes seemed uncomfortably likely, a number of studies were conducted to estimate the consequences of massive thermonuclear attacks. One of the most prominent of these considered several possibilities. The most likely scenario--one that could be perhaps be considered at least to begin to approach the rational-was a "counterforce" strike in which well over 1,000 thermonuclear weapons would be targeted at America's ballistic missile silos, strategic airfields, and nuclear submarine bases in an effort to destroy the country's strategic ability to retaliate. Since the attack would not directly target population centers, most of the ensuing deaths would be from radioactive fallout, and the study estimates that from 2 to 20 million, depending mostly on wind, weather, and sheltering, would perish during the first month.

**Intervening actions check escalation**

Trachtenberg 2000

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

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

## 2AC

### Fukushima

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

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

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

### Chimneys

#### Definitely doesn’t solve ocean acidification since it doesn’t reduce C02

#### Link to ptx – seen as wasteful spending on fringe warming solution

#### Reject their author

brian 9 (“The super chimney that will save us all!”, 4-9, <http://climateboy.blogspot.com/2009/04/super-chimney-that-will-save-us-all.html>, CMR)

Yesterday I threw up a teaser for a future post about the Super Chimney, and here it is. I can not resist the pull of this posting, it has been rattling in my head since I found the Super Chimney (via SGTU podcast #192). The site that is home to the Super Chimney is simply superchimney.org, and is run by a man named Michael Pesochinsky. I know nothing about Mr. Pesochinsky, his motives, his background, or his mental state. I can only take the site at face value, as there is no indication that it is farce, and it appears that some effort has been put into the site, excepting quite a few grammar and spelling errors.¶ Here is the skinny on the Super Chimney: Mr. Pesochinsky suggests that building a few (around 10) Super Chimneys of diameter 1 km and height 5 km, anthropogenic global warming will be mitigated, the world's energy problems will be solved, and carbon will be sequestered in the newly arable land that is created by rain around the chimneys. So, what is the idea, well by clicking a link to the "principle," it is quite simply explained: "Hot air rises above cold air because hot air is less dense and therefore, it is lighter than cold air." Quite right, and really the underlying principle for a surprisingly large amount of the atmospheric sciences. The Super Chimney idea simply says that you can throw up a structure with openings at the bottom and top, and hot near-surface air will rush in at the base and rise with striking speed up the chimney because the surface air is so much hotter than the air at 5 km up. Along the way, harness all the kinetic energy of the updraft by installing turbines.¶ The idea is simple, and at first makes sense to a lot of people, which makes it a bit dangerous. In this post, I want to address two points: (1) be skeptical of things that seem too good to be true, and (2) the Super Chimney is a ridiculous and naive idea that has no hope of working in any way.¶ So, the first point about being skeptical. Whenever a new idea is presented, whether a product like a "dietary supplement," a medical treatment, intelligent design, or a mitigation strategy for global warming, there are several levels of skepticism that have to be addressed. If the idea/product/etc claims to solve even one "grand challenge" problem, that is a red flag, and if the claim is that multiple important problems are solved, many, many red flags should be waving in your head. These difficult problems, the problems of all humanity, are hard to solve, and lots of people are working to solve them. Rarely does one obscure idea emerge from the din to successfully tackle an important problem. This goes back to the old saying about something being too good to be true... Also, it is good to ask whether this miraculous idea/device/medicine/etc has been vetted by the scientific community, or have the interested parties gone straight to the media or public? And consider the source itself. Is this a single person, from outside the field, or a respected professional? Does the person have any experience relevant to the topic at all, and is there any information even available about the background?¶ In the case of the Super Chimney, let's see if the idea really merits much consideration just based on these questions. Well, the claim is that building 10 Super Chimneys will produce arable land, sequester carbon, generate the world's energy needs, and mitigate global warming. No small feat!! So, it sounds too good to be true, and claims to solve huge problems. The source seems only to be this website, and there's no scientific publication to back up the claims. On the plus side, there are no testimonials on the site yet. Finally, Mr. Pesochinsky is not a climate scientist, and we don't really know anything about him. None of this suggests that the proposal should be considered seriously. How does it stand up to scrutiny?¶ To start, let's suppose that it is feasible to build towers of the size suggested (1km wide, 5km tall); there are some issues with this, but I'm totally willing to concede the engineering is possible.¶ Next, let's not get caught up with the end results for now, and only address the physical principle underlying the proposal.¶ HOT AIR RISES¶

**Can’t solve warming—creates more problems and tradeoffs with reducing emissions, turns solvency**

**Ford ‘9** (Matt, “Can cloud ships and space sun shades fix the planet?”, Nov 8, <http://edition.cnn.com/2009/TECH/science/11/05/eco.geoengineering/>, CMR)

Russian roulette with the future of the planet But in sharp contrast to this enthusiasm many environmental groups are strongly opposed to geo-engineering,. They argue that it is a dangerous distraction from what they see as **the key issue**: reducing greenhouse gas emissions. "Geo-engineering is not a plan B for the climate," Greenpeace UK's chief scientist, Dr Doug Parr, said in a press statement. Geo-engineering is not a plan B for the climate --Doug Parr, Greenpeace "It should be used only in desperation, [could have] widespread undesirable impacts, and raises major ethical and political issues of its own. It may be very expensive, and it may well never work. "Many of these proposals still have risks - there is no simple global thermostat that can be turned up and down and proposals that reflect sunlight can still... have impacts on weather and precipitation leading to exactly the sorts of problems we are trying to avoid by averting climate change. "Geo-engineering is now being investigated because we have collectively, as a society, failed to take on the fossil fuel interests." Mike Childs, Head of Climate at Friends of the Earth also remains wary of the impact of many geo-engineering concepts. "The benefits of geo-engineering are unproven," he told CNN. "We haven't got time to play **Russian roulette with the future of the planet**. Science tells us we need to make quick and substantial cuts in global carbon emissions if we have any hope of avoiding runaway climate change." There is even the risk that even if some geo-engineering projects work, they may draw humanity into further difficulties that we will struggle to manage over the long-term. "We are not sure that some of the solar technologies are at all sustainable," said Shepherd. "They are based on balancing one human intervention against another, and we would have to keep maintaining that balance as long as the greenhouse gasses are in the atmosphere, and that could be hundreds of years. "We shouldn't begin something like that without understanding our exit strategy."

#### It won’t work

#### --Physics and scaling

brian 9 (“The super chimney that will save us all!”, 4-9, <http://climateboy.blogspot.com/2009/04/super-chimney-that-will-save-us-all.html>, CMR)

Additional Considerations?¶ There are a host of other potential problems with the physics of the Super Chimney idea. In fact, every claim that is made on that site is suspect, and most of them are demonstrably wrong.¶ Unfortunately, given the fundamental flaw in the premise of the Super Chimney, it is impossible to address many of the outrageous claims made. For instance, take the idea that the venting air at the top of the chimney would cool down, condense water vapor, and rain in the vicinity of the tower. My first thought is that, no, this won't happen, you will really get the cloud forming inside the tower, and rising up out of it. However, that requires the air within the tower to have a reasonable temperature profile, which immediately invalidates the crazy claims of a constant updraft of more than 100 m/s. If you did have an updraft in the tower, though, the cloud base would form about where liquid water can exist, which in most environments would be around 1-2km above the surface. The result would be, among other things, a downpour within the tower itself which would cool the lower part of the tower as liquid water fell into the warm air and evaporated, and this would stabilize the column by cooling the low levels. You could actually then imagine outflow from the the base of the tower! (And, by similar reasoning to the original Super Chimney idea, maybe you could then pump cold air down to the surface and solve global warming via refrigeration!)¶ Another ludicrous claim is that just 10 of these towers would dramatically alter the Earth's climate. Just from a scaling perspective, this can be dismissed. A single tropical thunderstorm is an updraft that reaches from near the surface up to 15km or so, and is several km in diameter. There are thousands of such storms at any given time across the tropics. Yes the energy contained within them is enormous, but the idea that just putting 10 small, but intense storms in fixed locations and expecting them to completely change the temperature structure of the atmosphere is beyond the pale.¶ In retrospect, I probably should have ignored this topic, as the more I look at that site and think about it, the more and more crazy it is. The whole thing is based on completely misunderstanding the basic physics of the atmosphere, and that is even before we start considering the implications for global warming or energy production. The lesson to be learned is that if an idea doesn't pass snuff on the basic skeptical questions, it probably isn't worth digging into it in any depth, at risk of your own mental well-being. However, just as a reminder that craziness can have consequences, I suggest checking out the website WhatsTheHarm.net.

### Consumption

#### 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 – the inclusion of climate science is key to pragmatic action

#### Perm do the plan and

#### 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 – only techno-fixes solve

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

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

#### Calls to reduce consumption fail and result in public apathy – only incentives to make clean energy cheap solve

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.

#### Prior questions fail

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

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

### Neolib

#### Don’t buy their extinction claims – they are hype written with a bias against capitalism – only pragmatic market reform solves – this answers their turns case arguments

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

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

#### Perm do the plan and challenge the ontological framework of neoliberalism – it’s the function of the alt

#### The system is Sustainable

#### a. It’ll bounce back

Foster 09 (JD, Norman B. Ture Senior Fellow in the Economics of fiscal policy – Heritage Foundation, "Is Capitalism Dead? Maybe," 3-11, http://www.npr.org/templates/story/story.php?storyId=101694302)

Capitalism is down. It may even be out. But it's far from dead. Capitalism is extremely resilient. Why? Because here, as in every democratic-industrial country around the world, it has always had to struggle to survive against encroachments — both benign and malevolent — of the state. At the moment, capitalism is losing ground most everywhere. But when the economic crisis passes, capitalism and the freedoms it engenders will recover again, if only because freedom beats its lack. It is said that the trouble with socialism is socialism; the trouble with capitalism is capitalists. The socialist economic system, inherently contrary to individual liberties, tends to minimize prosperity because it inevitably allocates national resources inefficiently. On the other hand, a truly capitalist system engaged in an unfettered pursuit of prosperity is prone to occasional and often painful excesses, bubbles and downturns like the one we are now experiencing globally. When capitalism slips, governments step in with regulations and buffers to try to moderate the excesses and minimize the broader consequences of individual errors. Sometimes these policies are enduringly helpful. Severe economic downturns inflict collateral damage on families and businesses otherwise innocent of material foolishness. Not only are the sufferings of these innocents harmful to society, but they are also downright expensive. A little wise government buffering can go a long way. The trick, of course, is the wisdom part. A good example of a wise government buffer is deposit insurance at commercial banks. Without it, depositors would have withdrawn their funds en masse, leading to a rapid collapse of the banking system. It happened in years gone by. But today, deposits have flowed into the banking system in search of safety, helping banks staunch their many severe wounds. Yet for every example of helpful government intervention, there are many more that do more harm than good. Fannie Mae and Freddie Mac leap to mind. These congressional creatures helped create, then inflate the subprime market. When that balloon popped, it triggered a global economic meltdown. The current financial crisis clearly has capitalism on its back foot. Government ownership of the largest insurance company, the major banks, and Fan and Fred are awesome incursions into private markets. But, as President Obama has underscored, these incursions are only temporary. In time, these institutions — even Fan and Fred — will be broken up and sold in parts. It will leave government agents with stories to tell their grandkids, and taxpayers stuck with the losses. But the power of the state will again recede, and another new age of freedom and capitalism will arrive and thrive… until we repeat the cycle again sometime down the road.

#### Short-term market mechanisms are the only solution to environmental destruction---the alt is ideological blindness which justifies the status quo – only risk of policy failure is if you vote neg

Bryant 12—professor of philosophy at Collin College (Levi, We’ll Never Do Better Than a Politician: Climate Change and Purity, 5/11/12, http://larvalsubjects.wordpress.com/2012/05/11/well-never-do-better-than-a-politician-climate-change-and-purity/)

Somewhere or other Latour makes the remark that we’ll never do better than a politician. Here it’s important to remember that for Latour– as for myself –every entity is a “politician”. Latour isn’t referring solely to those persons that we call “politicians”, but to all entities that exist. And if Latour claims that we’ll never do better than a politician, then this is because every entity must navigate a field of relations to other entities that play a role in what is and is not possible in that field. In the language of my ontology, this would be articulated as the thesis that the local manifestations of which an entity is capable are, in part, a function of the relations the entity entertains to other entities in a regime of attraction. The world about entities perpetually introduces resistances and frictions that play a key role in what comes to be actualized. ¶ It is this aphorism that occurred to me today after a disturbing discussion with a rather militant Marxist on Facebook. I had posted a very disturbing editorial on climate change by the world renowned climate scientist James Hansen. Not only did this person completely misread the editorial, denouncing Hansen for claiming that Canada is entirely responsible for climate change (clearly he had no familiarity with Hansen or his important work), but he derided Hansen for proposing market-based solutions to climate change on the grounds that “the market is the whole source of the problem!” It’s difficult to know how to respond in this situations.¶ read on! ¶ It is quite true that it is the system of global capitalism or the market that has created our climate problems (though, as Jared Diamond shows in Collapse, other systems of production have also produced devastating climate problems). In its insistence on profit and expansion in each economic quarter, markets as currently structured provide no brakes for environmental destructive actions. The system is itself pathological.¶ However, pointing this out and deriding market based solutions doesn’t get us very far. In fact, such a response to proposed market-based solutions is downright dangerous and irresponsible. The fact of the matter is that 1) we currently live in a market based world, 2) there is not, in the foreseeable future an alternative system on the horizon, and 3), above all, we need to do something now. We can’t afford to reject interventions simply because they don’t meet our ideal conceptions of how things should be. We have to work with the world that is here, not the one that we would like to be here. And here it’s crucial to note that pointing this out does not entail that we shouldn’t work for producing that other world. It just means that we have to grapple with the world that is actually there before us.¶ It pains me to write this post because I remember, with great bitterness, the diatribes hardcore Obama supporters leveled against legitimate leftist criticisms on the grounds that these critics were completely unrealistic idealists who, in their demand for “purity”, were asking for “ponies and unicorns”. This rejoinder always seemed to ignore that words have power and that Obama, through his profound power of rhetoric, had, at least the power to shift public debates and frames, opening a path to making new forms of policy and new priorities possible. The tragedy was that he didn’t use that power, though he has gotten better.¶ I do not wish to denounce others and dismiss their claims on these sorts of grounds. As a Marxist anarchists, I do believe that we should fight for the creation of an alternative hominid ecology or social world. I think that the call to commit and fight, to put alternatives on the table, has been one of the most powerful contributions of thinkers like Zizek and Badiou. If we don’t commit and fight for alternatives those alternatives will never appear in the world. Nonetheless, we still have to grapple with the world we find ourselves in. And it is here, in my encounters with some Militant Marxists, that I sometimes find it difficult to avoid the conclusion that they are unintentionally aiding and abetting the very things they claim to be fighting. In their refusal to become impure, to work with situations or assemblages as we find them, to sully their hands, they end up reproducing the very system they wish to topple and change. Narcissistically they get to sit there, smug in their superiority and purity, while everything continues as it did before because they’ve refused to become politicians or engage in the difficult concrete work of assembling human and nonhuman actors to render another world possible. As a consequence, they occupy the position of Hegel’s beautiful soul that denounces the horrors of the world, celebrate the beauty of their soul, while depending on those horrors of the world to sustain their own position. ¶ To engage in politics is to engage in networks or ecologies of relations between humans and nonhumans. To engage in ecologies is to descend into networks of causal relations and feedback loops that you cannot completely master and that will modify your own commitments and actions. But there’s no other way, there’s no way around this, and we do need to act now.

### Gas DA

#### No Russian fragmentation

**Ross, ‘5**

[Ross, Cameron, “Federalism and Electoral Authoritarianism under Putin,” Demokratizatsiya, Summer 2005, http://findarticles.com/p/articles/mi\_qa3996/is\_200507/ai\_n15704836/pg\_7?tag=untagged]

However, fears of Russia's ethnic disintegration have been exaggerated. There are a number of demographic, economic, and geopolitical factors, which make it highly unlikely that the federation will fall apart. First, Russians make up 83 percent of the population and the second largest ethnic group, the Tatars, comprises just 3.8 percent.26 second, Russia's twenty-one republics make up just 15.7 percent of the total population of the federation, and in only seven of these republics does the indigenous population comprise a majority (Chechnya, Chuvashiya, Dagestan,27 Ingushetiya, Kalmykiya, North Osetiya-Alaniya, and Tuva). Third, of the eleven autonomous areas (the ten autonomous okrugs and the autonomous oblast), the eponymous population is a majority in only two. If we assume that viable demands for secession can only come from those subjects whose territories border foreign states and where a majority of their population is indigenous, then this leaves us with just six republics that meet these criteria:28 Chechnya, Dagestan, Ingushetiya, Kalmykiya, North Osetiya-Alaniya, and Tuva. Another factor to take into consideration is the economic status of these republics. All six are totally dependent on the federal budget for their economic survival. Thus, it is not surprising that only Chechnya has gone so far as to declare its outright secession. Indeed, Chechnya's experience of two bloody wars and occupation by Russian troops is another important factor that has undoubtedly dampened the separatist demands from other republics.  A2 – Russia Econ Collapse

#### Concede the porter – it says that developing countries are key

#### US nuclear power now – t/o the DA

Silverstein 2/20 Ken, Forbes, "Despite Difficulties, Nuclear Energy Will Regain Strength", 2013, [www.forbes.com/sites/kensilverstein/2013/02/20/despite-difficulties-nuclear-energy-will-regain-strength/](http://www.forbes.com/sites/kensilverstein/2013/02/20/despite-difficulties-nuclear-energy-will-regain-strength/)

The Japanese nuclear accident in March 2011 may have knocked out the sector’s wind. But the industry now says that it has regained its momentum. Here in the United States, five new plants are expected to be operational by the end of the decade while internationally, 70 such facilities are planned.¶ Nuclear energy advocates are still battling the same longtime foes. But the industry feels that once the new plants with modern safeguards get up and running, those facilities will prove their value. The harder sell, right now, is the financial justification. Why spend $10-$15 billion to build a new nuclear facility when market conditions now favor combined-cycle natural gas plants that are much cheaper and easier to permit?¶ “The long-term fundamentals continue to support this technology,” says Marvin Fertel, chief executive of the Nuclear Energy Institute, before Wall Street analysts. He adds that the average capacity factor — a measurement of operational efficiency — has been about 90 percent for the past decade. Further, the uranium to fuel those reactors is plentiful while the environmental impact is relatively benign.¶ The utilities with active construction efforts are Southern Company, Scana Corp. and the Tennessee Valley Authority. Southern Co. and its partners are building two new units where two other other nuclear reactors now reside. The total price tag is estimated at $14 billion. Of that, the partnership will snag an $8 billion loan guarantee while it puts up $6 billion of its money.

### War DA

#### This DA relies on the presumption that war exists and presidential credibility is necessary to prevent wars – They have to win ALL of the no war and nuclear war debate to win this DA

#### No WMD terrorism – lack of desire and capability – empirically the threat is overblown

Mueller 11. John Mueller, Professor and Woody Hayes Chair of National Security Studies, Mershon Center for International Security Studies and Department of Political Science, “The Truth About al Qaeda”, 8/2/2011, <http://www.foreignaffairs.com/articles/68012/john-mueller/the-truth-about-al-qaeda?page=show>, CMR

The chief lesson of 9/11 should have been that small bands of terrorists, using simple methods, can exploit loopholes in existing security systems. But instead, **many** preferred to **engage in mass**ive **extrapolation**: **If 19 men could hijack four airplanes** simultaneously, the thinking went, then **surely al Qaeda would soon make an atomic bomb.** As a misguided Turkish proverb holds, "If your enemy be an ant, imagine him to be an elephant." The new information unearthed in Osama bin Laden's hideout in Abbottabad, Pakistan, suggests that the United States has been doing so for a full decade. **Whatever al Qaeda's threatening rhetoric and occasional nuclear fantasies, its potential as a menace**, particularly as an atomic one, **has been much inflated**. **The public has** now **endured a decade of dire warnings about** the imminence of a **terrorist atomic attack**. In 2004, the former CIA spook Michael Scheuer proclaimed on television's 60 Minutes that it was "probably a near thing," and in 2007, the physicist Richard Garwin assessed the likelihood of a nuclear explosion in an American or a European city by terrorism or other means in the next ten years to be 87 percent. By 2008, Defense Secretary Robert Gates mused that what keeps every senior government leader awake at night is "the thought of a terrorist ending up with a weapon of mass destruction, especially nuclear." **Few**, it seems, **found** much **solace in** the fact **that** **an al Qaeda computer** seized in Afghanistan in 2001 **indicated** that **the group's budget for research on w**eapons of **m**ass **d**estruction (almost all of it focused on primitive chemical weapons work) **was** some $2,000 to $4,000. In the wake of the killing of Osama bin Laden, officials now have more al Qaeda computers, which reportedly contain a wealth of information about the workings of the organization in the intervening decade. A multi-agency task force has completed its assessment, and according to first reports, it has found that **al Qaeda members have** **primarily been engaged in dodging drone strikes and complaining about how cash-strapped they are**. Some **reports suggest** **they've** also **been looking at quite a bit of** pornography. The full story is not out yet, but **it seems** breathtakingly unlikely **that the miserable little group has** had **the time or inclination, let alone the money, to set up and staff a uranium-seizing operation, as well as a** fancy, super-high-tech **facility to fabricate a bomb**. **It** is a process that **requires trusting corrupted foreign collaborators** and other criminals, **obtaining and transporting** highly guarded **material**, **setting up a** machine **shop staffed with top scientists** and technicians, **and rolling the** heavy, cumbersome, and untested finished **product into position to be detonated by a skilled crew**, all the **while attracting no from outsiders.** The documents also reveal that after fleeing Afghanistan, bin Laden maintained what one member of the task force calls an "obsession" with attacking the United States again, even though 9/11 was in many ways a disaster for the group. It led to a worldwide loss of support, a major attack on it and on its Taliban hosts, and a decade of furious and dedicated harassment. And indeed, bin Laden did repeatedly and publicly threaten an attack on the United States. He assured Americans in 2002 that "the youth of Islam are preparing things that will fill your hearts with fear"; and in 2006, he declared that his group had been able "to breach your security measures" and that "operations are under preparation, and you will see them on your own ground once they are finished." Al Qaeda's animated spokesman, Adam Gadahn, proclaimed in 2004 that "the streets of America shall run red with blood" and that "the next wave of attacks may come at any moment." The **obsessive desire notwithstanding**, such **fulminations have clearly lacked substance**. Although hundreds of millions of people enter the United States legally every year, and countless others illegally, **no true al Qaeda cell has been found in the country since 9/11** and exceedingly few people have been uncovered who even have any sort of "link" to the organization. The closest effort at an al Qaeda operation within the country was a decidedly nonnuclear one by an Afghan-American, Najibullah Zazi, in 2009. Outraged at the U.S.-led war on his home country, Zazi attempted to join the Taliban but was persuaded by al Qaeda operatives in Pakistan to set off some bombs in the United States instead. Under surveillance from the start, he was soon arrested, and, however "radicalized," he has been talking to investigators ever since, turning traitor to his former colleagues. Whatever training Zazi received was inadequate; he repeatedly and desperately sought further instruction from his overseas instructors by phone. At one point, he purchased bomb material with a stolen credit card, guaranteeing that the purchase would attract attention and that security video recordings would be scrutinized. Apparently, his handlers were so strapped that they could not even advance him a bit of cash to purchase some hydrogen peroxide for making a bomb. For al Qaeda, then, the operation was a failure in every way -- except for the ego boost it got by inspiring the usual dire litany about the group's supposedly existential challenge to the United States, to the civilized world, to the modern state system. Indeed, **no** Muslim **extremist has succeeded in detonating** even **a simple bomb in the U**nited **S**tates **in the last ten years**, and except for the attacks on the London Underground in 2005, neither has any in the United Kingdom. **It seems** wildly unlikely **that al Qaeda is remotely ready to go nuclear**. Outside of war zones, the amount of killing carried out by **al Qaeda** and al Qaeda linkees, maybes, and wannabes throughout the entire world since 9/11 stands at perhaps a few hundred per year. That's a few hundred too many, of course, but it scarcely presents an existential, or elephantine, threat. And **the likelihood that a**n **American will be killed by a terrorist** of any ilk **stands at one in 3.5 million per year**, even with 9/11 included. **That probability will remain unchanged** unless terrorists are able to increase their capabilities massively -- and obtaining nuclear weapons would allow them to do so. Although al Qaeda may have dreamed from time to time about getting such weapons, no other terrorist group has even gone so far as to indulge in such dreams, with the exception of the Japanese cult **Aum Shinrikyo**, which leased the mineral rights to an Australian sheep ranch that sat on uranium deposits, purchased some semi-relevant equipment, and tried to buy a finished bomb from the Russians. That experience, however, **cannot be very encouraging to** the would-be atomic **terrorist**. Even though it was flush with funds and undistracted by drone attacks (or even by much surveillance), **Aum Shinrikyo abandoned its atomic efforts in frustration very early on. It then moved to bio**logical **weapons**, another complete failure that inspired its leader to suggest that fears expressed in the United States of a biological attack were actually a ruse to tempt terrorist groups to pursue the weapons. **The group did** finally **manage to release some sarin gas** in a Tokyo subway **that killed 13 and led to the group's terminal shutdown, as well as to 16 years** (and counting) **of pronouncements that WMD terrorism is the wave of the future. No elephants there, either**.

#### We Control Link UQ - Legislative constraints are inevitable – only question is whether approval takes place

Barron and Lederman, 2008 (David, Professor of Law at Harvard Law School; Martin, Visiting Professor of Law at Georgetown University Law Center; “The Commander in Chief at the Lowest Ebb – A Constitutional History”, Harvard Law Review, 121 Harv. L. Rev. 941, Lexis)

In a companion Article, we described many of the structural forces responsible for this shift in the ground of debate. n2 Collectively, they strongly suggest that the prevailing paradigm of congressional abdication - developed at a time when bold claims of presidential authority to act without express legislative approval occasioned all the attention - no longer illuminates the main battle lines in constitutional struggles over the exercise of war powers. Among the most important of these forces is the peculiar nature of the war on terrorism. Its unusual entwinement with the home front, its heavy focus on preemptive action and intelligence collection, and its targeting of a diffuse, non-state enemy, all guarantee that presidential uses of force are likely to be conducted for years to come in a context that is thick with statutory restrictions. But even beyond the war on terrorism, the "lowest ebb" issue is likely to take on added significance, if only because of the increased willingness of Presidents to deploy force abroad. There is mounting evidence that the reduction in legislative participation at the front end of these conflicts is being counterbalanced to some extent by a legislative willingness to intervene at the back end if the campaign goes poorly or if the public begins to doubt certain of the President's decisions about how it should be prosecuted.