# 1NC

### Warfighting

#### Obama’s Syria maneuver has maximized presidential war powers because it’s on his terms

Posner 9/3, Law Prof at University of Chicago

(Eric, Obama Is Only Making His War Powers Mightier, www.slate.com/articles/news\_and\_politics/view\_from\_chicago/2013/09/obama\_going\_to\_congress\_on\_syria\_he\_s\_actually\_strengthening\_the\_war\_powers.html)

President Obama’s surprise announcement that he will ask Congress for approval of a military attack on Syria is being hailed as a vindication of the rule of law and a revival of the central role of Congress in war-making, even by critics. But all of this is wrong. Far from breaking new legal ground, President Obama has reaffirmed the primacy of the executive in matters of war and peace. The war powers of the presidency remain as mighty as ever. It would have been different if the president had announced that only Congress can authorize the use of military force, as dictated by the Constitution, which gives Congress alone the power to declare war. That would have been worthy of notice, a reversal of the ascendance of executive power over Congress. But the president said no such thing. He said: “I believe I have the authority to carry out this military action without specific congressional authorization.” Secretary of State John Kerry confirmed that the president “has the right to do that”—launch a military strike—“no matter what Congress does.” Thus, the president believes that the law gives him the option to seek a congressional yes or to act on his own. He does not believe that he is bound to do the first. He has merely stated the law as countless other presidents and their lawyers have described it before him. The president’s announcement should be understood as a political move, not a legal one. His motive is both self-serving and easy to understand, and it has been all but acknowledged by the administration. If Congress now approves the war, it must share blame with the president if what happens next in Syria goes badly. If Congress rejects the war, it must share blame with the president if Bashar al-Assad gases more Syrian children. The big problem for Obama arises if Congress says no and he decides he must go ahead anyway, and then the war goes badly. He won’t have broken the law as he understands it, but he will look bad. He would be the first president ever to ask Congress for the power to make war and then to go to war after Congress said no. (In the past, presidents who expected dissent did not ask Congress for permission.) People who celebrate the president for humbly begging Congress for approval also apparently don’t realize that his understanding of the law—that it gives him the option to go to Congress—maximizes executive power vis-à-vis Congress. If the president were required to act alone, without Congress, then he would have to take the blame for failing to use force when he should and using force when he shouldn’t. If he were required to obtain congressional authorization, then Congress would be able to block him. But if he can have it either way, he can force Congress to share responsibility when he wants to and avoid it when he knows that it will stand in his way.

#### **Statutory restriction of Presidential War Powers makes warfighting impossible**

Yoo 12 – prof of law @ UC Berkeley

(John, War Powers Belong to the President, ABA Journal February 2012 Issue, http://www.abajournal.com/magazine/article/war\_powers\_belong\_to\_the\_president) <we do not endorse the ableist language used in this card, but have left it in to preserve the author’s intent. we apologize for the author’s inappropriate use of the word “paralyze”>

The framers realized the obvious. Foreign affairs are unpredictable and involve the highest of stakes, making them unsuitable to regulation by pre-existing legislation. Instead, they can demand swift, decisive action—sometimes under pressured or even emergency circumstances—that is best carried out by a branch of government that does not suffer from multiple vetoes or is delayed by disagreements. Congress is too large and unwieldy to take the swift and decisive action required in wartime. Our framers replaced the Articles of Confederation, which had failed in the management of foreign relations because they had no single executive, with the Constitution’s single president for precisely this reason. Even when it has access to the same intelligence as the executive branch, Congress’ loose, decentralized structure would paralyze American policy while foreign threats grow. Congress has no political incentive to mount and see through its own wartime policy. Members of Congress, who are interested in keeping their seats at the next election, do not want to take stands on controversial issues where the future is uncertain. They will avoid like the plague any vote that will anger large segments of the electorate. They prefer that the president take the political risks and be held accountable for failure. Congress’ track record when it has opposed presidential leadership has not been a happy one. Perhaps the most telling example was the Senate’s rejection of the Treaty of Versailles at the end of World War I. Congress’ isolationist urge kept the United States out of Europe at a time when democracies fell and fascism grew in their place. Even as Europe and Asia plunged into war, Congress passed the Neutrality Acts designed to keep the United States out of the conflict. President Franklin Roosevelt violated those laws to help the Allies and draw the nation into war against the Axis. While pro-Congress critics worry about a president’s foreign adventurism, the real threat to our national security may come from inaction and isolationism. Many point to the Vietnam War as an example of the faults of the “imperial presidency.” Vietnam, however, could not have continued without the consistent support of Congress in raising a large military and paying for hostilities. And Vietnam ushered in a period of congressional dominance that witnessed American setbacks in the Cold War and the passage of the ineffectual War Powers Resolution. Congress passed the resolution in 1973 over President Richard Nixon’s veto, and no president, Republican or Democrat, George W. Bush or Obama, has ever accepted the constitutionality of its 60-day limit on the use of troops abroad. No federal court has ever upheld the resolution. Even Congress has never enforced it. Despite the record of practice and the Constitution’s institutional design, critics nevertheless argue for a radical remaking of the American way of war. They typically base their claim on Article I, Section 8, of the Constitution, which gives Congress the power to “declare war.” But these observers read the 18th century constitutional text through a modern lens by interpreting “declare war” to mean “start war.” When the Constitution was written, however, a declaration of war served diplomatic notice about a change in legal relations between nations. It had little to do with launching hostilities. In the century before the Constitution, for example, Great Britain—where the framers got the idea of the declare-war power—fought numerous major conflicts but declared war only once beforehand. Our Constitution sets out specific procedures for passing laws, appointing officers and making treaties. There are none for waging war because the framers expected the president and Congress to struggle over war through the national political process. In fact, other parts of the Constitution, properly read, support this reading. Article I, Section 10, for example, declares that the states shall not “engage” in war “without the consent of Congress” unless “actually invaded, or in such imminent danger as will not admit of delay.” This provision creates exactly the limits desired by anti-war critics, complete with an exception for self-defense. If the framers had wanted to require congressional permission before the president could wage war, they simply could have repeated this provision and applied it to the executive. Presidents, of course, do not have complete freedom to take the nation to war. Congress has ample powers to control presidential policy, if it wants to. Only Congress can raise the military, which gives it the power to block, delay or modify war plans. Before 1945, for example, the United States had such a small peacetime military that presidents who started a war would have to go hat in hand to Congress to build an army to fight it. Since World War II, it has been Congress that has authorized and funded our large standing military, one primarily designed to conduct offensive, not defensive, operations (as we learned all too tragically on 9/11) and to swiftly project power worldwide. If Congress wanted to discourage presidential initiative in war, it could build a smaller, less offensive-minded military. Congress’ check on the presidency lies not just in the long-term raising of the military. It can also block any immediate armed conflict through the power of the purse. If Congress feels it has been misled in authorizing war, or it disagrees with the president’s decisions, all it need do is cut off funds, either all at once or gradually. It can reduce the size of the military, shrink or eliminate units, or freeze supplies. Using the power of the purse does not even require affirmative congressional action. Congress can just sit on its hands and refuse to pass a law funding the latest presidential adventure, and the war will end quickly. Even the Kosovo war, which lasted little more than two months and involved no ground troops, required special funding legislation. The framers expected Congress’ power of the purse to serve as the primary check on presidential war. During the 1788 Virginia ratifying convention, Patrick Henry attacked the Constitution for failing to limit executive militarism. James Madison responded: “The sword is in the hands of the British king; the purse is in the hands of the Parliament. It is so in America, as far as any analogy can exist.” Congress ended America’s involvement in Vietnam by cutting off all funds for the war. Our Constitution has succeeded because it favors swift presidential action in war, later checked by Congress’ funding power. If a president continues to wage war without congressional authorization, as in Libya, Kosovo or Korea, it is only because Congress has chosen not to exercise its easy check. We should not confuse a desire to escape political responsibility for a defect in the Constitution. A radical change in the system for making war might appease critics of presidential power. But it could also seriously threaten American national security. In order to forestall another 9/11 attack, or to take advantage of a window of opportunity to strike terrorists or rogue nations, the executive branch needs flexibility. It is not hard to think of situations where congressional consent cannot be obtained in time to act. Time for congressional deliberation, which leads only to passivity and isolation and not smarter decisions, will come at the price of speed and secrecy. The Constitution creates a presidency that can respond forcefully to prevent serious threats to our national security. Presidents can take the initiative and Congress can use its funding power to check them. Instead of demanding a legalistic process to begin war, the framers left war to politics. As we confront the new challenges of terrorism, rogue nations and WMD proliferation, now is not the time to introduce sweeping, untested changes in the way we make war.

#### The plan spills over to broader Congressional decisionmaking

Paul 2008 - Senior Social Scientist; Professor, Pardee RAND Graduate School Pittsburgh Office Education Ph.D., M.A., and B.A. in sociology, University of California, Los Angeles (September, Christopher, “US Presidential War Powers: Legacy Chains in Military Intervention Decisionmaking\* ,” Journal of Peace Research, Vol. 45, No. 5 (Sep., 2008), pp. 665-679)

Legacy Chains

Finegold & Skocpol (1995: 222) describe policy legacies: Past and present policies are connected in at least three different ways. First, past policies give rise to analogies that affect how public officials think about contemporary policy issues. Second, past policies suggest lessons that help us to understand the processes by which contemporary policies are formulated and implemented and by which the conse quences of contemporary policies will be determined. Third, past policies impose limi tations that reduce the range of policy choices available as responses to contemporary problems. All three of the ways in which they connect past policy to present policy can be viewed as changes in the institutional context in which policy is made. These legacies are institutionalized in two different ways: first, through changes in formal rules or procedures, and second, in the 'taken for granteds', 'schemas', and accepted wisdom of policy makers and ordinary citizens alike (Sewell, 1992: 1-29). While a policy or event can leave multiple legacies, it often leaves a single major legacy. For example, the War Powers Resolution for mally changed the relationship between the president and the congress with regard to war-making and the deployment of troops. Subsequent military interventions were influenced by this change and have, in turn, left their own legacy (legal scholars might call it precedent) as a link in that chain. Legacy chains can be modified, trans formed, or reinforced as they step through each 'link' in the chain. As another example, US involvement in Vietnam left a legacy in the sphere of press/military relations which affected the intervention in Grenada in 1983 (the press was completely excluded for the first 48 hours of the operation). The press legacy chain begun in Vietnam also affected the Panama invasion of 1989 (a press pool was activated, in country, but excluded from the action), but the legacy had been trans formed slightly by the Grenada invasion (the press pool system itself grew out of complaint regarding press exclusion in Grenada) (Paul & Kim, 2004). Because of the different ways in which policy legacies are institutionalized, some legacies have unintended institutional conse quences. The War Powers Resolution was intended to curtail presidential war-making powers and return some authority to the con gress. In practice, the joint resolution failed to force presidents to include congressional participation in their intervention decision making, but it had the unintended conse quence of forcing them to change the way they planned interventions to comply with the letter of the law (see the extended ex ample presented later in the article).1

#### Executive control of warmaking is key to avoiding nuclear war and terrorism

Li 2009 - J.D. candidate, Georgetown University Law Center, 2009; B.A., political science and history, Yale University (Zheyao, “War Powers for the Fourth Generation: Constitutional Interpretation in the Age of Asymmetric Warfare,” 7 Geo. J.L. & Pub. Pol'y 373 2009 WAR POWERS IN THE FOURTH GENERATION OF WARFARE)

A. The Emergence of Non-State Actors

Even as the quantity of nation-states in the world has increased dramatically since the end of World War II, the institution of the nation-state has been in decline over the past few decades. Much of this decline is the direct result of the waning of major interstate war, which primarily resulted from the introduction of nuclear weapons.122 The proliferation of nuclear weapons, and their immense capacity for absolute destruction, has ensured that conventional wars remain limited in scope and duration. Hence, "both the size of the armed forces and the quantity of weapons at their disposal has declined quite sharply" since 1945.123 At the same time, concurrent with the decline of the nation-state in the second half of the twentieth century, non-state actors have increasingly been willing and able to use force to advance their causes. In contrast to nation-states, who adhere to the Clausewitzian distinction between the ends of policy and the means of war to achieve those ends, non-state actors do not necessarily fight as a mere means of advancing any coherent policy. Rather, they see their fight as a life-and-death struggle, wherein the ordinary terminology of war as an instrument of policy breaks down because of this blending of means and ends.124 It is the existential nature of this struggle and the disappearance of the Clausewitzian distinction between war and policy that has given rise to a new generation of warfare. The concept of fourth-generational warfare was first articulated in an influential article in the Marine Corps Gazette in 1989, which has proven highly prescient. In describing what they saw as the modem trend toward a new phase of warfighting, the authors argued that: In broad terms, fourth generation warfare seems likely to be widely dispersed and largely undefined; the distinction between war and peace will be blurred to the vanishing point. It will be nonlinear, possibly to the point of having no definable battlefields or fronts. The distinction between "civilian" and "military" may disappear. Actions will occur concurrently throughout all participants' depth, including their society as a cultural, not just a physical, entity. Major military facilities, such as airfields, fixed communications sites, and large headquarters will become rarities because of their vulnerability; the same may be true of civilian equivalents, such as seats of government, power plants, and industrial sites (including knowledge as well as manufacturing industries). 125 It is precisely this blurring of peace and war and the demise of traditionally definable battlefields that provides the impetus for the formulation of a new. theory of war powers. As evidenced by Part M, supra, the constitutional allocation of war powers, and the Framers' commitment of the war power to two co-equal branches, was not designed to cope with the current international system, one that is characterized by the persistent machinations of international terrorist organizations, the rise of multilateral alliances, the emergence of rogue states, and the potentially wide proliferation of easily deployable weapons of mass destruction, nuclear and otherwise. B. The Framers' World vs. Today's World The Framers crafted the Constitution, and the people ratified it, in a time when everyone understood that the state controlled both the raising of armies and their use. Today, however, the threat of terrorism is bringing an end to the era of the nation-state's legal monopoly on violence, and the kind of war that existed before-based on a clear division between government, armed forces, and the people-is on the decline. 126 As states are caught between their decreasing ability to fight each other due to the existence of nuclear weapons and the increasing threat from non-state actors, it is clear that the Westphalian system of nation-states that informed the Framers' allocation of war powers is no longer the order of the day. 127 As seen in Part III, supra, the rise of the modem nation-state occurred as a result of its military effectiveness and ability to defend its citizens. If nation-states such as the United States are unable to adapt to the changing circumstances of fourth-generational warfare-that is, if they are unable to adequately defend against low-intensity conflict conducted by non-state actors-"then clearly [the modern state] does not have a future in front of it.' 128 The challenge in formulating a new theory of war powers for fourthgenerational warfare that remains legally justifiable lies in the difficulty of adapting to changed circumstances while remaining faithful to the constitutional text and the original meaning. 29 To that end, it is crucial to remember that the Framers crafted the Constitution in the context of the Westphalian system of nation-states. The three centuries following the Peace of Westphalia of 1648 witnessed an international system characterized by wars, which, "through the efforts of governments, assumed a more regular, interconnected character."' 130 That period saw the rise of an independent military class and the stabilization of military institutions. Consequently, "warfare became more regular, better organized, and more attuned to the purpose of war-that is, to its political objective."' 1 3' That era is now over. Today, the stability of the long-existing Westphalian international order has been greatly eroded in recent years with the advent of international terrorist organizations, which care nothing for the traditional norms of the laws of war. This new global environment exposes the limitations inherent in the interpretational methods of originalism and textualism and necessitates the adoption of a new method of constitutional interpretation. While one must always be aware of the text of the Constitution and the original understanding of that text, that very awareness identifies the extent to which fourth-generational warfare epitomizes a phenomenon unforeseen by the Framers, a problem the constitutional resolution of which must rely on the good judgment of the present generation. 13 Now, to adapt the constitutional warmarking scheme to the new international order characterized by fourth-generational warfare, one must understand the threat it is being adapted to confront. C. The Jihadist Threat The erosion of the Westphalian and Clausewitzian model of warfare and the blurring of the distinction between the means of warfare and the ends of policy, which is one characteristic of fourth-generational warfare, apply to al-Qaeda and other adherents of jihadist ideology who view the United States as an enemy. An excellent analysis of jihadist ideology and its implications for the rest of the world are presented by Professor Mary Habeck. 133 Professor Habeck identifies the centrality of the Qur'an, specifically a particular reading of the Qur'an and hadith (traditions about the life of Muhammad), to the jihadist terrorists. 134 The jihadis believe that the scope of the Qur'an is universal, and "that their interpretation of Islam is also intended for the entire world, which must be brought to recognize this fact peacefully if possible and through violence if not."' 135 Along these lines, the jihadis view the United States and her allies as among the greatest enemies of Islam: they believe "that every element of modern Western liberalism is flawed, wrong, and evil" because the basis of liberalism is secularism. 136 The jihadis emphasize the superiority of Islam to all other religions, and they believe that "God does not want differing belief systems to coexist."' 37 For this reason, jihadist groups such as al-Qaeda "recognize that the West will not submit without a fight and believe in fact that the Christians, Jews, and liberals have united against Islam in a war that will end in the complete destruction of the unbelievers.' 138 Thus, the adherents of this jihadist ideology, be it al-Qaeda or other groups, will continue to target the United States until she is destroyed. Their ideology demands it. 139 To effectively combat terrorist groups such as al-Qaeda, it is necessary to understand not only how they think, but also how they operate. Al-Qaeda is a transnational organization capable of simultaneously managing multiple operations all over the world."14 It is both centralized and decentralized: al-Qaeda is centralized in the sense that Osama bin Laden is the unquestioned leader, but it is decentralized in that its operations are carried out locally, by distinct cells."4 AI-Qaeda benefits immensely from this arrangement because it can exercise direct control over high-probability operations, while maintaining a distance from low-probability attacks, only taking the credit for those that succeed. The local terrorist cells benefit by gaining access to al-Qaeda's "worldwide network of assets, people, and expertise."' 42 Post-September 11 events have highlighted al-Qaeda's resilience. Even as the United States and her allies fought back, inflicting heavy casualties on al-Qaeda in Afghanistan and destroying dozens of cells worldwide, "al-Qaeda's networked nature allowed it to absorb the damage and remain a threat." 14 3 This is a far cry from earlier generations of warfare, where the decimation of the enemy's military forces would generally bring an end to the conflict. D. The Need for Rapid Reaction and Expanded Presidential War Power By now it should be clear just how different this conflict against the extremist terrorists is from the type of warfare that occupied the minds of the Framers at the time of the Founding. Rather than maintaining the geographical and political isolation desired by the Framers for the new country, today's United States is an international power targeted by individuals and groups that will not rest until seeing her demise. The Global War on Terrorism is not truly a war within the Framers' eighteenth-century conception of the term, and the normal constitutional provisions regulating the division of war powers between Congress and the President do not apply. Instead, this "war" is a struggle for survival and dominance against forces that threaten to destroy the United States and her allies, and the fourth-generational nature of the conflict, highlighted by an indiscernible distinction between wartime and peacetime, necessitates an evolution of America's traditional constitutional warmaking scheme. As first illustrated by the military strategist Colonel John Boyd, constitutional decision-making in the realm of war powers in the fourth generation should consider the implications of the OODA Loop: Observe, Orient, Decide, and Act. 44 In the era of fourth-generational warfare, quick reactions, proceeding through the OODA Loop rapidly, and disrupting the enemy's OODA loop are the keys to victory. "In order to win," Colonel Boyd suggested, "we should operate at a faster tempo or rhythm than our adversaries." 145 In the words of Professor Creveld, "[b]oth organizationally and in terms of the equipment at their disposal, the armed forces of the world will have to adjust themselves to this situation by changing their doctrine, doing away with much of their heavy equipment and becoming more like police."1 46 Unfortunately, the existing constitutional understanding, which diffuses war power between two branches of government, necessarily (by the Framers' design) slows down decision- making. In circumstances where war is undesirable (which is, admittedly, most of the time, especially against other nation-states), the deliberativeness of the existing decision-making process is a positive attribute. In America's current situation, however, in the midst of the conflict with al-Qaeda and other international terrorist organizations, the existing process of constitutional decision-making in warfare may prove a fatal hindrance to achieving the initiative necessary for victory. As a slow-acting, deliberative body, Congress does not have the ability to adequately deal with fast-emerging situations in fourth-generational warfare. Thus, in order to combat transnational threats such as al-Qaeda, the executive branch must have the ability to operate by taking offensive military action even without congressional authorization, because only the executive branch is capable of the swift decision-making and action necessary to prevail in fourth-generational conflicts against fourthgenerational opponents.

### K1

#### You should view consumption as a complex network of environmental pressures – addressing one “hotspot” for environmental collapse distracts focus from the broader system and produces efficiency gains that are only re-invested for more consumption – only a reduction in consumption patterns can solve inevitable human extinction

Ehrlich & Ehrlich 13

(Paul, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne, Senior Research Scientist in Biology at Stanford, “Can a collapse of global civilization be avoided?”, January 9, 2013, *Proceedings of the Royal Society of Biological Sciences*)

But today, for the first time, humanity's global civilization—the worldwide, increasingly interconnected, highly technological society in which we all are to one degree or another, embedded—is threatened with collapse by an array of environmental problems. Humankind finds itself engaged in what Prince Charles described as ‘an act of suicide on a grand scale’ [4], facing what the UK's Chief Scientific Advisor John Beddington called a ‘perfect storm’ of environmental problems [5]. The most serious of these problems show signs of rapidly escalating severity, especially climate disruption. But other elements could potentially also contribute to a collapse: an accelerating extinction of animal and plant populations and species, which could lead to a loss of ecosystem services essential for human survival; land degradation and land-use change; a pole-to-pole spread of toxic compounds; ocean acidification and eutrophication (dead zones); worsening of some aspects of the epidemiological environment (factors that make human populations susceptible to infectious diseases); depletion of increasingly scarce resources [6,7], including especially groundwater, which is being overexploited in many key agricultural areas [8]; and resource wars [9]. These are not separate problems; rather they interact in two gigantic complex adaptive systems: the biosphere system and the human socio-economic system. The negative manifestations of these interactions are often referred to as ‘the human predicament’ [10], and determining how to prevent it from generating a global collapse is perhaps the foremost challenge confronting humanity. The human predicament is driven by overpopulation, overconsumption of natural resources and the use of unnecessarily environmentally damaging technologies and socio-economic-political arrangements to service Homo sapiens’ aggregate consumption [11–17]. How far the human population size now is above the planet's long-term carrying capacity is suggested (conservatively) by ecological footprint analysis [18–20]. It shows that to support today's population of seven billion sustainably (i.e. with business as usual, including current technologies and standards of living) would require roughly half an additional planet; to do so, if all citizens of Earth consumed resources at the US level would take four to five more Earths. Adding the projected 2.5 billion more people by 2050 would make the human assault on civilization's life-support systems disproportionately worse, because almost everywhere people face systems with nonlinear responses [11,21–23], in which environmental damage increases at a rate that becomes faster with each additional person. Of course, the claim is often made that humanity will expand Earth's carrying capacity dramatically with technological innovation [24], but it is widely recognized that technologies can both add and subtract from carrying capacity. The plough evidently first expanded it and now appears to be reducing it [3]. Overall, careful analysis of the prospects does not provide much confidence that technology will save us [25] or that gross domestic product can be disengaged from resource use [26].

Our alternative is to reject the politics of technological production

Rather than focusing on production of technology, we should embrace our ability to shape and transform our subjectivity as consumers, embracing voluntary simplicity – this debate offers a crucial moment to produce alternative knowledge about everyday living practices

Alexander ‘11

(Samuel, University of Melbourne; Office for Environmental Programs/Simplicity Institute, “

Voluntary Simplicity as an Aesthetics of Existence”, Social Sciences Research Network, http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=1941087)

The aim of this paper, however, is not to present a thorough analysis of Foucault’s notion of an aesthetics of existence. Several such analyses have appeared in recent times (after years of unfortunate scholarly neglect), and much of this emerging commentary is very probing and insightful.12 But this is not the time to focus on furthering that critical discussion or even providing a comprehensive literature review of it. Instead, after providing a brief exposition of Foucault’s ethics, this paper will undertake to actually apply the idea of an aesthetics of existence to a particular subject of ethical concern, namely, to our role as ‘consumers’ in the context of First World overconsumption. This is an area that raises ethical questions concerning how we ought to live for two main reasons: firstly, due to the impact Western--‐style consumers are having on the natural environment; and secondly, due to the continued existence of poverty amidst plenty. There is, however, another perspective to consider also. A large body of sociological and psychological literature now exists indicating that Western--‐style consumption practices are often failing to provide meaning and fulfillment, even to those who have ‘succeeded’ in attaining a high material standard of living.13 These three consumption--‐related issues – ecological degradation, poverty amidst plenty, and consumer malaise – provide ample grounds for thinking that consumption is a proper subject for ethical engagement, in the Foucauldian sense of ethics as ‘the self enfgaging the self.’ If it is the case that our individual identities have been shaped, insidiously perhaps, by a social system that celebrates and encourages consumption without apparent limit – and it would not be unfair to describe consumer societies in these terms14 – then it may be that ethical practice today calls for a rethinking of our assumptions and attitudes concerning consumption, which might involve a deliberate reshaping of the self by the self. This paper will explore the possibility of such an ethics of consumption in the following ways. First, by explaining how neoclassical economics, which is arguably the most influential paradigm of thought in the world today, conceptualizes consumption as something that benefits both ‘self’ and ‘other’ and, therefore, as something that should be maximized. To the extent that modern consumers have internalized this conception of consumption, an ethics of consumption might involve engaging the self for the purpose of changing the self and creating something new. The second way an ethics of consumption will be explored will be through an examination of the theory and practice of ‘voluntary simplicity,’ a term that refers to an oppositional living strategy or ‘way of life’ with which people, somewhat paradoxically, perhaps, seek an increased quality of life through a reduction and restraint of one’s level of consumption.15 The paradox, so-­‐ called, consists in the attempt to live ‘more with less.’ Since voluntarily living simply means heading in the opposite direction to where most people in consumer societies (and increasingly elsewhere) seem to want to go, one would expect living simply to require a fundamentally creative engagement with life and culture, especially in contemporary consumer societies that seem to be predicated on the assumption that ‘more consumption is always better.’ This need for a fundamentally creative engagement with life is what prompted the present attempt to elucidate the idea of ‘voluntary simplicity as aesthetics of existence,’ and it is this attempt to infuse Foucauldian ethics with an emerging post-­‐consumerist philosophy of life that constitutes the original contribution of this paper. It is hoped that this practical application of Foucault’s ethics might also prompt others to consider how ethical engagement might produce new ways of being that are freer, more fulfilling, and yet less resource-­‐intensive and damaging than the modes of being which are dominant in consumer societies today. Could it be, for example, that the ‘Death of Man,’ to use Foucault’s phrase, was actually the first (and a necessary) phase in the demise of what one might call ‘homo consumicus’? And what forms of life, what modes of being, would or could materialize with the voluntary emergence of ‘homo post-­‐consumicus’? These are the large questions that motivated this study and in the following pages a preliminary attempt is made to grapple with them. The aim, however, is not to legitimate ‘what is already known,’16 since that would not be a very Foucauldian endeavor; rather, the aim is to explore whether or to what extent it is possible to ‘free thought from what it silently thinks,’17 in the hope that this might open up space to ‘think differently,’18 to think otherwise.

### K2

#### The aff reproduces neoliberal subjectivity, translating military risk calculations into an opportunity for market expansion – this logic screens out the structural violence caused by nuclear power and creates an invisible war against minorities and the environment

Jacobs 11

(Ron, activist journalist with a pretty legit epistemology, “No More Nukes!”, March 15th, 2011, http://dissidentvoice.org/2011/03/no-more-nukes/)

Nuclear power is the perfect metaphor for the current phase of monopoly capitalism — neoliberalism. It involves a concentration of power (literal and corporate) to effect its goal and depends on the government to provide military security to protect that power from getting into the “wrong hands.” Furthermore, thanks to laws pushed through by the energy industry, if a disaster should happen because of some kind of nuclear accident, the government limits the corporation’s liability for any damage and loss of life that might occur. As the “Declaration of Nuclear Resistance” of the New England anti-nuke group, the Clamshell Alliance, wrote in 1977: Nuclear power is dangerous to all living creatures and to their natural environment. The nuclear industry is designed to concentrate profits and the control of energy resources in the hands of a powerful few, undermining basic principles of human liberty. A nuclear power plant at Seabrook, New Hampshire, could lock our region into a suicidal path.1 This statement, in all its direct simplicity, remains true today. Despite the claims by such former anti-nuclear activists like Stewart Brand, nuclear power is a dangerous form of energy production. It is also incredibly inefficient if one contrasts the construction and security costs and the problems with waste disposal with the relatively brief life of nuclear power plants and the increase in energy costs to the consumer such plants entail in a profit-driven industry. Nuclear power is not green energy, no matter what the industry’s spokespeople or the likes of Stewart Brand say. The daily operation of nuclear power plants change the ecology in their immediate vicinity, heating water near the discharge facilities and releasing various waste elements of the process into the air. If an accident occurs, the ecological devastation is incalculable and continues for generations. In addition, a 1000-MWe nuclear power plant produces about 27 tons of spent nuclear fuel (unreprocessed) every year. The problems associated with the spent fuels disposal and storage are costly and dangerous (for centuries). The environmental and safety reasons barely touched on here are reason enough to oppose nuclear power. So are the costs associated with this form of energy production. It seems likely that other safer alternative forms of power production that don’t involve fossil fuels could be developed and produced for less than the overall costs of nuclear power. Yet, these forms, such as solar and wind, are not given the same emphasis as nuclear energy. Why? Could it be that the energy industry fears the loss of extraordinary profits and centralized control those forms might create? If one does not oppose nuclear energy for health and safety reasons, yet opposes war and the nature of neoliberal capitalism, then the fact that the energy industry’s love affair with nuclear power development is based on corporate efforts to maximize profits and recoup past investments rather than on meeting our real energy needs provides another reason to oppose it. So does the direct relationship between nuclear power plants and nuclear weapons. Where do you think all that depleted uranium (DU) ammunition came from? That’s right, the waste product of nuclear power — the gift that keeps on giving. Pretending that nuclear power is not dangerous, inefficient, and ridiculously expensive is no longer viable. The events in Japan once again make that perfectly clear.

#### The impact is extinction

Ehrenfeld ‘5,

(David, Dept. of Ecology, Evolution, and Natural Resources @ Rutgers University, “The Environmental Limits to Globalization”, *Conservation Biology* Vol. 19 No. 2 April 2005)

The known effects of globalization on the environment are numerous and highly significant. Many others are undoubtedly unknown. Given these circumstances, the first question that suggests itself is: Will globalization, as we see it now, remain a permanent state of affairs (Rees 2002; Ehrenfeld 2003a)? The principal environmental side effects of globalization—climate change, resource exhaustion (particularly cheap energy), damage to agroecosystems, and the spread of exotic species, including pathogens (plant, animal, and human)—are sufficient to make this economic system unstable and short-lived. The socioeconomic consequences of globalization are likely to do the same. In my book *The Arrogance of Humanism* (1981), I claimed that our ability to manage global systems, which depends on our being able to predict the results of the things we do, or even to understand the systems we have created, has been greatly exaggerated. Much of our alleged control is science fiction; it doesn’t work because of theoretical limits that we ignore at our peril. We live in a dream world in which reality testing is something we must never, never do, lest we awake. In 1984 Charles Perrow explored the reasons why we have trouble predicting what so many of our own created systems will do, and why they surprise us so unpleasantly while we think we are managing them. In his book *Normal Accidents*, which does not concern globalization, he listed the critical characteristics of some of today’s complex systems. They are highly interlinked, so a change in one part can affect many others, even those that seem quite distant. Results of some processes feed back on themselves in unexpected ways. The controls of the system often interact with each other unpredictably. We have only indirect ways of finding out what is happening inside the system. And we have an incomplete understanding of some of the system’s processes. His example of such a system is a nuclear power plant, and this, he explained, is why system-wide accidents in nuclear plants cannot be predicted or eliminated by system design. I would argue that globalization is a similar system, also subject to catastrophic accidents, many of them environmental—events that we cannot define until after they have occurred, and perhaps not even then. The comparatively few commentators who have predicted the collapse of globalization have generally given social reasons to support their arguments. These deserve some consideration here, if only because the environmental and social consequences of globalization interact so strongly with each other. In 1998, the British political economist John Gray, giving scant attention to environmental factors, nevertheless came to the conclusion that globalization is unstable and will be short-lived. He said, “There is nothing in today’s global market that buffers it against the social strains arising from highly uneven economic development within and between the world’s diverse societies.” The result, Gray states, is that “The combination of [an] unceasing stream of new technologies, unfettered market competition and weak or fractured social institutions” has weakened both sovereign states and multinational corporations in their ability to control important events. Note that Gray claims that not only nations but also multinational corporations, which are widely touted as controlling the world, are being weakened by globalization. This idea may come as a surprise, considering the growth of multinationals in the past few decades, but I believe it is true. Neither governments nor giant corporations are even remotely capable of controlling the environmental or social forces released by globalization, without first controlling globalization itself. Two of the social critics of globalization with the most dire predictions about its doom are themselves masters of the process. The late Sir James Goldsmith, billionaire financier, wrote in 1994, It must surely be a mistake to adopt an economic policy which makes you rich if you eliminate your national workforce and transfer production abroad, and which bankrupts you if you continue to employ your own people.... It is the poor in the rich countries who will subsidize the rich in the poor countries. This will have a serious impact on the social cohesion of nations. Another free-trade billionaire, George Soros, said much the same thing in 1995: “The collapse of the global marketplace would be a traumatic event with unimaginable consequences. Yet I find it easier to imagine than the continuation of the present regime.” How much more powerful these statements are if we factor in the environment! As globalization collapses, what will happen to people, biodiversity, and ecosystems? With respect to people, the gift of prophecy is not required to answer this question. What will happen depends on where you are and how you live. Many citizens of the Third World are still comparatively self-sufficient; an unknown number of these will survive the breakdown of globalization and its attendant chaos. In the developed world, there are also people with resources of self-sufficiency and a growing understanding of the nature of our social and environmental problems, which may help them bridge the years of crisis. Some species are adaptable; some are not. For the non- human residents of Earth, not all news will be bad. Who would have predicted that wild turkeys (Meleagris gallopavo), one of the wiliest and most evasive of woodland birds, extinct in New Jersey 50 years ago, would now be found in every county of this the most densely populated state, and even, occasionally, in adjacent Manhattan? Who would have predicted that black bears (Ursus americanus), also virtually extinct in the state in the mid-twentieth century, would now number in the thousands (Ehrenfeld 2001)? Of course these recoveries are unusual—rare bright spots in a darker landscape. Finally, a few ecological systems may survive in a comparatively undamaged state; most will be stressed to the breaking point, directly or indirectly, by many environmental and social factors interacting unpredictably. Lady Luck, as always, will have much to say. In his book *The Collapse of Complex Societies,* the archaeologist Joseph Tainter (1988) notes that collapse, which has happened to all past empires, inevitably results in human systems of lower complexity and less specialization, less centralized control, lower economic activity, less information flow, lower population levels, less trade, and less redistribution of resources. All of these changes are inimical to globalization. This less-complex, less-globalized condition is probably what human societies will be like when the dust settles. I do not think, however, that we can make such specific predictions about the ultimate state of the environment after globalization, because we have never experienced anything like this exceptionally rapid, global environmental damage before. History and science have little to tell us in this situation. The end of the current economic system and the transition to a postglobalized state is and will be accompanied by a desperate last raid on resources and a chaotic flurry of environmental destruction whose results cannot possibly be told in advance. All one can say is that the surviving species, ecosystems, and resources will be greatly impoverished compared with what we have now, and our descendants will not thank us for having adopted, however briefly, an economic system that consumed their inheritance and damaged their planet so wantonly. Environment is a true bottom line—concern for its condition must trump all purely economic growth strategies if both the developed and developing nations are to survive and prosper. Awareness of the environmental limits that globalized industrial society denies or ignores should not, however, bring us to an extreme position of environmental determinism. Those whose preoccupations with modern civilization’s very real social problems cause them to reject or minimize the environmental constraints discussed here ( Hollander 2003) are guilty of seeing only half the picture. Environmental scientists sometimes fall into the same error. It is tempting to see the salvation of civilization and environment solely in terms of technological improvements in efficiency of energy extraction and use, control of pollution, conservation of water, and regulation of environmentally harmful activities. But such needed developments will not be sufficient—or may not even occur— without corresponding social change, including an end to human population growth and the glorification of consumption, along with the elimination of economic mechanisms that increase the gap between rich and poor. The environmental and social problems inherent in globalization are completely interrelated—any attempt to treat them as separate entities is unlikely to succeed in easing the transition to a postglobalized world. Integrated change that combines environmental awareness, technological innovation, and an altered world view is the only answer to the life-threatening problems exacerbated by globalization (Ehrenfeld 2003b). If such integrated change occurs in time, it will likely happen partly by our own design and partly as an unplanned response to the constraints imposed by social unrest, disease, and the economics of scarcity. With respect to the planned component of change, we are facing, as eloquently described by Rees (2002), “the ultimate challenge to human intelligence and self-awareness, those vital qualities we humans claim as uniquely our own. *Homo sapiens* will either. . .become fully human or wink out ignominiously, a guttering candle in a violent storm of our own making.” If change does not come quickly, our global civilization will join Tainter’s (1988) list as the latest and most dramatic example of collapsed complex societies. Is there anything that could slow globalization quickly, before it collapses disastrously of its own environmental and social weight? It is still not too late to curtail the use of energy, reinvigorate local and regional communities while restoring a culture of concern for each other, reduce nonessential global trade and especially global finance (Daly & Cobb 1989), do more to control introductions of exotic species (including pathogens), and accelerate the growth of sustainable agriculture. Many of the needed technologies are already in place. It is true that some of the damage to our environment—species extinctions, loss of crop and domestic animal varieties, many exotic species introductions, and some climatic change— will be beyond repair. Nevertheless, the opportunity to help our society move past globalization in an orderly way, while there is time, is worth our most creative and passionate efforts. The citizens of the United States and other nations have to understand that our global economic system has placed both our environment and our society in peril, a peril as great as that posed by any war of the twentieth century. This understanding, and the actions that follow, must come not only from enlightened leadership, but also from grassroots consciousness raising. It is still possible to reclaim the planet from a self-destructive economic system that is bringing us all down together, and this can be a task that bridges the divide between conservatives and liberals. The crisis is here, now. What we have to do has become obvious. Globalization can be scaled back to manageable proportions only in the context of an altered world view that rejects materialism even as it restores a sense of communal obligation. In this way, alone, can we achieve real homeland security, not just in the United States, but also in other nations, whose fates have become so thoroughly entwined with ours within the global environment we share.

#### The judge should vote negative to endorse globalization from below

#### The alt develops an alternative ethical orientation towards economics, grounding it in an ethical empathy towards the other – re-orienting our methodological approach to the economy produces a new system of democratic institution and unites transnational movements

Choi, Murphy, and Caro 4

Jung Min, John W, Manuel J, Professor of Sociology SDSU, Professor of Sociology University of Miami, Professor of Sociology Barry University, Globalization with a Human Face, pg. 6-9

Many critics have begun to wonder why hamburgers and jeans can be globalized, but the spread of themes such as peace or justice is thought by many politicians to be impossible to generalize. What many persons are calling for, especially in the Third World, is an alternative approach to globalization. Along with justice, they want to globalize resistance to current historical trends. They want to call a halt, for example, to the economic hardships and rape of the environment that have accompanied the rise of neoliberalism. This new strategy is referred to in many circles as "globalization from below." The point is that current policies have been driven from above from the capitalist centers around the world—and reflect the economic and cultural interests of these powerful classes. Most other persons, accordingly, are viewed as simply a cheap source of labor or a possible market for cheap goods. And because of this role in the world capitalist system, their opportunities are severely restricted. Even if they conform to the cultural mandates of the market, the likelihood of economic advancement is not very great. This sort of mobility is simply not a part of the role persons play on the economic periphery. What actually occurs, indeed, is that the system of controls, which are found in the economic centers, are reproduced on the periphery, but with more immediate devastation. The imposition of consumerism and materialism, for example, undermine the local economy and community supports, thereby increasing strife and reinforcing local elites and their ties to foreign investors. The old oligarchies are thus strengthened, while local institutions become more dependent on outside intervention. The resulting hierarchy, accordingly, is more powerful than ever before. As might be imagined, globalization from below has a very different agenda. Different values guide economic development, in short, while new ways of organizing society are sought. Instead of profit, for example, the general improvement of a community may be of prime importance. Likewise, emphasis may be placed on strengthening civil society, and thus ,advancing democracy, rather than identifying markets and potential investors. In general, globalization from below is driven by local concerns and the masses of persons who have little influence in corporate boardrooms. These are the people--the majority of the world's inhabitants--who are ignored unless their labor is suddenly profitable. At the core of this new globalization is often the call for a postcapitalist logic. Novel ways of looking at, for example, production and consumption are regularly a part of this project, in addition to new definitions of work and personal and group identity. Central to this scenario is that persons can remake themselves entirely, and nothing is exempt from revision. What proponents of globalization from below have done, in effect, is to seize control of their history and invent a new future. They have decided that history can be made, rather than merely experienced, and that there is no inherent *telos* to this process. The past is nothing, therefore, other than a point of departure of a new course of action. In the truest sense of the term, these activists are utopian thinkers. They are not enamored by reality and are convinced that new social arrangements, which have never existed and may be very difficult to create, are possible. As many students chanted during the 1960s, they are demanding the impossible and do not want to settle for more pragmatic substitutes. They are simply asking that persons strive to fulfill their dreams. But these demands are not based on fantasy. Instead, proponents of globalization from below are trying to emphasize an idea advanced by Marx: that is, nothing that humans imagine is foreign to them. Consequently, utopian ideals or practices are simply inventions that have not , yet been realized. Through effort and determination, and the absence foreign subversion, an economic system that is founded on justice might eventually be enacted. Merely because this vision has not been actualized, does not necessarily signal that such an aim contravenes human nature or is hopelessly flawed. The problem may simply be that persons have been unwilling or unable to purge themselves of certain biases or predispositions, and thus have never embarked on the creation of a new reality. Those who champion globalization from below, however, are not politically naive. They understand that powerful interests that benefit from injustice and inequality have intervened in the past to undermine various utopian projects. The proper dream is important, but so is the ability to implement this vision. These new utopians are thus trying to convince the public to restrain those who want to destroy these projects. What they are saying, in short, is that justice should be given the opportunity to thrive. THE RESTORATION OF COMMUNITY Various critics are saying that only the restoration of a strong sense of community can guarantee the success of globalization. What is meant by community, however, is in dispute. After all, even neoliberals lament the current loss of community that has ensued in the world economy. From their perspective, a community of effective traders would strengthen everyone's position at the marketplace. Advocates of globalization from below, as might be expected, have something very different in mind. They are not calling for the general assimilation of persons to a cosmopolitan ideal, which is thought to instill civility and enforce rationality. Persons who want to join the world market, as was noted earlier, are thought to need a good dose of these traits. Nonetheless, there is a high price for entry into this community—cultural or personal uniqueness must be sacrificed to promote effective economic discourse. Such reductionism, however, is simply unacceptable in a large part of the globe that is beginning to appreciate local customs and the resulting diversity. What these new activists want, therefore, is a community predicated on human solidarity. This sort of community, as Emmanuel Levinas describes, is focused on ethics rather than metaphysics." His point is that establishing order does not require the internalization of a single ideal by all persons, but simply their mutual recognition. The recognition of others as different, but connected to a common fate, is a powerful and unifying principle. Persons are basically united through the recognition and appreciation of their uniqueness. As should be noted, this image is encompassing but not abstract. Uniformity, in other words, is replaced by the juxtaposition of diversity as the cement that binds a community together. Like a montage, a community based on human solidarity is engendered at the boundaries of its various and diverse elements. The genius of this rendition of community is that no one is by nature an outsider, and thus deserving of special treatment. Many of the problems that exist today, in fact, result from persons sitting idly while their neighbors are singled out as different and discriminated against or exploited. When persons view themselves to be fundamentally united, on the other hand, such mistreatment is unlikely, because community members protect and encourage one another. Indeed, this sort of obligation is neither selective nor optional among those who belong to a true community. Basically the idea is that if no one is an outsider, there are no persons or groups to exploit. Such a community, moreover, does not require extraordinary actions on the part of its members to end racism, sexism, or economic exploitation. All that is required is persons refuse to turn away and say nothing when such discrimination is witnessed. By refusing to go along with these practices, any system that survives because of discrimination or exploitation will eventually grind to a halt. Clearly, there is an implicit threat behind current trends of globalization. Because globalization as it is currently defined is inevitable, anyone who expects to be treated as rational and civilized must accept some temporary pain. Old cultural ways will simply have to be abandoned, and a transition to the new economic realities. Those who cannot tolerate the mistreatment of fellow community members any longer appear to be a part of this change, however, they are obligated to bare witness to these abuses. And by refusing to be complicit these actions, business as usual cannot continue. A globalization of can be mounted, therefore, that might be able to create a more humane world. In the face of mounting darkness—increasing economic hardship and degradation—why not seriously entertain the possibility that social life can be organized in less alienating ways? With little left to why not pursue alternative visions?

### NG DA

#### Natural gas prices increasing because of use in electricity generation

Sato 11/11, Reporter for the Sentinel and Enterprise

(Hiroko, Natural-gas prices are on the rise, www.sentinelandenterprise.com/news/ci\_24498060/natural-gas-prices-are-rise)

Nationwide, 27 percent of power is generated from natural gas, compared to 17 percent a decade ago, according to Edward Cahill, research associate at Lux Research, Inc., of Boston. Growing uses of natural gas for power production increases prices for residential gas heating, Cahill said. That is particularly a problem in New England, where the pipes become congested like a traffic jam in narrow streets. That causes price spikes during cold winter months, according to the federal Department of Energy. "That overproduction made the prices fall to all-time lows," Cahill said, making it difficult for producers to profit. So some companies stopped production. Reduced supply has resulted in natural-gas prices bouncing back recently, Cahill said. Because of that, coal again became an economic choice for power production in certain parts of the country, according to the DOR. But in New England, natural-gas usage for power production continues to grow. As of Oct. 1, natural gas supplied through Algonquin Gas Transmission Company -- the principal interstate natural-gas pipeline serving the Boston area -- cost $6.76 per MMBtu, nearly double $3.39 a year ago.

#### Expanding nuclear power drives down natural gas prices

Adams, Chief Contributor for Atomic Energy Insights and small nuclear plant operator/designer, 09

(Nuclear Energy Growth Might Turn Promises of Low Natural Gas Prices Into a Reality, atomicinsights.com/2009/11/nuclear-energy-growth-might-turn-promises-of-low-natural-gas-prices-into-a-reality.html)

However, I am not the only energy industry observer who understands the interrelationships between various fuel choices. If, in fact, people in positions to make major decisions about energy policy follow my advice and reduce the barriers that currently slow down nuclear power plant construction, one of the effects of that might be to make it seem like the natural gas salesmen were correct in their promises of abundant supplies. As more nuclear power plants come on line, their output would displace power that is currently being produced by burning natural gas. Their output might even be enough to drive down electrical power prices to a level that would make all-electric home and commercial heating and cooling systems an economical choice. That would also free up more gas and lower the prices of that newly abundant fuel – an abundance produced by falling demand instead of by a growing supply. That effect would be very similar to the way the market behaved for well over a decade after the last rapid build out of nuclear power plants. From 1985-2000, natural gas prices all over the world were quite low – Russia was selling gas to favored customers for about $50 per 1000 cubic meters (roughly $1.40 per thousand cubic feet) while US prices hovered around $2 per million BTU (which is also very close to $2 per thousand cubic feet). Though some might disagree, it is hard to overlook the fact that those low prices followed an era where nuclear energy production increased rapidly. That era of low gas prices made investors in nuclear generation facilities look a little silly while the people who built simple gas turbines and burned cheap gas looked like sage energy price prediction geniuses.

#### EPA regulations mean low natural gas prices stop the shift to CCS

McCarthy and Copeland 2011 - Specialist in Environmental Policy AND Specialist in Resources and Environmental Policy (August 8, James E. and Claudia, “EPA’s Regulation of Coal-Fired Power: Is a “Train Wreck” Coming? ” <http://www.lawandenvironment.com/uploads/file/CRS-EPA.pdf>)

What these scenarios tell us is that utilities will look at the impending regulations and decide what to do largely based on their assumptions regarding the cost of the alternatives—natural gas (where it’s available) being the most often discussed, but others include conservation, wind, and other renewable resources. If they expect the price of gas to remain low or the cost of other alternatives to be competitive, their primary method of compliance likely will be to retire old coal plants and switch to gas or the alternatives. If they expect the price of gas or other alternatives to be high, they’ll invest the money in retrofitting the coal plants to reduce their emissions. As the NERC report stated: Unit retirement is assumed when the generic required cost of compliance with the proposed environmental regulation exceeds the cost of replacement power.... For the purpose of this assessment, replacement power costs were based on new natural gas generation capacity. If the unit’s retrofit costs are less than the cost of replacement power, then the unit is marked to be upgraded and retrofitted to meet the requirements of the potential environmental regulation., i.e., it is not considered “economically vulnerable” for retirement. 99 As utilities attempt to forecast the price of natural gas, their conclusions will be based in large part on assumptions as to whether gas will be available in sufficient quantities to meet the increased demands of electric power generation. Natural gas faces its own controversies, as domestic production increasingly relies on “unconventional” sources such as shale, from which gas is obtained by hydraulic fracturing. (For additional information on this practice, see CRS Report R41760, Hydraulic Fracturing and Safe Drinking Water Act Issues, by Mary Tiemann and Adam Vann.) Nevertheless, a 2009 NERC report stated: Concerns regarding the availability and deliverability of natural gas have diminished during 2009 as North American production has begun to trend upward due to a shift toward unconventional gas production from shale, tight sands, and coal-bed methane reservoirs. In its latest biennial assessment, the Potential Gas Committee increased U.S. natural gas resources by nearly 45 percent to 1,836 TCF [trillion cubic feet], largely because of increases in unconventional gas across many geographic areas. Pipeline capacity has similarly increased, by 15 BCFD [billion cubic feet per day] in 2007 and 44 BCFD in 2008, with an increase of 35 BCFD expected in 2009. Storage capacity has also increased substantially. 100 In short, the “train wreck” facing the coal-fired electric generating industry, to the extent that it exists, is being caused by cheap, abundant natural gas as much as by EPA regulations. As John Rowe, Chairman and CEO of Exelon Corporation, recently stated: “These regulations will not kill coal.... In fact, modeling done on the impacts of these rules shows that up to 50% of retirements are due to the current economics of the plant due to natural gas and coal prices.

#### Expanding nuclear power drives down natural gas prices

Adams, Chief Contributor for Atomic Energy Insights and small nuclear plant operator/designer, 09

(Nuclear Energy Growth Might Turn Promises of Low Natural Gas Prices Into a Reality, atomicinsights.com/2009/11/nuclear-energy-growth-might-turn-promises-of-low-natural-gas-prices-into-a-reality.html)

However, I am not the only energy industry observer who understands the interrelationships between various fuel choices. If, in fact, people in positions to make major decisions about energy policy follow my advice and reduce the barriers that currently slow down nuclear power plant construction, one of the effects of that might be to make it seem like the natural gas salesmen were correct in their promises of abundant supplies. As more nuclear power plants come on line, their output would displace power that is currently being produced by burning natural gas. Their output might even be enough to drive down electrical power prices to a level that would make all-electric home and commercial heating and cooling systems an economical choice. That would also free up more gas and lower the prices of that newly abundant fuel – an abundance produced by falling demand instead of by a growing supply. That effect would be very similar to the way the market behaved for well over a decade after the last rapid build out of nuclear power plants. From 1985-2000, natural gas prices all over the world were quite low – Russia was selling gas to favored customers for about $50 per 1000 cubic meters (roughly $1.40 per thousand cubic feet) while US prices hovered around $2 per million BTU (which is also very close to $2 per thousand cubic feet). Though some might disagree, it is hard to overlook the fact that those low prices followed an era where nuclear energy production increased rapidly. That era of low gas prices made investors in nuclear generation facilities look a little silly while the people who built simple gas turbines and burned cheap gas looked like sage energy price prediction geniuses.

#### Low prices key to gas exports

Slutz, President and Managing Director of Global Energy Strategies LLC, 12

(9/4, The Shale Gas Revolution Implications for U.S. and Canadian Energy Policy and Asian Energy Security, www.nbr.org/downloads/pdfs/ETA/Slutz\_interview\_09042012.pdf

It is important to appreciate that before natural gas exports can occur, industry must spend several billion dollars for each export terminal to build the liquefaction facility. To make this decision, companies must believe that U.S. natural gas prices will remain low enough and Asia prices high enough to make money on exports to Asia for the entire term of a 20-year contract. While the differentials between Asia and North America currently support trade, the cost of liquefaction and shipping will account for a significant amount of that differential. Asia’s LNG contracts are based on oil prices. At oil prices below $80 per barrel, importing LNG from North America is less attractive to Asian buyers. As oil prices rise, the economics of importing gas from North America become more attractive. The United States does have a very large resource base, which will support production of more natural gas than will be consumed domestically. The market, not government, will be the best mechanism to determine the extent of exports. Most projections, including from the EIA, anticipate some level of North American gas exports in the next four to eight years. The level of exports will be determined by the cost of gas and the cost of converting it to LNG, as well as the cost of transporting the gas to market. The United States has huge gas resources, but the cost of production varies between different areas. While there is plenty of gas for domestic use and exports, as we move into areas that cost more to develop, there is less incentive to export gas. The other important issue to remember is that significant gas resources exist around the world. Gas exports from the United States directly compete with other supplies

 and the least costly supplies will be the ones that go to market. Economics will ultimately determine how much gas is exported.

**US gas exports collapse the Russian economy**

Mead, Professor of Foreign Affairs at Bard, 12

(North American Shale Gas Gives Russia Serious Headache, blogs.the-american-interest.com/wrm/2012/04/25/north-american-shale-gas-gives-russia-serious-headache/)

North America’s shale gas boom is chipping away at the market for gas producers like Russia. What’s more, if the United States becomes a gas exporter, Russia’s customers (especially in Europe) could decide to cancel expensive contracts with Gazprom in favor of cheaper American natural gas. “If the US starts exporting LNG to Europe and Asia, it gives [customers there] an argument to renegotiate their prices with Gazprom and Qatar, and they will do it,” says Jean Abiteboul, head of Cheniere supply & marketing. Gazprom supplied 27 percent of Europe’s natural gas in 2011. While American gas is trading below $2 per MMBTU (million British thermal units), Gazprom’s prices are tied to crude oil markets, and its long-term contracts charge customers roughly $13 per MMBTU, says the FT. European customers would love to reduce their dependence on Gazprom and start to import American gas. Already Gazprom has had to make concessions to its three biggest customers, and others are increasingly dissatisfied with their contracts. Worse, from Russia’s point of view: evidence that western and central Europe contain substantial shale gas reserves of their own. Fracking is unpopular in thickly populated, eco-friendly Europe, but so are high gas prices. All this ought to give Russia serious heartburn. Eroding Gazprom’s dominance of the European energy market would be a major check on Russian economic growth and political influence.

#### Extinction

Filger, columnist and founder of GlobalEconomicCrisis.com, 09

(Russian Economy Faces Disastrous Free Fall Contraction, www.huffingtonpost.com/sheldon-filger/russian-economy-faces-dis\_b\_201147.html)

In Russia, historically, economic health and political stability are intertwined to a degree that is rarely encountered in other major industrialized economies. It was the economic stagnation of the former Soviet Union that led to its political downfall. Similarly, Medvedev and Putin, both intimately acquainted with their nation's history, are unquestionably alarmed at the prospect that Russia's economic crisis will endanger the nation's political stability, achieved at great cost after years of chaos following the demise of the Soviet Union. Already, strikes and protests are occurring among rank and file workers facing unemployment or non-payment of their salaries. Recent polling demonstrates that the once supreme popularity ratings of Putin and Medvedev are eroding rapidly. Beyond the political elites are the financial oligarchs, who have been forced to deleverage, even unloading their yachts and executive jets in a desperate attempt to raise cash. Should the Russian economy deteriorate to the point where economic collapse is not out of the question, the impact will go far beyond the obvious accelerant such an outcome would be for the Global Economic Crisis. There is a geopolitical dimension that is even more relevant then the economic context. Despite its economic vulnerabilities and perceived decline from superpower status, Russia remains one of only two nations on earth with a nuclear arsenal of sufficient scope and capability to destroy the world

 as we know it. For that reason, it is not only President Medvedev and Prime Minister Putin who will be lying awake at nights over the prospect that a national economic crisis can transform itself into a virulent and destabilizing social and political upheaval. It just may be possible that U.S. President Barack Obama's national security team has already briefed him about the consequences of a major economic meltdown in Russia for the peace of the world. After all, the most recent national intelligence estimates put out by the U.S. intelligence community have already concluded that the Global Economic Crisis represents the greatest national security threat to the United States, due to its facilitating political instability in the world. During the years Boris Yeltsin ruled Russia, security forces responsible for guarding the nation's nuclear arsenal went without pay for months at a time, leading to fears that desperate personnel would illicitly sell nuclear weapons to terrorist organizations. If the current economic crisis in Russia were to deteriorate much further, how secure would the Russian nuclear arsenal remain? It may be that the financial impact of the Global Economic Crisis is its least dangerous consequence.

### Adv CP

#### Text: The United States federal government should provide all necessary support for the construction of ten super chimneys

#### Ten super chimneys are more than enough to solve all warming – They facilitate heat exchange and cause cloud formation

Pesochinsky 8 (Michael, engineer. “How the super-chimney will cool the atmosphere” <http://www.superchimney.org/atmosphere.html>)

The super-chimney will cool the Earth atmosphere by facilitating the heat exchange, and this is the most important aspect of the super-chimney. If we think of Global Warming, we should understand that the phenomenon is caused not by the planet receiving more heat but rather by increasing the heat capacity of the atmosphere due to the greenhouse gases. Respectively, the super-chimney will change the amount of heat exhaled by the planet. It will accelerate the rate of the heat exchange in atmosphere, which will result in the reduction of the Earth atmosphere temperature. There are three cooling mechanisms for air: convection, conduction and radiation. Without getting into fine details, for our planet it means the following: the planet at large receives and looses energy only via radiation, thus radiation actually is deciding factor on how much heat the planet receives. As for the air processes within the atmosphere, convection and conduction are the two determinative powers. Normally, heat radiation comes from sun and then it is partially absorbed by the atmosphere while it travels through. Then the heat radiation is partially absorbed by the planet surface. The other part of heat radiation is reflected back into space. The reflected heat travels back through the atmosphere and naturally, part of it is again absorbed by the atmosphere. The super-chimney will facilitate air convection by bringing masses of warm air at high altitude, resulting in the warm air coming out of the super-chimney exit. When the heat from the air radiates out it will be already at high altitude thus the amount of energy reabsorbed by the atmosphere will be less, because there will be a thinner layer of air for heat to travel through. Therefore, more heat will be leaving the atmosphere, thus, reducing the atmosphere temperature. Additionally, as it was explained above, the super-chimney will create rain and clouds. Clouds will be reflecting some sunlight thus, additionally cooling the atmosphere by reducing the total amount of sun radiation received by the planet. According to the calculations, it will take 10 super-chimneys to offset the heat surplus in the Earth Atmosphere, which causes Global Warming. (See Attachment A: Calculations). The calculations do not take into account that the super-chimney will cause extensive cloud formations, which will increase the amount of sun radiation reflected back into space. Thus, we will need fewer than 10 super-chimneys to offset the effects of Global Warming.

### WAR

**Great power conflict still possible – could go nuclear.**

Harald **Muller**, director of the Peace Research Institute Frankfurt in Gerniany and a profcssor of international relations at Frankfurt University, Spring **2008**, Washington Quarterly, p.68

A power transition creates dangerous times.’ Most challenges to a hegemon in world history, whether successful or not, have precipitated war or a series of wars. Today’s interdependence will surely serve to make great powers cautious about armed conflict, but **it cannot** completely **guarantee such a conflict will not occur**. Bones of contention exis**t**, notably between the United States and China: Taiwan, the South China Sea, and the competition for Persian Gulf and Central Asian energy resources. Although there exists a naive belief that great-power war has been eliminated as a possibility in world po**litics, exaggerated complacency could become extremely dangerous.** Interdependence itself and advanced weaponry, **nuclear weapons included**, would mean that a violent contest among the big powers would be an unmitigated catastrophe. The relationships among those powers must be carefully managed if a clash is to be avoided, and nuclear weapons reductions are an essential contribution to this management.

**Nuclear war would create a dust-induced winter that causes extinction**

**Phillips**, PhD, Physics, Cambridge, **2000**

(Alan, , Nuclear Winter Revisited, Oct, www.peace.ca/nuclearwinterrevisited.htm)

Altogether, nuclear winter would be an ecological disaster of the same sort of magnitude as the major extinctions of species that  have occurred in the past, the most famous one being 65 million years ago at the cretaceous extinction.  Of all the species living at the time, about half became extinct.  The theory is that a large meteor made a great crater in the Gulf of California, putting a trillion tons of rock debris into the atmosphere.  That is a thousand times as much rock as is predicted for a nuclear war, but the soot from fires blocks sunlight more effectively than rock debris.  In nuclear winter there would also be radioactive contamination giving worldwide background radiation doses many times larger than has ever happened during the 3 billion years of evolution.  The radiation would notably worsen things for existing species, though it might, by increasing mutations, allow quicker evolution of new species (perhaps mainly insects and grasses) that could tolerate the post-war conditions.  (I should just mention that there is no way the radioactivity from a nuclear war could destroy "all life on earth".  People must stop saying that.  There will be plenty of evolution after a war, but **it may not include us**.)

**Seriously, there will be wars: economics, security dilemma, nationalism**

**Mearsheimer**, Distinguished Professor of Political Science, **1999**.

(John Mearsheimer, “Is Major War Obsolete?” 1999, http://www.ciaonet.org/conf/cfr10/index.html)

A second reason that states go to war which, of course, is dear to the heart of realists like me, and that’s to enhance their security. Take the United States out of Europe, put the Germans on their own; you got the Germans on one side and the Russians on the other, and in between a huge buffer zone called eastern or central Europe. Call it what you want. Is it impossible to imagine the Russians and the Germans getting into a fight over control of that vacuum? Highly likely, no, but feasible, for sure. Is it hard to imagine Japan and China getting into a war over the South China Sea, not for resource reasons but because Japanese sea-lines of communication run through there and a huge Chinese navy may threaten it? I don’t think it’s impossible to imagine that.  What about nationalism, a third reason? China, fighting in the United States over Taiwan? You think that’s impossible? I don’t think that’s impossible. That’s a scenario that makes me very nervous. I can figure out all sorts of ways, none of which are highly likely, that the Chinese and the Americans end up shooting at each other. It doesn’t necessarily have to be World War III, but it is great-power war. Chinese and Russians fighting each other over Siberia? As many of you know, there are huge numbers of Chinese going into Siberia. You start mixing ethnic populations in most areas of the world outside the United States and it’s usually a prescription for big trouble. Again, not highly likely, but possible. I could go on and on, positing a lot of scenarios where great powers have good reasons to go to war against other great powers.  Second reason: There is no question that in the twentieth century, certainly with nuclear weapons but even before nuclear weapons, the costs of going to war are very high. But that doesn’t mean that war is ruled out. The presence of nuclear weapons alone does not make war obsolescent. I will remind you that from 1945 to 1990, we lived in a world where there were thousands of nuclear weapons on both sides, and there was nobody running around saying, “ War is obsolescent.” So you can’t make the argument that the mere presence of nuclear weapons creates peace. India and Pakistan are both going down the nuclear road. You don’t hear many people running around saying, “ That’s going to produce peace.” And, furthermore, if you believe nuclear weapons were a great cause of peace, you ought to be in favor of nuclear proliferation. What we need is everybody to have a nuclear weapon in their back pocket. You don’t hear many people saying that’s going to produce peace, do you?

### AT: Solvency

#### Takes too long and can’t solve

Travis Madsen and Tony Dutzik (Frontier Group), Bernadette Del Chiaro and Rob Sargent (Environment America Research & Policy Center) - November 2009, GENERATING FAILURE: How Building Nuclear Power Plants Would Set America Back in the Race Against Global Warming, <http://www.environmentiowa.org/sites/environment/files/reports/Generating-Failure---Environment-Iowa---Web.pdf>

Far from being a solution to global warming, nuclear power will actually set America back in the race to reduce pollution. Nuclear power is too slow and too expensive to make enough of a difference in the next two decades. Moreover, nuclear power is not necessary to provide clean, carbon-free electricity for the long haul. The up-front capital investment required to build 100 new nuclear reactors could prevent twice as much pollution over the next 20 years if invested in energy efficiency and clean, renewable energy instead. Taking into account the ongoing costs of running the nuclear plants, a clean energy path would deliver as much as five times more progress for the money. Early action matters in the fight against global warming. ƒƒ The more total carbon dioxide pollution that humanity emits into the atmosphere, the greater the warming – and consequent damage. Earlier action allows us more flexibility to respond to an evolving understanding of humanity’s role in shaping the climate. ƒƒ According to current science, humanity as a whole can emit no more than 1 trillion metric tons of carbon dioxide from 2000 through 2050 in order to have a 75 percent chance of limiting the global temperature increase to 3.6° F above the pre-industrial era – a target the international community has set to limit the severity of global warming impacts. This 1 trillion metric tons is our “carbon budget.” ƒƒ To facilitate keeping total emissions within this budget, a panel of distinguished Nobel Prizewinning scientists have called on developed nations to reduce their emissions of global warming pollution by 25 to 40 percent below 1990 levels by 2020. ƒƒ Reducing emissions from power plants holds large potential for early progress. The share of the U.S. emissions budget available to electric power plants could be as little as 34 billion metric tons of carbon dioxide (CO2) from 2010 cumulatively through 2050. New nuclear reactors would be built too slowly to reduce global warming pollution in the near term, and would actually increase the scale of action required in the future. ƒƒ No new reactors are now under construction in the United States. The nuclear industry will not complete the first new reactor until at least 2016, optimistically assuming construction will take four years after regulatory approval. ƒƒ However, it is likely that no new nuclear reactors could be online until 2018 or later. During the last wave of nuclear construction in the United States, the average reactor took nine years to build. New reactors are likely to experience similar delays. For example, a new reactor now under construction in Finland is at least three years behind schedule after a series of quality control failures. ƒƒ The American nuclear industry is not ready to move quickly. No American power company has ordered a new nuclear power plant since 1978, and all reactors ordered after the fall of 1973 ended up cancelled. As a result, domestic manufacturing capability for nuclear reactor parts has withered and trained personnel are scarce. ƒƒ Even if the nuclear industry managed to complete 100 new reactors in the United States by 2030 – the level of construction advocated by supporters of nuclear power – new nuclear power plants could still only reduce cumulative power plant emissions by 12 percent over the next two decades, leading to a higher and later peak in pollution. As a result, America would burn through its 40- year electric sector carbon budget in just 15 years. (See Figure ES-1.) In contrast, energy efficiency and renewable energy sources can make an immediate contribution toward reducing global warming pollution. ƒƒ Clean energy can begin cutting emissions immediately. Energy efficiency programs are already reducing electricity consumption by 1-2 percent below forecast levels annually in leading states, and the U.S. wind industry is already building the equivalent of three nuclear reactors per year in wind farms, and growing rapidly. With the up-front capital investment required to build 100 new nuclear reactors, America could prevent twice as much pollution in the next 20 years by investing in clean energy instead. (Midpoint estimate, see Figure ES-1 and page 21 for more details.) ƒƒ However, even this level of investment in clean energy would not be enough to keep U.S. power plant emissions within budget. (See Figure ES-1.) America should cut power plant emissions on the order of 50 percent within the next decade to limit the worst consequences of global warming. Nuclear power is expensive and will divert resources from more cost-effective energy strategies. ƒƒ Building 100 new nuclear reactors would require an up-front capital investment on the order of $600 billion (with a possible range of $250 billion to $1 trillion), diverting money away from cleaner and cheaper solutions. ƒƒ Any up-front investment in nuclear power would lock in additional expenditures over time. Over the life of a new reactor, the electricity it produces could cost in the range of 12 to 20 cents per kilowatt-hour, or more. In contrast, a capital investment in energy efficiency actually pays us back several times over with ongoing savings on electricity bills, and an investment in renewable power can deliver electricity for much less cost. ƒƒ Per dollar spent over the lifetime of the technology, energy efficiency and biomass co-firing are five times more effective at preventing carbon dioxide pollution, and combined heat and power (in which a power plant generates both electricity and heat for a building or industrial application) is greater than three times more effective. In 2018, biomass and land-based wind energy will be more than twice as effective, and offshore wind power will be on the order of 30 percent more effective per dollar of investment, even without the benefit of the renewable energy production tax credit. (See Figure ES-2.) ƒƒ By 2018, and possibly sooner, solar photovoltaic power should be comparable to a new nuclear reactor in terms of its perdollar ability to prevent global warming pollution. Some analyses imply that thin film solar photovoltaic power is already more costeffective than a new reactor. And solar power is rapidly growing cheaper, while nuclear costs are not likely to decline. Nuclear power is not needed to provide reliable, low-carbon electricity for the future. ƒƒ Nuclear power proponents argue that nuclear plants are needed to produce low-carbon “base-load” power. However, the need for base-load power is exaggerated and smallscale clean energy solutions can actually enhance the reliability of the electric grid. ƒƒ Many clean power sources – including energy efficiency improvements, combined heat-and-power technologies and renewable energy sources such as biomass, geothermal energy and solar thermal power with heat storage – are available at any time, just like nuclear power. Others, including wind and solar photovoltaic power, are predictable with about 80-90 percent accuracy a day in advance. With proper planning and investments in a “smart grid” to facilitate wise use of resources, clean energy solutions could supply the vast bulk of America’s electricity needs.

#### Also true internationally – electricity demand and current plant retirements outpace new construction

Prof. Dr. Mohamed Salama - Nuclear and Radiological Regulatory Authority (Egypt) – June 2011, Is nuclear power a global warming solution?, http://el.erdc.usace.army.mil/workshops/11JunNATO/Salama\_NuclearEnergy.pdf

Today there are 435 nuclear plants worldwide, which produce 16 percent of the planet’s electricity. In comparison, fossil fuels generate 66 percent of the world’s electricity. Global electricity demand is projected to double by 2030 and triple by 2050, based on business-as-usual usage. Much of this demand growth will occur in the developing world. The almost threefold increase in nuclear power by 2050 would increase the global proportion of nuclear energy use from 16 percent to ~20 percent, given the projected increased demands for electricity. As a consequence, this modest increase in contribution from nuclear energy alone would not decrease the emissions of greenhouse gases. How much nuclear energy would be needed to maintain global carbon dioxide emissions at the year 2000 level? Under this very ambitious scenario, each new reactor would have to come online at a rate of less than one per week over the next four decades. By 2025 half of today’s nuclear plants will be too old to operate (Assuming 40-year lifespan). Total operating capacity will decrease, not increase. Using current nuclear power plants to fight global warming would require an impossible increase in utilized capacity. The industry’s scenario is fundamentally flawed, because current nuclear power plants are aging. They are going to require more maintenance and will break down more often. Thus, nuclear power is unreliable for fighting global warming. Scandals, natural disasters and accidents can shut down numerous plants simultaneously. When one of these problems occurs, without sustainable alternative energy sources, fossil fuel plants must kick in which spikes greenhouse gas emissions. For centralized, large systems like nuclear generation, utilities must install a “reserve margin” of extra capacity ready for instant use. For example, in Japan every new nuclear power plant requires additional fossil-fuel-fired capacity. Nuclear power plants and fossil fuel plants come in tandem. If the number of nuclear power plants could be doubled, which is impossible, their total contribution to world energy use would only increase to 12%. Every step of the nuclear power cycle involves the expenditure of energy derived from fossil fuels, which nuclear generated electricity cannot replace. The factories, the transport, and the materials are made using fossil fuels. In particular, plants are made with concrete, which is a CO2 intensive material. Thus, it is untrue to say that nuclear energy is greenhouse friendly. Will nuclear power stop climate change?  Too dirty- Greenhouse gas emissions from mining, enrichment, transport and infrastructure.  Too slow-It takes at least 15 years to build a nuclear power reactor.  Too dangerous-Nuclear waste is dangerously radioactive now and for hundreds of thousands of years. There is no safe way to store it and it poses a security threat.  Too expensive- Nuclear power generation is seven times more expensive than energy reductions. Nuclear energy can only exist in a society that runs on cheap fossil fuels. Planning and building new nuclear power plants will NOT contribute to combating global warming over the next decade. Over the next decade there will be ZERO additional contribution from nuclear power in the fight to combat global warming.

#### No one will invest

John Mecklin – deputy editor of the Bulletin of the Atomic Scientists - March/April 2013, Introduction: US nuclear exit?, Bulletin of the Atomic Scientists, <http://bos.sagepub.com/content/69/2/9.full>

In a 2012 progress report on federal energy initiatives, the Obama administration enthusiastically asserted that it was “jumpstarting” the nuclear industry. It noted that “the Department of Energy issued a conditional commitment for a loan guarantee to support the first US nuclear reactors in more than three decades. The project … will bring two new Westinghouse AP1000 reactors online, supporting 3,500 construction jobs and 800 permanent jobs” (White House, 2012: 12). The Southern Company is indeed building two new units at its Vogtle nuclear power plant in Georgia, but the administration’s rosy energy report omitted some key context: Those reactors, which likely wouldn’t be financed without a federal loan guarantee, are rare sunbeams in a dismal nuclear power landscape. Because of the nuclear industry’s long history of permitting problems, cost overruns, and construction delays, financial markets have been wary of backing new nuclear construction for decades. The supposed “nuclear renaissance” ballyhooed in the first decade of this century never really materialized. And then came Fukushima, a disaster that pushed countries around the world to confront the same basic question: Should nuclear power be part of the energy future? In Japan and many European countries, that question has been the focus of significant public debate and policy making, but in the United States, it has scarcely been broached. The Nuclear Regulatory Commission (NRC) has responded—and doubtless will continue to respond—to safety issues raised by the Fukushima accident. The overall US approach to nuclear power, however, remains roughly what it has been for decades. And that business-as-usual approach is exactly what could produce a US nuclear phase-out, former NRC Commissioner Peter A. Bradford writes in his engaging and somewhat counterintuitive essay, “How to close the US nuclear industry: Do nothing.” Even though the NRC granted a 20-year life extension to the Kewaunee Power Station in Wisconsin, its owner decided to shutter the plant anyway. This is just one of several recent industry moves that show nuclear power has entered a new phase in the United States—“one in which market forces challenge the economic viability even of existing nuclear plants, while making new reactors hopelessly unattractive as investments,” Bradford writes. In this new phase, some operating nuclear plants will be unable to compete with the cheaper power produced by coal, gas, and renewable sources. Financial markets will continue to shy away from funding new nuclear plants. And, Bradford writes, as existing reactors run out their licensed lifetimes, nuclear power will, likely, simply … disappear. “Absent an extremely large injection of government funding or further life extensions, the reactors currently operating are going to end their licensed lifetimes between now and the late 2050s,” he concludes. “They will become part of an economics-driven US nuclear phase-out a couple of decades behind the government-led nuclear exit in Germany.”

#### Fukushima means no global spread

Henry D. Jacoby and Sergey Paltsev – prof @ MIT Sloan School of Management / principal research scientist at the MIT Energy Initiative – March/April 2013, Nuclear exit, the US energy mix, and carbon dioxide emissions, Bulletin of the Atomic Scientists vol. 69 no. 2 12-21, <http://bos.sagepub.com/content/69/2/34.full>

A number of issues have combined to stymie nuclear plant investment in the United States, importantly including its high per-kilowatt-hour cost compared to coal (MIT Energy Initiative, 2009). But even with no new plants starting operation since the mid-1990s, license extensions and upgrades in the capacity of existing units have maintained nuclear generation in the neighborhood of 20 percent of US electricity supply for the past quarter century. In the last decade or so, there was talk of a nuclear renaissance, in the United States and elsewhere, stirred by the expectation of penalties on carbon dioxide emissions, improved capacity factors and safer designs, and (in the United States at least) more supportive federal regulations and subsidies. But then came Fukushima. Whatever one’s view of the reality of the earlier renaissance, the accident appears to have substantially dimmed the future of the industry.1 The effect on Japan has been particularly dramatic, creating difficulty in restarting units down for maintenance at the time of the accident or shut in its aftermath and initiating an on-and-off policy of complete phase-out by 2040. There also has been a strong response in Europe—notably in Switzerland, Italy, and Germany, which have imposed phase-out plans—and there is even talk of a partial phase-out in France (France 24, 2012).

#### Effective NNSA workforce is critical to maintaining the reliability of the nuclear deterrent – it’s on the brink and not easily replaced

GAO – April 12, MODERNIZING THE NUCLEAR SECURITY ENTERPRISE, http://www.gao.gov/assets/600/590488.pdf

The National Nuclear Security Administration (NNSA)—a separately organized agency within the Department of Energy (DOE)—has primary responsibility for ensuring the safety, security, and reliability of the nation’s nuclear weapons stockpile.1 NNSA carries out these activities at eight government-owned, contractor-operated sites, which include three national laboratories, four production plants, and one test site. Collectively, these sites are referred to as the nuclear security enterprise. The enterprise, formerly known as the nuclear weapons complex, has been a significant component of U.S. national security since the 1940s. Contractors operate sites within the enterprise under management and operations (M&O) contracts.2 These contracts provide the contractor with broad discretion in carrying out the mission of the particular contract but grant the government the option to become much more directly involved in day-to-day management and operations. Historically, confidence in the safety and reliability of the nuclear stockpile was derived through a continuous process of designing, testing, and deploying new weapons to replace older weapons. In 1992, at the end of the Cold War, and in response to a congressionally imposed U.S. nuclear test moratorium,3 the United States ceased underground testing of nuclear weapons, and adopted the Stockpile Stewardship Program as an alternative to testing and producing new weapons. The Stockpile Stewardship Program primarily relies on analytical simulations and computer modeling to make expert judgments about the safety, security, and reliability of the nation’s nuclear weapons. In addition, NNSA refurbishes weapons in the stockpile to extend their operational lives. Under current national policy, NNSA may also be called upon to resume underground nuclear testing at the Nevada National Security Site within a 3-year time frame under certain circumstances, including the accumulation of uncertainties about the reliability of the nuclear stockpile. Currently, NNSA’s workforce is made up of about 34,000 M&O contractor employees that span the enterprise, and about 2,400 federal employees directly employed by NNSA in its Washington headquarters, at site offices located at each of the eight enterprise sites, and at its Albuquerque, New Mexico, complex. NNSA’s staff provide leadership and program management for the nuclear security enterprise and support and oversee its M&O contractors by providing business, technical, financial, legal, and management advice, including support for contractor workforce planning and restructuring, compensation, benefits, oversight of labor-management relations, and the quality of contractor deliverables such as nuclear weapons components. Many workers in the enterprise––both NNSA’s staff and its M&O contractors––possess certain critical skills not readily available in the job market. These workers often have advanced degrees in scientific or engineering fields or experience in high-skill, advanced manufacturing techniques. In addition, certain critical skills are unique to the enterprise and, according to NNSA officials, can only be developed within its secure, classified environment. According to these officials, it generally takes a minimum of 3 years of on-the-job training to achieve the skills necessary to succeed in most critical skills positions. Some nuclear weapons expertise can take even longer to develop and must be gained through several years of mentoring, training, and on-the-job experience. For example, according to officials at Los Alamos National Laboratory, it takes 5 to10 years to train a scientist or engineer with an advanced degree to be a fully qualified nuclear weaponeer. Over the last 20 years, in an effort to operate more efficiently and at reduced cost, DOE has sharply reduced its enterprise contractor workforce––from approximately 52,000 in 1992 to its current level of about 34,000. This decrease raised concerns about preserving critical skills in the enterprise. In 1999, a report from a congressionally mandated commission warned that unless DOE acted quickly to recruit and retain its critically skilled staff and M&O contractor employees—and sharpen the expertise already available—the department could have difficulty ensuring the safety, security, and reliability of the nation’s nuclear weapons.4 DOE, and later NNSA, took steps to correct these problems, and in February 2005, we reported that these efforts had been generally effective.5 However, in February 2011, in a report assessing the extent to which NNSA has the data necessary to make informed, enterprisewide decisions,6 we found that NNSA did not have comprehensive information on the status of its M&O contractor workforce. In particular, we reported that NNSA did not have data on the critical skills needed to maintain the Stockpile Stewardship Program’s capabilities. As a result, we recommended that NNSA establish a plan with time frames and milestones for the development of a comprehensive contractor workforce baseline that includes the identification of critical human capital skills, competencies, and levels needed to maintain the nation’s nuclear weapons strategy. NNSA stated that it understood all of our recommendations in that report and believed that it could implement them. As of March 2012, NNSA had completed a draft plan and was incorporating stakeholders’ comments. NNSA officials said that they expect to complete the final contractor workforce baseline plan by May 2012. NNSA expressed concerns in its FY 2012 Stockpile Stewardship Management Plan about the state of both its federal and contractor workforces, stating that there was an urgent need to “refresh” both. In particular, NNSA noted that many employees have retired or are expected to retire soon. At the same time, NNSA’s mission has become even more dependent on high-level science, computer science, technology, and engineering skills as it has moved from underground testing as a means for assessing the safety and reliability of nuclear weapons to one dependent on advanced computer simulations, analyses, and nonnuclear tests. These changes make it even more important that NNSA and its M&O contractors preserve critical skills in their workforces. Additional concerns about human capital in the enterprise have been raised by the debate over––and eventual ratification of––the New Start Treaty,7 which commits the United States to reduce the size of its strategic nuclear weapon stockpile from a maximum of 2,200 to 1,550 nuclear weapons. Reductions in the number of nuclear weapons make it all the more important that NNSA and contractor staff have the requisite critical skills to maintain the safety, security, and reliability of the remaining weapons. However, as the enterprise has contracted, NNSA officials note that training opportunities have been limited, leaving little or no redundancy in certain critical skills within the contractor workforce.

#### Aff causes brain drain – there’s a limited pool of scientists who can do nuclear simulations and monitoring

Andrew C. Klein - Professor of Nuclear Engineering and Radiation Health Physics at Oregon

State University, fmr. Director of Educational Partnerships at the Idaho National Laboratory - February 2012, Required Infrastructure for the Future of Nuclear Energy, http://www.fas.org/pubs/\_docs/Nuclear\_Energy\_Report-lowres.pdf

One potential limiting capability will be the development of the people who are educated and trained to operate these new small reactor systems. The leading concepts being considered are evolutionary developments from current light water based nuclear reactors and the skills needed to operate these systems may not be far from those needed to operate current technologies. However, testing facilities will be needed for these new concepts, in both integral and separate-effects forms, to provide validation and verification of the computer codes used to predict their performance during both normal and accident conditions. A few special technologies and materials are important to the new nuclear energy industry and may need special attention to ensure their availability when they are needed. Specialty materials, such as zirconium, hafnium, gadolinium, beryllium, and others, will need suppliers to provide processing, manufacturing, and recycling technologies that are cost-effective to the manufacturers and utilities building new nuclear power plants. Some, but not all, of these specialty materials have other uses in the economy but their availability to the nuclear industry needs to be ensured. Today’s nuclear R&D infrastructure in the nation’s national laboratories is rather aged. Many of the nuclear R&D facilities across the complex of national laboratories were originally developed in the 1960s and 1970s. However, while they may be old, many critical facilities have seen reasonable maintenance and upgrades over the years so that a basic capability remains available. DOE continues to review its infrastructure needs on a regular basis, including updates to the ten-year site plans at each national laboratory and facility reviews conducted by the National Academies of Science and Engineering, the DOE Nuclear Energy Advisory Committee and others. These reports periodically give the government and the public insight into the capabilities and needs of the nuclear energy R&D community and are used by DOE to guide their annual budget requests to Congress. All of the facilities that researchers might want may not readily be available, but a basic infrastructure has been maintained for R&D activities and a process for their maintenance and expansion is available annually to DOE. A few skilled technical areas related to construction of new nuclear power plants have not been used over the past 20 years in the United States. Since very few new plants have come on-line, there has been little need for people trained in nuclear plant construction and plant startup/test engineering. These highly specialized skills previously were available while new plant projects were being brought on-line during the 1970s and 1980s; however, new education and training programs will be needed to make sure that people are ready when the new plants begin to load fuel and contemplate full operation. Also, should the recycling and reuse of nuclear fuel reach a mature stage of development over the next 30 years, there will be a significant need for radiochemists and radiochemistry technicians, and the development of education and training programs for recycling facility engineers, technicians and operators. Competing interests for a top quality workforce will come from various sectors, both inside and outside of the nuclear industry. The electric utility industry, including all means of production and distribution of electricity will look for similarly educated and trained personnel. The defense, telecommunications, oil and natural gas industries will also be searching for highly educated and trained workers. However, utility careers are sometimes viewed by students to be low-technology career paths of lesser excitement when compared to other high-technology options, and thus the electric utilities must offer competitive compensation packages in order to recruit the best personnel into the nuclear industry. One important aspect of the nuclear energy pipeline for both personnel and equipment is the long design lifetimes for nuclear power plants relative to the length of time that is typical for any one individual. Current nuclear power plants have initial design and license lifetimes of 40 years. Most, if not nearly all, currently operating nuclear power plants in the United States will receive a 20-year license extension from the NRC. Some of these plants may be able to gain an additional 20-year license extension, if current research and development activities show that they can clearly be operated in a safe manner. The new power plant designs all have initial design lifetimes of 60 years, and conceivably their licensed lifetimes could extend to 80 or 100 years. If five to 10 years are required to construct a plant and then another five to 10 years to decommission it, the plant’s total product lifetime approaches 110 to 120 years from conception to dismantlement. This is considerably longer than the product lifetime for any other industrial product. Compare this to the roughly 40-year productive career that is typical for most workers. This difference emphasizes the need for continuous education and training of the nuclear workforce.

#### NNSA workforce is essential for deterrence – also turns prolif

D’Anne E. Spence, Major, USAF - Fall 2011, Zero Nuclear Weapons and Nuclear Security Enterprise Modernization, Strategic Studies Quarterly, http://www.au.af.mil/au/ssq/2011/fall/spence.pdf

Every president since Franklin D. Roosevelt has authorized the production of nuclear weapons, requiring that the US government both understand the nuclear weapons program and establish policy for nuclear weapons employment.1 Each of these presidents also has reiterated a desire to eliminate or reduce the role of nuclear weapons, only to confront the reality that as long as other countries possess them the United States must maintain a credible nuclear capability to deter adversaries and protect itself and its allies. Maintaining a credible nuclear deterrent is essential to US national security. Any degradation of its nuclear enterprise will impact negatively on its nuclear deterrent capability; an even greater impact could result if deterrence fails. Therefore, the United States must maintain its focus on nuclear weapons and the supporting infrastructure through modernization of the entire nuclear security enterprise (the enterprise), even while it pursues a world without nuclear weapons. To understand the current and future status of the nuclear enterprise, one must first consider its role in history and that of the National Nuclear Security Administration (NNSA). Historic Roles Nuclear deterrence has been a critical component of national security since World War II. During the Cold War, the nuclear weapons complex was a massive operation focused on an arms race with the Soviet Union and mass production of nuclear weapons.2 As the Cold War endured, the average age of stockpiled weapons increased, reaching a plateau at approximately 12 years (see fig. 1). Weapons designers were focused on maximizing yield-to-weight ratios rather than increasing the longevity of the weapons. At the end of the weapons’ life expectancy, they were dismantled and replaced with new ones designed to address the current perceived threat and to incorporate technological improvements. This high turnover created a solid base of expertise in weapons design. Between 1945 and 1992, these designers created innovative new designs and ultimately produced more than 65 different types of weapons, including air-dropped bombs, intercontinental ballistic missiles (ICBM), submarine launched ballistic missiles (SLBM), and artillery devices.3 Due to the evolutionary nature of the weapons, designers did not anticipate stockpiling them more than 12 years and therefore paid limited attention to designing components that would not corrode or fail over an extended life cycle.4 The end of the Cold War in 1990, the ratification of the first Strategic Arms Reduction Treaty (START) in 1991, and the subsequent US moratorium on underground nuclear testing dramatically changed the landscape of nuclear weapons in US national security strategy. For the first time since the Manhattan Project, the United States was no longer building nuclear weapons and was in fact downsizing its nuclear arsenal. In 2000, the NNSA was established by congressional mandate as a semiautonomous agency under the Department of Energy with the mission to provide management and “security to the nation’s nuclear weapons, nuclear non proliferation, and naval reactors programs.”5 The NNSA maintains the US nuclear weapons stockpile and is tasked, in tandem with the Department of Defense, to ensure the US nuclear deterrent is safe, secure, and effective to meet national security requirements. This joint task has become increasingly difficult over the past two decades, in part because various treaties and agreements have significantly restricted the development and testing of nuclear weapons. Nuclear weapons that were originally designed for a 10-year lifespan have been in the stockpile for 30-plus years. Each new treaty works to reduce the role of nuclear weapons in the US national security strategy and further restrict what the United States can possess in its active nuclear stockpile. Self-imposed limitations on modernization also thwart efforts to extend the life of the aging nuclear weapons. Over time, the huge nuclear security enterprise managed by the NNSA has shrunk from 15 to eight sites. Using a government-owned, contractor-operated model, the NNSA provides high-level oversight and requirements coordination. Its sites design, produce, and apply science and engineering to maintain and safeguard the nation’s nuclear weapons. The enterprise, depicted in table 1, consists of three national laboratories, four engineering and production plants, and the Nevada National Security Site (until recently called the Nevada Test Site). While the size and structure of the enterprise may have changed since the Cold War, lingering elements of that era still affect the present-day mission of the NNSA, not the least of which is the drastic change in political perspective on acceptable weapons longevity. Current Status The average age of a weapon in the US nuclear stockpile today is over 25 years, well past its intended life. Meanwhile, funding from recent presidents and Congress for the stockpile and supporting infrastructure has reached historic lows due to the perceived reduced role of nuclear weapons in the US national security strategy. In fact, in the last five years the NNSA has lost 20 percent of its buying power although the vital mission to maintain a safe, secure, and effective stockpile has not changed.6 Collectively, these events have reduced the nation’s focus on nuclear weapons as a supporting pillar of US national security policy. This lack of focus has put the NNSA on a path to failure, because insufficient funding makes it more difficult to assess weapon reliability.7 This means the NNSA must maintain an increasingly dilapidated weapons complex and stockpile with maintenance funds that decrease significantly each year. The aging weapons problem is further complicated by an unprecedented presidential commitment to achieve a world without nuclear weapons. In an April 2009 speech in Prague, Pres. Barack Obama created a paradox when, first, he said that the United States, as a world leader, would actively pursue a world without nuclear weapons and, second, promised that as long as other countries had nuclear weapons, the United States would maintain an effective nuclear deterrent.8 Since Prague, the United States has negotiated the “New START” treaty with Russia to reduce the number of nuclear weapons in both countries. Keeping with the Prague promises, the lower weapon levels negotiated in the New START translate into a critical need that the remaining weapons be highly credible and effective. To maintain US nuclear weapons as a credible deterrent, significant funding must go into the entire enterprise to reverse years of atrophy and neglect. In 2008, the bipartisan Perry-Schlesinger Commission studied the role of nuclear weapons in US security policy and concluded that more money must be spent on the enterprise to maintain a credible US nuclear deterrent.9 This commission was established by Congress and co-chaired by William Perry, former secretary of defense, and James Schlesinger, former secretary of defense and energy. The commission confirmed in its report that the primary role of nuclear weapons in the US national security strategy is deterrence. They also provide extended deterrence to US allies and support nonproliferation among those allies who otherwise might develop their own arsenal without the US nuclear umbrella.10 The commission made several key recommendations on the future US strategic posture which have served as a guide for the Obama administration. Notably, the commission recognized the substantial work that has already been invested in reducing the nuclear threat worldwide. The United States has reduced its arsenal from a peak of 31,255 warheads in 1969 to 5,113 warheads (total active and reserve) today; the lowest numbers since the Truman administration (see fig. 2).11 Likewise, the Russians have significantly reduced their stockpile from over 45,000 at the peak of the Cold War.12 Ratification of the New START will reduce these numbers further, sizably shrinking both countries’ nuclear arsenals. More significant, however, is the inverse correlation between reduced nuclear stockpile numbers and increased importance that the remaining weapons remain safe, secure, and effective. Aging of the nuclear weapons, coupled with the decreased number of weapons available, creates increased operational risk to the nuclear deterrent for the United States and its allies. This risk requires the United States to maintain a significant number of “hedge” weapons that protect it against technical uncertainty. Reducing the technical uncertainty in these aging weapons would allow the United States to reduce the overall number while maintaining the credibility of the weapons. However, current agreements and restrictions do not allow the United States to test weapons or to build newly designed weapons. These restrictions and the weapon-aging problem create a quandary for the directors of Los Alamos, Lawrence Livermore, and Sandia when they provide an independent assessment of the stockpile each year to the president, certifying the weapons are safe, secure, and effective. To alleviate these credibility concerns, the NNSA must continue to develop and fund two critical programs, the Stockpile Stewardship Program (SSP) and the Life Extension Program (LEP). Weapon surveillance is the foundation of both programs. Surveillance involves the evaluation of both nuclear and nonnuclear components of a weapon through destructive and nondestructive testing. The process is responsible for identifying original manufacturing flaws, design limitations, and effects of aging.13 The results from these tests drive the NNSA’s understanding of weapon-aging issues and establish a baseline for life extension work. The surveillance results also feed into the modeling and simulation work done in the stewardship program to better understand the internal dynamics during a nuclear detonation. The stewardship program was established in 1992 when the underground nuclear weapons testing moratorium was instituted “to ensure the preservation of the core intellectual and technical competencies of the United States in nuclear weapons.”14 Its goal was to keep the nuclear stockpile reliable without nuclear testing. The SSP is a comprehensive, experiment-based modeling and simulation effort that applies data from multiple subcritical tests, simulating phases of a nuclear detonation, into high-speed computer models. The compilation of this data provides the NNSA a better understanding of nuclear weapons behavior.15 In the absence of nuclear weapons testing, the stewardship program becomes the primary tool used to certify weapon reliability each year. The complexity of thoroughly analyzing a nuclear detonation requires multiple nonnuclear experiments and the world’s fastest supercomputers, driving up the cost of the program. Without full funding, the safety, security, and effectiveness of the weapons become questionable. The surveillance program supports the Life Extension Program. The LEP is the solution to maintaining the nuclear weapons stockpile without designing and building a new nuclear weapon.16 To comply with US policy on nonproliferation and worldwide dismantlement, the 2010 Nuclear Posture Review (NPR) highlights the preference for refurbishment of existing warheads or reuse of components from old weapons. To this end, the NNSA has a full spectrum of life extension options, all of which refurbish, reuse, or replace individual components within a weapon without giving it any newly designed components or new military capabilities. Replacement of nuclear components is only done as a last resort to maintain a weapon and requires an extremely high level of political scrutiny for approval.17 The NNSA develops life extension programs based on DoD requirements for the enduring stockpile, which include an approximate 30-year life expectancy as well as added safety and security features to protect the weapons. The enduring stockpile, as established by the NPR, maintains the nuclear triad of SLBM and ICBM warheads and air-dropped bombs. To maintain all three legs of the triad, warheads from each leg must be life extended. Currently, the NNSA is in the production phase for the W76 SLBM life extension program. Already in the initial developmental phases, the B61, W78, and W88 warhead LEPs will follow. The LEP couples databases from the legacy systems and nuclear tests with the SSP data to sustain nuclear weapons for the enduring stockpile without having to test weapons explosively. Just as aging weapons systems create a perception by some of diminished deterrence capabilities for the United States and its allies, the atrophied physical infrastructure of the enterprise further affects the credibility of US nuclear deterrence. Vital facilities within the enterprise date back 50 to 60 years to the Manhattan Project and are on the verge of catastrophic failure. Caustic chemicals and processes have sped up the corrosion and breakdown of the facilities. Then congressman Lincoln Davis (D-TN) stated on a tour of the nuclear facilities that he felt like he was in a Russian facility, given the utter state of disrepair.18 This deterioration occurred because the original facilities were built for maximizing production rather than for long-term structural integrity. The mission today is much different. Funding cuts and reduced stockpile numbers have forced the NNSA to consolidate facilities, reducing the overall square footage by 50 percent and the number of sites from 15 to eight.19 This transition eliminated redundancy, creating single points of failure for the majority of systems needed to maintain the nuclear weapons stockpile. In other words, the NNSA is now a capability-based organization; that is, regardless of the size of the stockpile, it must ensure core competencies in several key areas to maintain the weapons stockpile rather than the capacity-based organization of the Cold War. Without significant investment in modernizing the existing infrastructure, the nuclear weapons program becomes vulnerable. There is no guarantee the sites are capable of maintaining their own operational status, let alone the operational status of nuclear weapons. The Future of the Nuclear Enterprise What is the future for the NNSA and the nuclear weapons complex? Most broadly, the NNSA must secure increased funding from Congress to modernize the enterprise. Recapitalization efforts must offset continued reduction in the nuclear stockpile and enable life extension programs, timely dismantlement, and proper management of fissile materials.20 The smaller, streamlined enterprise must maintain all of the critical capabilities necessary to sustain the nuclear stockpile. The new facilities, although smaller, must be built to twenty-first-century safety and security standards. These standards are significantly different from original construction and will drive the cost of new facilities into the billions of dollars. The major facilities the NNSA anticipates building over the next 10 years to ensure uninterrupted capability and reduced risk include a chemical metallurgy research replacement facility at Los Alamos, a high-explosive pressing facility in Amarillo, and a uranium processing facility at Oak Ridge. While the costs and challenges will be high, there are also benefits in these modernization efforts. First, the new facilities will be more reliable, safe, and secure. Also, the external security benefits of the infrastructure improvements cannot be ignored. For example, at Oak Ridge the security cordon around special nuclear material will be reduced from 150 acres to 15 acres once the uranium processing facility is operational. This reduction will lower security costs and the possibility of loss of special nuclear material due to the smaller footprint and state-of-the-art facilities. The infrastructure available to support the reduced number of nuclear weapons must be modernized to avoid operational risk that increases as the United States reduces the number of weapons in its arsenal. The modernization of the nuclear infrastructure will require significant, sustained investment and commitment over the next several decades. Without this investment, the risk associated with assessing the safety, security, and effectiveness of the weapons will increase to an unacceptable level. The Perry-Schlesinger report acknowledges this reality explicitly. It states that to invest effectively in nuclear weapons systems through stewardship and life extension, there must also be investment in the enterprise infrastructure. Without such dual investment, the United States will be unable to maintain a credible nuclear deterrent. As it continues to reduce its stockpile toward zero without fully addressing the aging issues in both the stockpile and the infrastructure, its nuclear umbrella will lack the credibility needed to deter potential adversaries and protect allies. These factors could lead other countries to question the viability of the US nuclear program and the credibility of the weapons currently in the stockpile. Without the resources and facilities needed to maintain the weapons, the deterrent effect is dramatically reduced. Even with increased funding for weapons and infrastructure modernization, the complex cannot be properly maintained without the sustained efforts and engagement of the best and brightest scientists and engineers. The world’s top scientists initially produced the atomic bomb, and the same critical skills will be needed to maintain the weapons complex for the foreseeable future. The end of underground nuclear testing launched the stewardship program to ensure nuclear weapons reliability through subcritical tests and other experimentation via simulation, modeling, and high-power computing. The critical skills required to maximize the science, technology, and engineering capacity and properly execute the SSP underpin the strength of the US nuclear deterrent and establish a fundamental understanding of nuclear weapon behavior. Consequently, to assess the stockpile, appropriately trained scientists are needed to resolve technical issues, extend the lifespan of weapons, and aid in dismantlement activities.21 Maintaining the critical skills of the workforce is at the core of meeting mission requirements. The reduction in mission legitimacy, the increasing age of employees, and other pressures have created the perception that employment on nuclear weapons is no longer important to the national security of the United States. This perception has caused many potential workers to seek other opportunities with higher career potential. The majority of nuclear weapons program personnel have spent their entire careers working on nuclear weapons. As Dr. Chris Deeney says, “The only certainty is the increasing age of the workforce.”22 Only a handful of individuals who still work for the NNSA have experience designing weapons and performing underground tests. Some of those have stayed on well past retirement because of a desire to continue to contribute to US national security.23 The fact of the matter is, as these individuals retire and eventually die, their knowledge dies with them. Therefore, it is vital to get a young, motivated workforce in place that can learn from the legacy of the past while building the future surety. The surveillance program’s success relies on an engaged, highly trained, and motivated workforce. The pool of recruits is inherently small due to the highly focused training and US citizenship requirement. For example, stewardship program experts need specialized degrees and experience in such areas as high-density physics to understand nuclear weapons behavior. To attract this kind of talent, the NNSA must have important national security work, including development and experimentation that is unavailable anywhere else in the world and aids in the understanding of nuclear behavior. It must also invest in the world’s highest-power computers to solve the challenging modeling and simulation problems. These efforts will entice the nation’s best scientists into a career of service to the US nuclear program. As the stockpile decreases, investment in human capital is essential to ensure the next generation of scientists and engineers has the right set of skills, expertise, and experience. The credibility of the reduced stockpile hinges on the workforce’s manipulation of the science, technology, and engineering base to fully understand the weapon-aging issues and develop LEPs to address these concerns.

#### Effective deterrence checks all conflict escalation

Robinson, ‘1

[Paul, President and Director, Sandia National Laboratory, "White Paper: Pursuing a New Nuclear Weapons Policy for the 21st Century" March 22, 2001, http://www.sandia.gov/media/whitepaper/2001-04-Robinson.htm]

Let me first stress that nuclear arms must never be thought of as a single “cure-all” for security concerns. For the past 20 years, only 10 percent of the U.S. defense budget has been spent on nuclear forces. The other 90 percent is for “war fighting” capabilities. Indeed, conflicts have continued to break out every few years in various regions of the globe, and these nonnuclear capabilities have been regularly employed. By contrast, we have not used nuclear weapons in conflict since World War II. This is an important distinction for us to emphasize as an element of U.S. defense policy, and one not well understood by the public at large. Nuclear weapons must never be considered as war fighting tools. Rather we should rely on the catastrophic nature of nuclear weapons to achieve war prevention, to prevent a conflict from escalating (e.g., to the use of weapons of mass destruction), or to help achieve war termination when it cannot be achieved by other means, e.g., if the enemy has already escalated the conflict through the use of weapons of mass destruction. Conventional armaments and forces will remain the backbone of U.S. defense forces, but the inherent threat to escalate to nuclear use can help to prevent conflicts from ever starting, can prevent their escalation, as well as bring these conflicts to a swift and certain end.

### AT: Warming

**Cow farts outweigh**

**LA Times 6** (http://www.latimes.com/news/opinion/editorials/la-ed-methane15oct15,0,7911841.story)

It's a silent but deadly source of greenhouse gases that contributes more to global warming than the entire world transportation sector, yet politicians almost never discuss it, and environmental lobbyists and other green activist groups seem unaware of its existence.
That may be because it's tough to take cow flatulence seriously. But livestock emissions are no joke. Most of the national debate about global warming centers on carbon dioxide, the world's most abundant greenhouse gas, and its major sources -- fossil fuels. Seldom mentioned is that cows and other ruminants, such as sheep and goats, are walking gas factories that take in fodder and put out methane and nitrous oxide, two greenhouse gases that are far more efficient at trapping heat than carbon dioxide. Methane, with 21 times the warming potential of CO2, comes from both ends of a cow, but mostly the front. Frat boys have nothing on bovines, as it's estimated that a single cow can belch out anywhere from 25 to 130 gallons of methane a day. It isn't just the gas they pass that makes livestock troublesome. A report from the United Nations Food and Agriculture Organization identified livestock as one of the two or three top contributors to the world's most serious environmental problems, including water pollution and species loss. In terms of climate change, livestock are a threat not only because of the gases coming from their stomachs and manure but because of deforestation, as land is cleared to make way for pastures, and the amount of energy needed to produce the crops that feed the animals. All told, livestock are responsible for 18% of greenhouse-gas emissions worldwide, according to the U.N. -- more than all the planes, trains and automobiles on the planet. And it's going to get a lot worse. As living standards rise in the developing world, so does its fondness for meat and dairy. Annual per-capita meat consumption in developing countries doubled from 31 pounds in 1980 to 62 pounds in 2002, according to the Food and Agriculture Organization, which expects global meat production to more than double by 2050**.** That means the environmental damage of ranching would have to be cut in half just to keep emissions at their current, dangerous level.

**That comparatively outweighs CO2**

**Earth Save ‘11** (Date is last mod, March 1, A New Global Warming Strategy, www.earthsave.org/globalwarming.htm)

Unfortunately, the environmental community has focused its efforts almost exclusively on abating carbon dioxide (CO2) emissions. Domestic legislative efforts concentrate on raising fuel economy standards, capping CO2 emissions from power plants, and investing in alternative energy sources. Recommendations to consumers also focus on CO2: buy fuel-efficient cars and appliances, and minimize their use. , This is a serious miscalculation. Data published by Dr. James Hansen and others show that CO2 emissions are not the main cause of observed atmospheric warming. Though this may sound like the work of global warming skeptics, it isn’t: Hansen is Director of NASA’s Goddard Institute for Space Studies who has been called “a grandfather of the global warming theory.” He is a longtime supporter of action against global warming, cited by Al Gore and often quoted by environmental organizations, who has argued against skeptics for subverting the scientific process. His results are generally accepted by global warming experts, including bigwigs like Dr. James McCarthy, co-chair of the International Panel on Climate Change’s Working Group II. The focus solely on CO2 is fueled in part by misconceptions. It’s true that human activity produces vastly more CO2 than all other greenhouse gases put together. However, this does not mean it is responsible for most of the earth’s warming. Many other greenhouse gases trap heat far more powerfully than CO2, some of them tens of thousands of times more powerfully. When taking into account various gases’ global warming potential—defined as the amount of actual warming a gas will produce over the next one hundred years—it turns out that gases other than CO2 make up most of the global warming problem. Even this overstates the effect of CO2, because the primary sources of these emissions—cars and power plants—also produce aerosols. Aerosols actually have a cooling effect on global temperatures, and the magnitude of this cooling approximately cancels out the warming effect of CO2. The surprising result is that sources of CO2 emissions are having roughly zero effect on global temperatures in the near-term! This result is not widely known in the environmental community, due to a fear that polluting industries will use it to excuse their greenhouse gas emissions. For example, the Union of Concerned Scientists had the data reviewed by other climate experts, who affirmed Hansen’s conclusions. However, the organization also cited climate contrarians’ misuse of the data to argue against curbs in CO2. This contrarian spin cannot be justified. While CO2 may have little influence in the near-term, reductions remains critical for containing climate change in the long run. Aerosols are short-lived, settling out of the air after a few months, while CO2 continues to heat the atmosphere for decades to centuries. Moreover, we cannot assume that aerosol emissions will keep pace with increases in CO2 emissions. If we fail start dealing with CO2 today, it will be too late down the road when the emissions catch up with us. Nevertheless, the fact remains that sources of non-CO2 greenhouse gases are responsible for virtually all the global warming we’re seeing, and all the global warming we are going to see for the next fifty years. If we wish to curb global warming over the coming half century, we must look at strategies to address non-CO2 emissions. The strategy with the most impact is vegetarianism. Methane and Vegetarianism By far the most important non-CO2 greenhouse gas is methane, and the number one source of methane worldwide is animal agriculture. Methane is responsible for nearly as much global warming as all other non-CO2 greenhouse gases put together. Methane is 21 times more powerful a greenhouse gas than CO2. While atmospheric concentrations of CO2 have risen by about 31% since pre-industrial times, methane concentrations have more than doubled. Whereas human sources of CO2 amount to just 3% of natural emissions, human sources produce one and a half times as much methane as all natural sources. In fact, the effect of our methane emissions may be compounded as methane-induced warming in turn stimulates microbial decay of organic matter in wetlands—the primary natural source of methane. With methane emissions causing nearly half of the planet’s human-induced warming, methane reduction must be a priority. Methane is produced by a number of sources, including coal mining and landfills—but the number one source worldwide is animal agriculture. Animal agriculture produces more than 100 million tons of methane a year. And this source is on the rise: global meat consumption has increased fivefold in the past fifty years, and shows little sign of abating. About 85% of this methane is produced in the digestive processes of livestock, and while a single cow releases a relatively small amount of methane, the collective effect on the environment of the hundreds of millions of livestock animals worldwide is enormous. An additional 15% of animal agricultural methane emissions are released from the massive “lagoons” used to store untreated farm animal waste, and already a target of environmentalists’ for their role as the number one source of water pollution in the U.S.

**And, deforestation**

**The Guardian ‘11** (“How do trees and forests relate to climate change?” http://www.guardian.co.uk/environment/2011/feb/11/forests-trees-climate)

Deforestation, and especially the destruction of rainforests, is a hugely significant contributor to climate change. Scientists estimate that forest loss and other changes to the use of land account for around 23% of current man-made CO2 emissions – which equates to 17% of the 100-year warming impact of all current greenhouse-gas emissions. As children are taught at school, trees and other plants absorb CO2 from the air as they grow. Using energy from the sun, they turn the carbon captured from the CO2 molecules into building blocks for their trunks, branches and foliage. This is all part of the carbon cycle. A mature forest doesn't necessarily absorb much more CO2 that it releases, however, because when each tree dies and either rots down or is burned, much of its stored carbon is released once again. In other words, in the context of climate change, the most important thing about mature forests is not that they reduce the amount of CO2 in the air but that they are huge reservoirs of stored carbon. If such a forest is burned or cleared then much of that carbon is released back into the atmosphere, adding to atmospheric CO2 levels.

**U.S. cars are key**

**West No Date**, Larry West is a professional writer and editor who has written many articles about environmental issues for leading newspapers, magazines and online publications. He has been a guide at About.com since 2004. Experience: During his 20-year career in newspapers, Larry was part of an investigative team whose work was a finalist for the Pulitzer Prize and received the Meeman Award for national environmental reporting from the Scripps Howard Foundation. Later, Larry served as press secretary and deputy chief of staff for a U.S. Representative, and was communications director for a U.S. Senator. He also managed public affairs for a leading global technology company, the Federal Aviation Administration, and one of the largest ports in the United States. In each of those positions, Larry was involved in environmental strategy, policy and communications. Education: Larry studied journalism and creative writing at the University of Washington in Seattle, Washington, and completed the Managerial Excellence program at Stanford University in Palo Alto, California. He also taught research and writing courses in continuing education programsat the University of Washington and the University of Alaska. By Larry West: Protecting and preserving our natural environment is a matter of life and death for every creature on Earth and all future generations. Our ability to use resources without depleting them, to function as part of a sustainable ecosystem, and to serve as responsible environmental stewards is critical. My goal is to help you get the information you need to make effective decisions about key environmental issues, from national policies and global initiatives to personal lifestyle choices. , <http://environment.about.com/od/globalwarming/a/autoemissions.htm>

**U.S. automobiles** and light trucks **are responsible for** nearly **half** of **all greenhouse gases emitted** **by automobiles globally**, according to a new study by Environmental Defense.

The study, [Global Warming on the Road](http://www.environmentaldefense.org/documents/5301_Globalwarmingontheroad.pdf) [PDF], also found that the Big Three automakers—General Motors, Ford and DaimlerChrysler—accounted for nearly three-quarters of the carbon dioxide released by cars and pickup trucks on U.S. roads in 2004, the latest year for which statistics were available.

“**Cutting greenhouse gas emissions from U.S. automobiles will be critical to any strategy for slowing global warming**,” said John DeCicco, author of the report and senior fellow at Environmental Defense, in a press release. “To address global warming, we’ll need a clear picture of what sources are contributing to the problem. This report details, by automaker and vehicle type, the greenhouse gas contributions from America's auto sector, for the first time.”

Excessive Carbon Dioxide Emissions
**Carbon dioxide emissions from personal vehicles in the United States equaled 314 million metric tons** in 2004. That much carbon could fill a coal train 55,000 miles long—long enough to circle the Earth twice.

Cars and trucks made by GM gave off 99 million metric tons of carbon dioxide or 31 percent of the total; Ford vehicles emitted 80 million metric tons or 25 percent; and DaimlerChrysler vehicles emitted 51 million metric tons or 16 percent, according to the report.

Why U.S. Cars Emit More Carbon Dioxide
While Americans own only 30 percent of the 700 million vehicles that are in use worldwide, the authors of the report found that cars in **the U.S. account for a disproportionate amount** of greenhouse gas emissions because they are driven farther, have lower fuel economy standards, and burn fuel with higher levels of carbon than many of the cars in other countries. For example:

U.S. cars and light trucks were driven 2.6 trillion miles in 2004, the equivalent of 10 million trips from the earth to the moon.

U.S. automobiles had an average fuel economy of 19.6 miles per gallon in 2004, for an average annual consumption of just over 600 gallons of gasoline.

**Developing countries, lax regulation, and profit maximization means warming is inevitable**

**Porter 2013** - writes the Economic Scene column for the Wednesday Business section (March 19, Eduardo, “A Model for Reducing Emissions” <http://www.nytimes.com/2013/03/20/business/us-example-offers-hope-for-cutting-carbon-emissions.html?_r=1&>)

**Even if every American coal-fired power plant were to close**, t**hat would not make up for the coal-based generators being built in developing countries** like India and China. “**Since 2000, the growth in coal has been 10 times that of renewables**,” said Daniel Yergin, chairman of IHS Cambridge Energy Research Associates.¶ Fatih Birol, chief economist of the International Energy Agency in Paris, points out that **if civilization is to avoid catastrophic climate change, only about one third of the** 3,000 gigatons of **CO2** contained **in** the world’s **known reserves of oil, gas and coal can be released into the atmosphere**.¶ But **the** world **economy does not work as if this were the case** — not governments, nor businesses, nor consumers.¶ “**In all my experience as an oil company manager, not a single oil company took into the picture the problem of CO2,” said** Leonardo Ma**ugeri, an energy expert at Harvard** who until 2010 was head of strategy and development for Italy’s state-owned oil company, Eni. “**They are all totally devoted to replacing the reserves they consume every year.**”

**No impact – empirics**

**Willis et. al, ’10** [Kathy J. Willis, Keith D. Bennett, Shonil A. Bhagwat & H. John B. Birks (2010): 4 °C and beyond: what did this mean for biodiversity in the past?, Systematics and Biodiversity, 8:1, 3-9, <http://www.tandfonline.com/doi/pdf/10.1080/14772000903495833>, ]

**The most recent climate models and fossil evidence for the early Eocene Climatic Optimum** (53–51 million years ago) **indicate that during this time interval atmospheric CO2 would have exceeded 1200 ppmv and tropical temperatures were between 5–10 ◦ C warmer than modern values** (Zachos et al., 2008). **There is** also **evidence for relatively rapid intervals of extreme global warmth and massive carbon addition when global temperatures increased by 5 ◦ C in less than 10 000 years** (Zachos et al., 2001). So **what was the response of biota to these ‘climate extremes’ and do we see the large-scale extinctions** (especially in the Neotropics) **predicted by some of the most recent models associated with future climate changes** (Huntingford et al., 2008)? In fact **the fossil record for the early Eocene Climatic Optimum demonstrates the very opposite.** All the evidence from low-latitude records indicates that, **at least in the plant fossil record, this was one of the most biodiverse intervals of time in the Neotropics** (Jaramillo et al., 2006). It was also a time when **the tropical forest biome was the most extensive in Earth’s history, extending to mid-latitudes in both the northern and southern hemispheres – and there was also no ice at the Poles and Antarctica was covered by needle-leaved forest** (Morley, 2007). **There were certainly novel ecosystems, and an increase in community turnover with a mixture of tropical and temperate species in mid latitudes and plants persisting in areas that are currently polar deserts**. [It should be noted; however, that **at the earlier Palaeocene–Eocene Thermal Maximum (PETM) at 55.8 million years ago in the US Gulf Coast, there was a rapid vegetation response to climate change**. There was major compositional turnover, palynological richness decreased, and regional extinctions occurred (Harrington & Jaramillo, 2007). Reasons for these changes are unclear, but they may have resulted from continental drying, negative feedbacks on vegetation to changing CO2 (assuming that CO2 changed during the PETM), rapid cooling immediately after the PETM, or subtle changes in plant–animal interactions (Harrington & Jaramillo, 2007).]

**Doesn’t kill biodiversity**

Olaf **Stampf**, Writer for Der Spiegel Online Magazine, **2007**, Not the end of the world as we know it, http://www.spiegel.de/international/germany/0,1518,481684,00.html

But **even** this **moderate warming would likely have far fewer apocalyptic consequences than many a prophet of doom would have us believe**. For one thing, the more paleontologists and geologists study the history of the earth's climate, the more clearly do they recognize just how much **temperatures have fluctuated in both directions in the past.** **Even major fluctuations appear to be completely natural phenomena**. Additionally, some **environmentalists doubt that the large-scale extinction of animals and plants some have predicted will in fact come about**. **"A warmer climate helps promote species diversity,"** says Munich zoologist Josef Reichholf. Also, more detailed simulations have allowed climate researchers to paint a considerably less dire picture than in the past **-- gone is the talk of giant storms, the melting of the Antarctic ice shield and flooding of major cities**. Improved regionalized models also show that **climate change can bring** not only drawbacks, but also **significant benefits**, especially in northern regions of the world where it has been too cold and uncomfortable for human activity to flourish in the past. However it is still a taboo to express this idea in public. For example, **countries like Canada and Russia can look forward to better harvests and a blossoming tourism industry**, and the only distress the Scandinavians will face is the guilty conscience that could come with benefiting from global warming.

**Warming’s not anthropogenic --- their authors are biased**

**Horn 11**—degree in meteorology with honors from Lyndon State College, regular speaker at the annual International Climate Change Conference, fmr meteorologist for the Weather Services Corporation (11/30, Art, “The Confused Climate Change Consensus”, Energy Tribune, <http://www.energytribune.com/articles.cfm/9264/The-Confused-Climate-Change-Consensus>, AL)

It would appear that the much claimed consensus among leading climate scientists is not in such general agreement these days. If there really is such a consensus, then the opinions from leading climate scientists should be reasonably consistent among them. What I am seeing instead is an increasing divergence among the man made climate doom community. Let’s set one thing straight from the get go. The data from all of the sources of earth’s measured average global temperature clearly show that there has been a pause in global temperature increase since 1998. People who claim otherwise simply don’t look at the data or believe someone who wrote a story that said warming is accelerating and it’s really, really bad. Don’t trust me on this, look for yourself. There are those who see the pause and as a reaction to it, have now begun to focus on “extreme weather events” to keep the public engaged and convinced that civilization is gagging Mother Earth with its carbon dioxide pollution. Since the temperature is no longer increasing some other scare tactic needs to be employed to keep the research funding from drying up. In a time of economic turmoil research funding is threatened. For instance at Penn State University funds allocated for research for 2010/11 were $805,000,000, more than half of that lofty sum, $470,000,000 was Federal grants and contracts. An undetermined amount of that money goes to climate research at Penn State. If the lack of warming for over a decade begins to influence how congress doles out money for global warming research, large cuts in grants and contracts could result. Claims of increases in “extreme weather” due to global warming could be the prod that keeps the government funding spigot open. The problem with trying to compare weather events today to the past is that observational networks have improved dramatically in the years after World War Two. Weather events in the past were vastly underreported due to a lack of reporting stations and primitive communications technologies. In its 2007 report the United Nations Intergovernmental Panel on Climate Change (IPCC) said "At continental, regional, and ocean basin scales, numerous long-term changes in climate have been observed. These include changes in Arctic temperatures and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones." What the report does not say is that multi-decadal ocean temperature oscillations lasting 60 years or more reveal climate fluctuates on time scales that overwhelm our relatively short period of reliable observations. What the report also does not say is that changes in Arctic temperature and ice, widespread changes in precipitation amounts, ocean salinity, wind patterns and aspects of extreme weather including droughts, heavy precipitation, heat waves and the intensity of tropical cyclones are **just as likely to be from natural variability as any man made global warming**. The attempt to attribute changes in weather over decadal time scales to man made global warming is extremely limited by our short period of reliable weather records and a fundamental lack of understanding what causes climate to change in the first place.

# 2NC

## Solvency

### AT: Preemption Key

#### Obama will circumvent the plan with creative lawyering

Hafetz, 11/5 --- law professor at Seton Hall

(11/5/2013, Jonathan, “Outrage Fatigue: The Danger of Getting Used to Gitmo,” http://www.worldpoliticsreview.com/articles/13311/outrage-fatigue-the-danger-of-getting-used-to-gitmo))

The Obama administration has shown no shortage of creative lawyering in justifying U.S. military involvement in Libya and Syria as well as in expanding America’s use of targeted drone strikes. In those instances, the administration has interpreted presidential authority robustly, while narrowly construing congressional attempts to cabin that authority, as in the War Powers Resolution. Yet, when it comes to releasing Guantanamo detainees, the administration remains sheepish. It has failed to apply the same interpretive approach to congressional transfer restrictions despite what the president has described as the clear national security interests in closing the prison. Only external events, such as the hunger strike, now seem to prompt any action. And even there, the urgency tends to dissipate once the public pressure and media attention fades.

### 2NC Decl in US

#### US market will phase out nuclear power – current exists prove

Peter A. Bradford – prof @ Vermont Law School, former NRC member - March/April 2013, How to close the US nuclear industry: Do nothing, Bulletin of the Atomic Scientists vol. 69 no. 2 12-21, <http://bos.sagepub.com/content/69/2/12.full>

The United States is on course to all but exit the commercial nuclear power industry even if the country awakens to the dangers of climate change and adopts measures to favor low-carbon energy sources. Nuclear power had been in economic decline for more than three decades when the Bush administration launched a program that aimed to spark a nuclear power renaissance through subsidies and a reformed reactor licensing process. But Wall Street was already leery of the historically high costs of nuclear power. An abundance of natural gas, lower energy demand induced by the 2008 recession, increased energy-efficiency measures, nuclear’s rising cost estimates, and the accident at the Fukushima Daiichi Nuclear Power Station further diminished prospects for private investment in new US nuclear plants. Without additional and significant governmental preferences for new nuclear construction, market forces will all but phase out the US nuclear fleet by midcentury. Here’s what the US government must do to bring about a gradual phase-out of almost all US nuclear power plants: absolutely nothing. The United States is more or less on course to exit the commercial nuclear power industry, even if the country awakens to the dangers of climate change and adopts broad-based measures to favor low-carbon energy sources. Only a massive, government-driven infusion of taxpayer or customer dollars, targeted specifically to new nuclear reactors, will produce a different result. Dominion Resources Inc. recently announced that it will close the Kewaunee Power Station in Carlton, Wisconsin in 2013. The decision, said Dominion CEO Thomas Farrell, “was based purely on economics” (Dominion Resources, 2012). With that announcement, the 30-year struggle between pronuclear prophets and market realities in the United States appears to be entering a new phase, one in which market forces challenge the economic viability even of existing nuclear plants, while making new reactors hopelessly unattractive as investments. The Kewaunee shutdown is not an anomaly. Duke Energy has announced that it will not restart the Crystal River unit in Florida, closed since 2009 by construction errors. In late 2012, both the Exelon Corporation and Xcel Energy Inc. canceled plans to expand existing nuclear units, citing declining forecasts of demand for electricity and long-term forecasts of low natural gas prices (Meredith and Benedetto, 2012). In January 2013, industry analysts speculated that several other units might also close in the near future for economic reasons (Maloney et al., 2013). How could this possibly happen to an industry that was trumpeting a “nuclear renaissance” as recently as five years ago? Well, the nuclear renaissance was always ballyhoo; it was based on the number of reactors for which federal or state governments (or both) would conscript the necessary capital from captive taxpayers or customers, not the number that customers needed or that markets would fund. Absent an extremely large injection of government funding or further life extensions, the reactors currently operating are going to end their licensed lifetimes between now and the late 2050s. They will become part of an economics-driven US nuclear phase-out a couple of decades behind the government-led nuclear exit in Germany.

## Warming

### AT: Oceans

#### No impact to ocean acidficiation – marine life is resilient and there studies are incomplete

Hendriks, et. Al, ’10 [[I.E. Hendriks](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=RedirectURL&_method=outwardLink&_partnerName=27983&_origin=article&_zone=art_page&_linkType=scopusAuthorDocuments&_targetURL=http%3A%2F%2Fwww.scopus.com%2Fscopus%2Finward%2Fauthor.url%3FpartnerID%3D10%26rel%3D3.0.0%26sortField%3Dcited%26sortOrder%3Dasc%26author%3DHendriks,%2520I.E.%26authorID%3D8646599000%26md5%3Db1126e5dafa84cc3aed0ba078390ee6d&_acct=C000003958&_version=1&_userid=29621&md5=b73b5f6b37cfb25ec6754b5bbb5f04ed), [C.M. Duarte](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=RedirectURL&_method=outwardLink&_partnerName=27983&_origin=article&_zone=art_page&_linkType=scopusAuthorDocuments&_targetURL=http%3A%2F%2Fwww.scopus.com%2Fscopus%2Finward%2Fauthor.url%3FpartnerID%3D10%26rel%3D3.0.0%26sortField%3Dcited%26sortOrder%3Dasc%26author%3DDuarte,%2520C.M.%26authorID%3D35271799200%26md5%3Dc77907b022fa915f0a14e754e6aa66b1&_acct=C000003958&_version=1&_userid=29621&md5=0f0bb4215cd153e9571ad9628b306b19)[a](http://www.sciencedirect.com.ezproxy.baylor.edu/science/article/pii/S027277140900537X#implicit0), and [M. Álvarez](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=RedirectURL&_method=outwardLink&_partnerName=27983&_origin=article&_zone=art_page&_linkType=scopusAuthorDocuments&_targetURL=http%3A%2F%2Fwww.scopus.com%2Fscopus%2Finward%2Fauthor.url%3FpartnerID%3D10%26rel%3D3.0.0%26sortField%3Dcited%26sortOrder%3Dasc%26author%3DAlvarez,%2520M.%26authorID%3D25959834200%26md5%3D6432778b0f4354160b5b45a451551519&_acct=C000003958&_version=1&_userid=29621&md5=55871851bee9d4ea01c08508ea7b6efb)[a](http://www.sciencedirect.com.ezproxy.baylor.edu/science/article/pii/S027277140900537X#implicit0), Department of Global Change Research. IMEDEA (CSIC-UIB), Instituto Mediterráneo de Estudios Avan, “Vulnerability of marine biodiversity to ocean acidification: A meta-analysis” [Estuarine, Coastal and Shelf Science](http://www.sciencedirect.com.ezproxy.baylor.edu/science/journal/02727714), [Volume 86, Issue 2](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=PublicationURL&_tockey=%23TOC%236776%232010%23999139997%231578281%23FLA%23&_cdi=6776&_pubType=J&view=c&_auth=y&_acct=C000003958&_version=1&_urlVersion=0&_userid=29621&md5=6093e28e0040ace4b92c45f2d19d9266), 20 January 2010, Pages 157-164, ]

In summary, our analysis shows that marine biota is more resistant to ocean acidiﬁcation than suggested by pessimistic predictions identifying ocean acidiﬁcation as a major threat to marine biodiversity (Kleypas et al., 1999; Orr et al., 2005; Raven, 2005; Sponberg, 2007; Zondervan et al., 2001), which may not be the widespread problem conjured into the 21st century. Ocean acidiﬁcation will enhance growth of marine autotrophs and reduce fertility and metabolic rates, but effects are likely to be minor along the range of pCO2 predicted for the 21st century, and feedbacks between positive responses of autotrophs and pH may further buffer the impacts. Particularly sensitive processes like calciﬁcation may be affected, while bivalves seem to be most vulnerable to changes in ambient pH. Modellers and chemical oceanographers need to improve their predictions on the impacts of ocean acidiﬁ- cation by incorporating natural variability in pCO2 in marine waters, the small-scale physical processes that detach the organismal chemosphere from the bulk water properties and the potential for homeostasis resulting from active processes at the cellular level. The predictions need also consider how the gradual changes conducive to the changes in pH expected during the 21st century may depart from the impacts extrapolated from experiments involving the sudden exposure of organisms to reduced pH. Ocean acidiﬁcation needs be carefully monitored and its effects better understood, while especially synergistic effects and complex interactions between acidiﬁcation and other stressors need to be studied, as these synergies may amplify the otherwise limited impacts of ocean acidiﬁcation. Science and society should not forget other major threats to marine biodiversity like overﬁshing, habitat destruction, increased nutrient inputs and associated oxygen depletion and warming (Dobson et al., 2006; Jackson et al., 2001; Kennish, 2002; Thomas et al., 2004; Valiela, 2006). The attention that ocean acidiﬁcation as a sole threat to marine biodiversity has drawn recently might not be fully justiﬁed concerning the limited impact of experimental acidiﬁcation on organism processes as shown by the meta-analysis presented here..

#### And, their arguments are flawed – a lack scientific evidence creates an artificial bias towards ocean acidification

Hendriks and Duartea, ’10 [[I.E. Hendriks](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=RedirectURL&_method=outwardLink&_partnerName=27983&_origin=article&_zone=art_page&_linkType=scopusAuthorDocuments&_targetURL=http%3A%2F%2Fwww.scopus.com%2Fscopus%2Finward%2Fauthor.url%3FpartnerID%3D10%26rel%3D3.0.0%26sortField%3Dcited%26sortOrder%3Dasc%26author%3DHendriks,%2520I.E.%26authorID%3D8646599000%26md5%3Db1126e5dafa84cc3aed0ba078390ee6d&_acct=C000003958&_version=1&_userid=29621&md5=b73b5f6b37cfb25ec6754b5bbb5f04ed), [C.M. Duarte](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=RedirectURL&_method=outwardLink&_partnerName=27983&_origin=article&_zone=art_page&_linkType=scopusAuthorDocuments&_targetURL=http%3A%2F%2Fwww.scopus.com%2Fscopus%2Finward%2Fauthor.url%3FpartnerID%3D10%26rel%3D3.0.0%26sortField%3Dcited%26sortOrder%3Dasc%26author%3DDuarte,%2520C.M.%26authorID%3D35271799200%26md5%3Dc77907b022fa915f0a14e754e6aa66b1&_acct=C000003958&_version=1&_userid=29621&md5=0f0bb4215cd153e9571ad9628b306b19)[a](http://www.sciencedirect.com.ezproxy.baylor.edu/science/article/pii/S027277140900537X#implicit0),  Department of Global Change Research. IMEDEA (CSIC-UIB), Instituto Mediterráneo de Estudios Avan, , Ocean acidification: Separating evidence from judgment – A reply to Dupont et al., [Estuarine, Coastal and Shelf Science](http://www.sciencedirect.com.ezproxy.baylor.edu/science/journal/02727714), [Volume 89, Issue 2](http://www.sciencedirect.com.ezproxy.baylor.edu/science?_ob=PublicationURL&_tockey=%23TOC%236776%232010%23999109997%232255765%23FLA%23&_cdi=6776&_pubType=J&view=c&_auth=y&_acct=C000003958&_version=1&_urlVersion=0&_userid=29621&md5=eb2ae0bdcde2b8bfc6565c9cc0b6c866), 20 September 2010]

The paradigm that “ocean acidiﬁcation will be a major threat for marine species and ecosystems” enunciated by Dupont et al., and implicit in many publications and reports, is a value judgment that lies beyond available scientiﬁc evidence. The extent of the threat remains to be robustly quantiﬁed and will certainly not be equally severe for all marine species and ecosystems, since some will not suffer or even beneﬁt from increased ocean CO2 (Iglesias-Rodriguez et al., 2008; Ries et al., 2009; Hendriks et al., 2010). Evidence that there are species-speciﬁc differences in the response to ocean acidiﬁcation is increasing also for vulnerable life stages like larvae (Kurihara, 2008) and even within one single species studies ﬁnd contrasting results, such as in the case of coccolithophores (Ridgwell et al., 2009). The current paradigm depicting ocean acidiﬁcation as a major threat encroached in the scientiﬁc literature without a solid basis might bias the literature towards supporting views and may lead authors and readers to fail to clearly separate evidence from judgment. For instance, Dupont et al. concluded that “Gametes and early development appear to be far more impacted by ocean acidiﬁcation than adult stages . compromising species survival in near-future conditions”. However, the effect of acidiﬁcation to the extent expected on year 2100 on calciﬁcation by juveniles and larvae was not statistically signiﬁcant (Fig. 2 in Dupont et al.). Another recent example (Gazeau et al., 2010) showed that there was no signiﬁcant effect of a 0.25e0.34 pH unit decrease on hatching and mortality rates of planktonic blue mussel larvae prior to settlement and that signiﬁcant effects (24% lower hatching rates) appeared only when pH was reduced by 0.5 units, with size decreasing signiﬁcantly by 6% to 12% with declining pH. Yet, in the discussion version of the manuscript, Gazeau et al. (2010) conclude that “decreases of hatching rates and shell growth suggest a negative impact of ocean acidiﬁcation on the future survival of bivalve populations potentially leading to signiﬁcant ecological and economical losses”. Similarly, Arnold et al. (2009) conclude that “despite there being no observed effect on survival, carapace length, or zoeal progression, ocean acidiﬁcation related (indirect) disruption of calciﬁcation and carapace mass might still adversely affect the competitive ﬁtness and recruitment success of larval lobsters with serious consequences for population dynamics and marine ecosystem function”. While all of these papers do contain important, useful results worth publishing, reviewers and editors should ensure that conclusions are supported by the results presented.

### Alt Causes

#### Warming inevitable and there’s nothing you can do about it

Solomon et al, IPCC Climate Science Co-Chair, ‘09 (Susan- member of the US National Academy of Sciences, the European Academy of Sciences, and the Academy of Sciences of France, Nobel Peace Prize Winner, Chairwoman of the IPCC, February 10, “Irreversible climate change due to carbon dioxide emissions” PNAS, Vol 106, http://www.pnas.org/content/early/2009/01/28/0812721106.full.pdf)

Over the 20th century, the atmospheric concentrations of key greenhouse gases increased due to human activities. The stated objective (Article 2) of the United Nations Framework Convention on Climate Change (UNFCCC) is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent ‘‘dangerous anthropogenic interference with the climate system.’’ Many studies have focused on projections of possible 21st century dangers (1–3). However, the principles (Article 3) of the UNFCCC specifically emphasize ‘‘threats of serious or irreversible damage,’’ underscoring the importance of the longer term. While some irreversible climate changes such as ice sheet collapse are possible but highly uncertain (1, 4), others can now be identified with greater confidence, and examples among the latter are presented in this paper. It is not generally appreciated that the atmospheric temperature increases caused by rising carbon dioxide concentrations are not expected to decrease significantly even if carbon emissions were to completely cease (5–7) (see Fig. 1). Future carbon dioxide emissions in the 21st century will hence lead to adverse climate changes on both short and long time scales that would be essentially irreversible (where irreversible is defined here as a time scale exceeding the end of the millennium in year 3000; note that we do not consider geo-engineering measures that might be able to remove gases already in the atmosphere or to introduce active cooling to counteract warming). For the same reason, the physical climate changes that are due to anthropogenic carbon dioxide already in the atmosphere today are expected to be largely irreversible. Such climate changes will lead to a range of damaging impacts in different regions and sectors, some of which occur promptly in association with warming, while others build up under sustained warming because of the time lags of the processes involved. Here we illustrate 2 such aspects of the irreversibly altered world that should be expected. These aspects are among reasons for concern but are not comprehensive; other possible climate impacts include Arctic sea ice retreat, increases in heavy rainfall and flooding, permafrost melt, loss of glaciers and snowpack with attendant changes in water supply, increased intensity of hurricanes, etc. A complete climate impacts review is presented elsewhere (8) and is beyond the scope of this paper. We focus on illustrative adverse and irreversible climate impacts for which 3 criteria are met: (i) observed changes are already occurring and there is evidence for anthropogenic contributions to these changes, (ii) the phenomenon is based upon physical principles thought to be well understood, and (iii) projections are available and are broadly robust across models. Advances in modeling have led not only to improvements in complex Atmosphere–Ocean General Circulation Models (AOGCMs) for projecting 21st century climate, but also to the implementation of Earth System Models of Intermediate Complexity (EMICs) for millennial time scales. These 2 types of models are used in this paper to show how different peak carbon dioxide concentrations that could be attained in the 21st century are expected to lead to substantial and irreversible decreases in dry-season rainfall in a number of already-dry subtropical areas and lower limits to eventual sea level rise of the order of meters, implying unavoidable inundation of many small islands and low-lying coastal areas. Results Longevity of an Atmospheric CO2 Perturbation. As has long been known, the removal of carbon dioxide from the atmosphere involves multiple processes including rapid exchange with the land biosphere and the surface layer of the ocean through air–sea exchange and much slower penetration to the ocean interior that is dependent upon the buffering effect of ocean chemistry along with vertical transport (9–12). On the time scale of a millennium addressed here, the CO2 equilibrates largely between the atmosphere and the ocean and, depending on associated increases in acidity and in ocean warming (i.e., an increase in the Revelle or ‘‘buffer’’ factor, see below), typically 20% of the added tonnes of CO2 remain in the atmosphere while 80% are mixed into the ocean. Carbon isotope studies provide important observational constraints on these processes and time constants. On multimil- lenium and longer time scales, geochemical and geological processes could restore atmospheric carbon dioxide to its pre- industrial values (10, 11), but are not included here. Fig. 1 illustrates how the concentrations of carbon dioxide would be expected to fall off through the coming millennium if manmade emissions were to cease immediately following an illustrative future rate of emission increase of 2% per year [comparable to observations over the past decade (ref. 13)] up to peak concentrations of 450, 550, 650, 750, 850, or 1,200 ppmv; similar results were obtained across a range of EMICs that were assessed in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (5, 7). This is not intended to be a realistic scenario but rather to represent a test case whose purpose is to probe physical climate system changes. A more gradual reduction of carbon dioxide emission (as is more likely), or a faster or slower adopted rate of emissions in the growth period, would lead to long-term behavior qualitatively similar to that illustrated in Fig. 1 (see also Fig. S1). The example of a sudden cessation of emissions provides an upper bound to how much reversibility is possible, if, for example, unexpectedly damaging climate changes were to be observed. Carbon dioxide is the only greenhouse gas whose falloff displays multiple rather than single time constants (see Fig. S2). Current emissions of major non-CO2 greenhouse gases such as methane or nitrous oxide are significant for climate change in the next few decades or century, but these gases do not persist over time in the same way as carbon dioxide (14). Fig. 1 shows that a quasi-equilibrium amount of CO2 is expected to be retained in the atmosphere by the end of the millennium that is surprisingly large: typically 40% of the peak concentration enhancement over preindustrial values ( 280 ppmv). This can be easily understood on the basis of the observed instantaneous airborne fraction (AFpeak) of 50% of anthropogenic carbon emissions retained during their buildup in the atmosphere, together with well-established ocean chemistry and physics that require 20% of the emitted carbon to remain in the atmosphere on thousand-year timescales [quasi- equilibrium airborne fraction (AFequi), determined largely by the Revelle factor governing the long-term partitioning of carbon between the ocean and atmosphere/biosphere system] (9–11). Assuming given cumulative emissions, EMI, the peak concen- tration, CO2peak (increase over the preindustrial value CO20), and the resulting 1,000-year quasi-equilibrium concentration, CO2equi can be expressed as COpeak 2 = CO02 + AFpeak EMI [1] COequi 2 = CO02 + AFequi EMI [2] so that COequi2 – CO0 2 = AFequi/AFpeak (COpeak 2 – CO02) [3] Given an instantaneous airborne fraction (AFpeak) of 50% during the period of rising CO2, and a quasi-equilbrium airborne factor (AFequi) of 20%, it follows that the quasi-equilibrium enhancement of CO2 concentration above its preindustrial value is 40% of the peak enhancement. For example, if the CO2 concentration were to peak at 800 ppmv followed by zero emissions, the quasi-equilibrium CO2 concentration would still be far above the preindustrial value at 500 ppmv. Additional carbon cycle feedbacks could reduce the efficiency of the ocean and biosphere to remove the anthropogenic CO2 and thereby increase these CO2 values (15, 16). Further, a longer decay time and increased CO2 concentrations at year 1000 are expected for large total carbon emissions (17). Irreversible Climate Change: Atmospheric Warming. Global average temperatures increase while CO2 is increasing and then remain approximately constant (within 0.5 °C) until the end of the millennium despite zero further emissions in all of the test cases shown in Fig. 1. This important result is due to a near balance between the long-term decrease of radiative forcing due to CO2 concentration decay and reduced cooling through heat loss to the oceans. It arises because long-term carbon dioxide removal and ocean heat uptake are both dependent on the same physics of deep-ocean mixing. Sea level rise due to thermal expansion accompanies mixing of heat into the ocean long after carbon dioxide emissions have stopped. For larger carbon dioxide concentrations, warming and thermal sea level rise show greater increases and display transient changes that can be very rapid (i.e., the rapid changes in Fig. 1 Middle), mainly because of changes in ocean circulation (18). Paleoclimatic evidence suggests that additional contributions from melting of glaciers and ice sheets may be comparable to or greater than thermal expansion (discussed further below), but these are not included in Fig. 1. Fig. 2 explores how close the modeled temperature changes are to thermal equilibrium with respect to the changing carbon dioxide concentration over time, sometimes called the realized warming fraction (19) (shown for the different peak CO2 cases). Fig. 2 Left shows how the calculated warmings compare to those expected if temperatures were in equilibrium with the carbon dioxide concentrations vs. time, while Fig. 2 Right shows the ratio of these calculated time-dependent and equilibrium tempera- tures. During the period when carbon dioxide is increasing, the realized global warming fraction is 50–60% of the equilibrium warming, close to values obtained in other models (5, 19). After emissions cease, the temperature change approaches equilib- rium with respect to the slowly decreasing carbon dioxide concentrations (cyan lines in Fig. 2 Right). The continuing warming through year 3000 is maintained at 40–60% of the equilibrium warming corresponding to the peak CO2 concentration (magenta lines in Fig. 2 Right). Related changes in fast-responding atmospheric climate variables such as precipitation, water vapor, heat waves, cloudiness, etc., are expected to occur largely simultaneously with the temperature changes. Irreversible Climate Change: Precipitation Changes. Warming is expected to be linked to changes in rainfall (20), which can adversely affect the supply of water for humans, agriculture, and ecosystems. Precipitation is highly variable but long-term rainfall decreases have been observed in some large regions including, e.g., the Mediterranean, southern Africa, and parts of south- western North America (21–25). Confident projection of future changes remains elusive over many parts of the globe and at small scales. However, well-known physics (the Clausius–Clapeyron law) implies that increased temperature causes increased atmospheric water vapor concentrations, and changes in water vapor transport and the hydrologic cycle can hence be expected (26–28). Further, advances in modeling show that a robust characteristic of anthropogenic climate change is poleward expansion of the Hadley cell and shifting of the pattern of precipitation minus evaporation (P–E) and the storm tracks (22, 26), and hence a pattern of drying over much of the already-dry subtropics in a warmer world ( 15°-40° latitude in each hemi- sphere) (5, 26). Attribution studies suggest that such a drying pattern is already occurring in a manner consistent with models including anthropogenic forcing (23), particularly in the south- western United States (22) and Mediterranean basin (24, 25). We use a suite of 22 available AOGCM projections based upon the evaluation in the IPCC 2007 report (5, 29) to characterize precipitation changes. Changes in precipitation are expected (5, 20, 30) to scale approximately linearly with increasing warming (see Fig. S3). The equilibrium relationship between precipitation and temperature may be slightly smaller (by 15%) than the transient values, due to changes in the land/ ocean thermal contrast (31). On the other hand, the observed 20th century changes follow a similar latitudinal pattern but presently exceed those calculated by AOGCMs (23). Models that include more complex representations of the land surface, soil, and vegetation interactively are likely to display additional feedbacks so that larger precipitation responses are possible. Here we evaluate the relationship between temperature and precipitation averaged for each month and over a decade at each grid point. One ensemble member is used for each model so that all AOGCMs are equally weighted in the multimodel ensemble; results are nearly identical if all available model ensemble members are used. Fig. 3 presents a map of the expected dry-season (3 driest consecutive months at each grid point) precipitation trends per degree of global warming. Fig. 3 shows that large uncertainties remain in the projections for many regions (white areas). How- ever, it also shows that there are some subtropical locations on every inhabited continent where dry seasons are expected to become drier in the decadal average by up to 10% per degree of warming. Some of these grid points occur in desert regions that are already very dry, but many occur in currently more temperate and semiarid locations. We find that model results are more robust over land across the available models over wider areas for drying of the dry season than for the annual mean or wet season (see Fig. S4). The Insets in Fig. 3 show the monthly mean projected precipitation changes averaged over several large regions as delineated on the map. Increased drying of respective dry seasons is projected by 90% of the models averaged over the indicated regions of southern Europe, northern Africa, southern Africa, and southwestern North America and by 80% of the models for eastern South America and western Australia (see Fig. S3). Although given particular years would show exceptions, the long-term irreversible warming and mean rainfall changes as suggested by Figs. 1 and 3 would have important consequences in many regions. While some relief can be expected in the wet season for some regions (Fig. S4), changes in dry-season precipitation in northern Africa, southern Europe, and western Australia are expected to be near 20% for 2 °C warming, and those of southwestern North America, eastern South America, and southern Africa would be 10% for 2 °C of global mean warming. For comparison, the American ‘‘dust bowl’’ was associated with averaged rainfall decreases of 10% over 10–20 years, similar to major droughts in Europe and western Australia in the 1940s and 1950s (22, 32). The spatial changes in precipitation as shown in Fig. 3 imply greater challenges in the distribution of food and water supplies than those with which the world has had difficulty coping in the past. Such changes occurring not just for a few decades but over centuries are expected to have a range of impacts that differ by region. These include, e.g., human water supplies (25), effects on dry-season wheat and maize agriculture in certain regions of rain-fed farming such as Africa (33, 34), increased fire frequency, ecosystem change, and desertification (24, 35–38). Fig. 4 Upper relates the expected irreversible changes in regional dry-season precipitation shown in Fig. 3 to best estimates of the corresponding peak and long-term CO2 concentrations. We use 3 °C as the best estimate of climate sensitivity across the suite of AOGCMs for a doubling of carbon dioxide from preindustrial values (5) along with the regional drying values depicted in Fig. 3 and assuming that 40% of the carbon dioxide peak concentration is retained after 1000 years. Fig. 4 shows that if carbon dioxide were to peak at levels of 450 ppmv, irreversible decreases of 8–10% in dry-season precipitation would be expected on average over each of the indicated large regions of southern Europe, western Australia, and northern Africa, while a carbon dioxide peak value near 600 ppmv would be expected to lead to sustained rainfall decreases of 13–16% in the dry seasons in these areas; smaller but statistically significant irreversible changes would also be expected for southwestern North America, eastern South America, and Southern Africa. Irreversible Climate Change: Sea Level Rise. Anthropogenic carbon dioxide will cause irrevocable sea level rise. There are 2 relatively well-understood processes that contribute to this and a third that may be much more important but is also very uncertain. Warm- ing causes the ocean to expand and sea levels to rise as shown in Fig. 1; this has been the dominant source of sea level rise in the past decade at least (39). Loss of land ice also makes important contributions to sea level rise as the world warms. Mountain glaciers in many locations are observed to be retreating due to warming, and this contribution to sea level rise is also relatively well understood. Warming may also lead to large losses of the Greenland and/or Antarctic ice sheets. Additional rapid ice losses from particular parts of the ice sheets of Greenland and Antarctica have recently been observed (40–42). One recent study uses current ice discharge data to suggest ice sheet contributions of up to 1–2 m to sea level rise by 2100 (42), but other studies suggest that changes in winds rather than warming may account for currently observed rapid ice sheet flow (43), rendering quantitative extrapolation into the future uncertain. In addition to rapid ice flow, slow ice sheet mass balance processes are another mechanism for potential large sea level rise. Paleoclimatic data demonstrate large contributions of ice sheet loss to sea level rise (1, 4) but provide limited constraints on the rate of such processes. Some recent studies suggest that ice sheet surface mass balance loss for peak CO2 concentrations of 400–800 ppmv may be even slower than the removal of manmade carbon dioxide following cessation of emis- sions, so that this loss could contribute less than a meter to irreversible sea level rise even after many thousands of years (44, 45). It is evident that the contribution from the ice sheets could be large in the future, but the dependence upon carbon dioxide levels is extremely uncertain not only over the coming century but also in the millennial time scale. An assessed range of models suggests that the eventual contribution to sea level rise from thermal expansion of the ocean is expected to be 0.2–0.6 m per degree of global warming (5). Fig. 4 uses this range together with a best estimate for climate sensitivity of 3 °C (5) to estimate lower limits to eventual sea level rise due to thermal expansion alone. Fig. 4 shows that even with zero emissions after reaching a peak concentration, irreversible global average sea level rise of at least 0.4–1.0 m is expected if 21st century CO2 concentrations exceed 600 ppmv and as much as 1.9 m for a peak CO2 concentration exceeding 1,000 ppmv. Loss of glaciers and small ice caps is relatively well understood and is expected to be largely complete under sustained warming of, for example, 4 °C within 500 years (46). For lower values of warming, partial remnants of glaciers might be retained, but this has not been examined in detail for realistic representations of glacier shrinkage and is not quantified here. Complete losses of glaciers and small ice caps have the potential to raise future sea level by 0.2–0.7 m (46, 47) in addition to thermal expansion. Further contributions due to partial loss of the great ice sheets of Antarctica and/or Greenland could add several meters or more to these values but for what warming levels and on what time scales are still poorly characterized. Sea level rise can be expected to affect many coastal regions (48). While sea walls and other adaptation measures might combat some of this sea level rise, Fig. 4 shows that carbon dioxide peak concentrations that could be reached in the future for the conservative lower limit defined by thermal expansion alone can be expected to be associated with substantial irreversible commitments to future changes in the geography of the Earth because many coastal and island features would ultimately become submerged. Discussion: Some Policy Implications It is sometimes imagined that slow processes such as climate changes pose small risks, on the basis of the assumption that a choice can always be made to quickly reduce emissions and thereby reverse any harm within a few years or decades. We have shown that this assumption is incorrect for carbon dioxide emissions, because of the longevity of the atmospheric CO2 perturbation and ocean warming. Irreversible climate changes due to carbon dioxide emissions have already taken place, and future carbon dioxide emissions would imply further irreversible effects on the planet, with attendant long legacies for choices made by contemporary society. Discount rates used in some estimates of economic trade-offs assume that more efficient climate mitigation can occur in a future richer world, but neglect the irreversibility shown here. Similarly, understanding of irreversibility reveals limitations in trading of greenhouse gases on the basis of 100-year estimated climate changes (global warming potentials, GWPs), because this metric neglects carbon dioxide’s unique long-term effects. In this paper we have quantified how societal decisions regarding carbon dioxide concentrations that have already occurred or could occur in the coming century imply irreversible dangers relating to climate change for some illustrative populations and regions. These and other dangers pose substantial challenges to humanity and nature, with a magnitude that is directly linked to the peak level of carbon dioxide reached.

### 1NC No Impact

#### The modern climate crisis is NBD – species have adapted to bigger, faster warming

Willis, et. al, ‘10 [Kathy J. Willis, Keith D. Bennett, Shonil A. Bhagwat & H. John B. Birks (2010): 4 °C and beyond: what did this mean for biodiversity in the past?, Systematics and Biodiversity, 8:1, 3-9, <http://www.tandfonline.com/doi/pdf/10.1080/14772000903495833>, ]

Given that this temperature increase was greater in magnitude and rate to anything predicted for the next century, it is an extremely useful time interval to examine possible biotic responses to 4 ◦ C and beyond. In order to assess biotic responses, however, it is also important to have records with a good temporal resolution, ideally annual resolution. A review of the vegetational responses recorded in 11 sedimentary sequences with a suitably high temporal resolution from around the North Atlantic region (Williams et al., 2002), indicates that in North America and Europe, in less than 100 years, vegetation responded to the rapid climate change 11 600 years ago. For tree populations, this change often occurred in less than two or three generations. The nature of the response depended upon the former vegetation; in central Europe (e.g. Willis et al., 1997; Feurdean et al., 2007) and parts of eastern North America, for example, there is evidence in many regions for a change from needle-leaved dominated to broad-leaved dominated forest, often in less than 100 years. In comparison, closer to the ice-sheets, in western Norway, there was a rapid expansion in the herbaceous and shrub ﬂora and a later arrival of trees, probably due to a time lag for migration from refugial areas (Birks & Birks, 2008). The increase in tree populations, however, even in these northerly regions was still rapid (Birks & Ammann, 2000). A recent study from the East Baltic region, for example, indicates that those trees that survived in northerly refugial populations (Betula, Pinus, Picea) established within a century, suggesting climatedriven ecosystem changes rather than gradual plant succession on new deglaciated land (Heikkila¨ et al., 2009). Thus some species expanded very fast in response to late-glacial warming. There is also evidence, however, for species that expanded slowly or largely failed to expand from their refugia in response to this interval of rapid climate warming (Svenning & Skov, 2007) suggesting that persistence and expansion is also dependent on being in a location that was continuously suitable during the glacial–interglacial ‘cycle’ (Bennett et al., 1991). Biotic responses to this interval of rapid climate warming throughout Europe and North America therefore include evidence for (i) rapid expansion of in situ populations, (ii) large-scale species range shifts (Birks & Willis, 2008), (iii) community turnover (Birks & Birks, 2008) and (iv) the formation of novel community assemblages (Williams & Jackson, 2007). However, at no site yet studied, anywhere in the world, is there evidence in the fossil record for largescale climate-driven extinction during this interval of rapid climate change (Botkin et al., 2007). In some regions there was local or regional extinction, as is apparent throughout the cold-stages of the Quaternary when increasing numbers of tropical species went locally or regionally extinct in Europe (Tallis, 1991; Svenning, 2003; Willis & Niklas, 2004). There is evidence in the fossil record for the total extinction of only one species, the east North American spruce Picea critchﬁeldii (Jackson & Weng, 1999), but evidence for widespread global extinction of plants in this interval of very rapid climate warming has yet to be demonstrated. It had been argued previously that the large-scale megafaunal extinction that occurred at the end of the Pleistocene was climatically driven, but a large number of studies now suggests that this was a predominantly human-driven extinction event that spanned thousands of years (Koch & Barnosky, 2006; Johnson, 2009) rather than a rapid response to the large temperature increase at the late-glacial/post-glacial transition.

### 1NC No Bio-D Impact

**Doesn’t kill biodiversity**

Olaf **Stampf**, Writer for Der Spiegel Online Magazine, **2007**, Not the end of the world as we know it, http://www.spiegel.de/international/germany/0,1518,481684,00.html

But **even** this **moderate warming would likely have far fewer apocalyptic consequences than many a prophet of doom would have us believe**. For one thing, the more paleontologists and geologists study the history of the earth's climate, the more clearly do they recognize just how much **temperatures have fluctuated in both directions in the past.** **Even major fluctuations appear to be completely natural phenomena**. Additionally, some **environmentalists doubt that the large-scale extinction of animals and plants some have predicted will in fact come about**. **"A warmer climate helps promote species diversity,"** says Munich zoologist Josef Reichholf. Also, more detailed simulations have allowed climate researchers to paint a considerably less dire picture than in the past **-- gone is the talk of giant storms, the melting of the Antarctic ice shield and flooding of major cities**. Improved regionalized models also show that **climate change can bring** not only drawbacks, but also **significant benefits**, especially in northern regions of the world where it has been too cold and uncomfortable for human activity to flourish in the past. However it is still a taboo to express this idea in public. For example, **countries like Canada and Russia can look forward to better harvests and a blossoming tourism industry**, and the only distress the Scandinavians will face is the guilty conscience that could come with benefiting from global warming.

## Consumption

### OV

#### The problem isn’t the technology the problem is how we relate to it – only changing our individual practices are sufficient to solve

#### Deforestation extinction

**Tainter- Global Institute of Sustainability, ASU- ‘6**

Joseph, Archaeology of Overshoot and Collapse, Proquest

Several authors see the **deforestation as the start of a cascading process** that led to a **decline in fishing and farming**; changes in farming technology; **increases in warfare and insecurity**; changes in settlement patterns; **population decline; and sociopolitical collapse**. Forest depletion, in this view, led to a shortage of wood for canoe construction, and thus to a decline in the consumption of fish (especially deep, pelagic fish) and marine mammals. Soils eroded, and the fertility of forest soils was lost. Crops were exposed to the winds that blow at Easter Island most of the year. Soils lost moisture. Crop yields declined. Springs and streams dried up. People responded with agricultural intensification. Stone dams diverted water, while lithic mulch was employed to retain soil moisture. Stone-lined pits were created to shelter plants from the wind. Rocks were stacked to create windbreaks. Stone chicken houses up to 20 meters long were built to prevent theft. Fires were fueled by herbs and grasses (Ayres 1985; Diamond 2005; Flenley & Bahn 2002; Kirch 1984, 2000; McCoy 1976, 1979). Easter Island, in this account, is the paradigmatic case of overshoot and collapse, the prototype Spaceship Earth. Diamond (2005) sketches the parallels between Easter Island and our own potential future: Polynesian Easter Island was as isolated in the Pacific Ocean as the Earth is today in space…. Earthlings have [no] recourse elsewhere if our troubles increase. **Those are the reasons why people see the collapse of Easter Island as a metaphor**, a worst-case scenario, for **what may lie ahead of us in our own future** (p. 119).

### 2NC Framework – Care of the Self

#### Everything we do, everything we read forms us as subjects as the world – social change cannot be effected unless there is a vocabulary to construct subjects that engage in a new way of knowing – the alt is a formation of new ethical subjects – the affirmative solidifies dominant structures and knowledges that actively prevent ethics

-necessary to create a new social vocabulary around issues to effect real change

-we are constantly being constructed as subjects by the experiences we have

-on an individual level, ethics is a processing of attuning your ways of knowing the world and relating to the world to be more compassionate and open

-the way our self exists is inseparable from our relationship to the world

-this breaks processes of solidifying existing ways of knowing and mainstream institutions – the affirmative is a step in a long, long process of normalization to make the self complicit with and accepting of violence and inequality – the act of criticism in our alternative is an act of interruption that ethically attunes the self to the hidden violence of dominant knowledges

- we construct the way we interact with the law with reference to this reality

Scott 9 – prof of philosophy @ Vanderbilt

(Charles, Journal of Medicine and Philosophy, 34: 350–367, Foucault, Genealogy, Ethics)

In Foucault’s analysis of the May 1968 uprising in France, he said that even though “things were coming apart” there did not “exist any vocabulary capable of expressing that process” (Foucault, 2000, 271). We could say on Foucault’s terms that there did not exist a way of knowing (a subject of knowledge) and the language and concepts suited for the complex event of France’s transformation. A momentous event happened without adequate “tools” for its recognition, analysis, and appropriation. Consequently, in the following dispersion of quarreling groups and political factions, the 1968 crisis did not at first become an effective discursive event that opened up a full range of apparent problems and transformations for formal knowledge. That would require a knowing subject that was turned away from the strongest discursive options, such as those of the current Humanists, Marxists, Maoists, French colonialists, and French cultural supremacists. So much was falling apart in France at the time that a subject of knowledge was needed that formed in the interconnecting French crises, a subject informed by marginal experiences in comparison to the experiences recognized by the dominant discourses, marginalized experiences like those of Algerian soldiers, French prisoners, people oppressed by French colonialism, people hammered down by Stalin’s communism or the Proletarian Cultural Revolution in China, and people in highly energized, non-French cultures: a subject that developed with the voices and experiences that were on the margins of the older and authoritative French way of life.¶ In spite of the stammering and stumbling in its aftermath, however, May, 1968 opened an opportunity for a new “vocabulary,” a new discourse, and a new ethos for recognizing and knowing. Its event made possible a transitional and transformative knowing subject whose relative freedom and lack of establishment constituted a major, constructive epistemic difference from the accepted discourses. Much more could be said on this issue, but my present, limited points are that in the context of Foucault’s thought, transformation of the knowing subject constitutes an ethical event; and ethics on an individual level takes place as people work on themselves to be able to change themselves enough to know differently and to transform what is evident about others (Foucault, 2000, 241–2).14 These two kinds of transformation take place in genealogical knowing as Foucault conceives and practices it.¶ Two different senses for ethics are at work here. One sense refers to ways of life that are constituted by discourses, institutions, and practices—by all manner of power formations that are not authored by singular individuals and that are ingrained in people’s lives inclusive of their judgment, knowledge, and codes of behavior. A society, of course, can have a variety of overlapping or competing ways of life, a variety of ethical environments, and changes in these environments would compose ethical changes in this broad sense of “ethical.” The knowledge that genealogy generates comprises a different discourse from many established ones and puts in question many aspects of Western society, especially around the topics of madness, sex, crime, normalcy, social/political suppression of people, and mechanisms of regulation and control. It challenges significant parts of our social environment, encourages deliberation and critique, and intends to make a differential impact on contemporary ways of life. In addition to his writing, Foucault was active in many causes designed to change political and social formations and to have a broad social impact. He played a leading role, for example, in support of Vietnamese boat people who were fleeing from persecution and being ignored by Western governments. He was active in prison reform movements. He spoke out against what he found to be unacceptable injustices in Poland and equally unacceptable silence in their regard in the West, against a Realpolitik that ignores suppression of people and their liberties in countries other than one’s own. He showed in multiple ways that passionate support of institutional transformation and of suppressed and suffering people can be carried out without Humanism or other forms of universalizing or totalizing discourse.¶ A second sense of ethics for Foucault means a work on the self by the self.15 He understood, for example, his writing (and his interviews) as processes of self-formation: “I haven’t written a single book that was not inspired, at least in part, by a direct personal experience,” an experience that he wants to understand better by finding a different vocabulary, changed combinations of concepts, and the mutations they bring by connecting with aspects of experience that are barely emerging at the borders of his awareness (Foucault, 2000, 244). His books, he says, compose experiences inclusive of his own “metamorphosis” as he writes them and comes to a transformed connection with their topics. He would also like for his books to provide readers with something akin to his experience, to bring us to our limits of sense where transformations can occur (Foucault, 2000, 244). The sense of ethics in this case is focused by individual experiences and the care they exercise in connecting with them. In care for themselves, they work at maintaining or altering their behavior and attitudes to appropriate themselves to their experiences.16 Foucault says that his books are “like invitations and public gestures” to join in the book’s process, a process that he finds transformative of aspects of contemporary life and potentially, should individuals join in, transformative of the way they understand and connect with themselves (Foucault, 2000, 245–6).¶ Care for self has a very long lineage that Foucault spent his last years investigating. Indeed, understanding himself without metaphysical help or universalized solutions was one aspect of his caring self-relation. He carried out a project, deeply rooted in a Western tradition that makes caring for oneself inseparable from the ways one knows oneself, the world, and others. In his own process, he finds repeated instances of change in his self-world relation as he experiences the impact of what he is coming to know at the borders of his knowledge and identity. When these boundary-experiences (he calls them limit-experiences) occur, he says, the clarity of some aspects of his identity dies in the impact of what he is coming to find. His affections and behavior often change. As an author he attempts to write into his books these very processes for the reader’s possible engagement.¶ If I find through one of his books, for example, a way of knowing that makes clear some of the dangers inherent in a well-established body of knowledge or a mainstream institution, I have an opportunity for assessing those dangers and choosing how I will connect with them and my experience of them. I might find that what I know and the way I know are violated by what Foucault’s work shows. I might find his approach and the knowledge that it offers highly questionable or irrelevant for my life. I might experience new questions, a need for change, an unexpected dissatisfaction with what I have been accepting as true and good. If Foucault’s works carry out their intention and if I read them carefully, I am engaged in an experience that he found transformative and that will make room for choices and problems that I can experience and that might bring me to an edge where what I know meets a limit and the possibility for an altered discourse and subjectivity. Coming in this way to an edge, a limit of the way I know and who I am in such knowing brings together the epistemic and personal aspects of ethical experience. The very act of caring for myself in this instance interrupts the subliminal processes of normalization and sets in motion another kind of dynamics as I come to the limits of my “authorized” experience and the emergence of a different kind of experience. I am caring for myself, impacting my own affections, values, and way of knowing. The dynamics of what Foucault calls biopower (the powerful complex of social forces that regulate human behavior by means of, for example, health care delivery, education, and moral legislation in both broad and “corpuscular” ways) are interrupted by a different dynamics that builds individual autonomy. Self-caring instead of the anonymous dynamics of normalization begins to form my self’s relation to itself. How will I appropriate the experience of limits and their transgression by emerging “voices”, realities, and intensities? Who shall I be in their impact? How will I present myself to myself and my environment should I affirm what is happening in the margins of my established identity?

### \*\*AT Perm/Link Turn

#### **Alt must come first – the aff’s increase in energy efficiency produces increases in consumption, only first changing consumption patterns can avoid ecological collapse**

Dardozzi 8

(Jeff, co-founder of The Earth Alchemists and is a designer/builder of living structure for the un-plasticized, “The Specter of Jevons' Paradox”, Synthesis/Regeneration 47 (Fall 2008))

In the early eighties, an old debate within economics resurfaced surrounding something called Jevons' Paradox, or the more descriptive term rebound effect. Many well-known minds, such as Amory Lovins, piped in on the new meaning of this old, obscure argument buried in 19th century classical economics. First coined by the economist W. Stanley Jevons in The Coal Question (1865), the paradox he noted was in regards to coal consumption and efficiency improvements in steam engines: "It is a confusion of ideas to suppose that economical use of fuel is equivalent to diminished consumption. The very contrary is the truth." In the 1980s, Jevons' observation was revisited by the economists Daniel Khazzoom and Leonard Brookes. In their analysis, they looked beyond the relationship between energy resources and the machines that convert them to useful work to consider the overall effect of technological improvements in resource efficiencies on the energy use of a society as a whole. They argued that increased efficiency paradoxically leads to increased overall energy consumption. In 1992, the economist Harry Saunders dubbed this hypothesis the Khazzoom-Brookes Postulate and showed that it was true under neo-classical growth theory over a wide range of assumptions. Since the appearance of the Khazzoom-Brookes Postulate, numerous studies have weighed in on the debate arguing a range of impacts of the rebound effect. In January 2008, Earthscan released Jevons Paradox: The Myth of Resource Efficiency Improvements as the latest and most comprehensive review of the paradox in economics literature. Prefaced by anthropologist Joseph Tainter (The Collapse of Complex Societies, 1988), the book reviews the history of the debate, current findings and includes the latest multi-disciplinary studies regarding the existence of the rebound effect. The book clearly supports the proposition that the rebound effect is present in the US, Europe and most other economies and that strategies to increase energy efficiency in themselves will do little to improve the energy or the ecological situation. In fact, they may well worsen it as the historical impact of resource efficiency improvements shows that increasing the efficiency in the use of a resource in turn increases the consumption of that resource.

### REM DA

#### Nuclear power takes a ton of Beryllium

Zyga, Science Reporter for PhysOrg, quoting analysis by Abbott, Prof. of Electrical Engineering, 2011

[5/11/11, Lisa, BA in rhetoric from University of Illinois at Urbana-Champaign, known science reporter for PhysOrg, Derek Abbott, Professor of Electrical and Electronic Engineering at the University of Adelaide in Australia, “Why nuclear power will never supply the world’s energy needs,” PhysOrg, <http://phys.org/news/2011-05-nuclear-power-world-energy.html>]

Exotic metals: The nuclear containment vessel is made of a variety of exotic rare metals that control and contain the nuclear reaction: hafnium as a neutron absorber, beryllium as a neutron reflector, zirconium for cladding, and niobium to alloy steel and make it last 40-60 years against neutron embrittlement. Extracting these metals raises issues involving cost, sustainability, and environmental impact. In addition, these metals have many competing industrial uses; for example, hafnium is used in microchips and beryllium by the semiconductor industry. If a nuclear reactor is built every day, the global supply of these exotic metals needed to build nuclear containment vessels would quickly run down and create a mineral resource crisis. This is a new argument that Abbott puts on the table, which places resource limits on all future-generation nuclear reactors, whether they are fueled by thorium or uranium.

#### Rare earth minerals produce massive toxic waste and environmental destruction – increased demand motivates poor environmental accounting and encourages global ecological violence for short-term profit

Ives 13

(Mike, writer based in Hanoi, Vietnam whose work has appeared in the Los Angeles Times, The Washington Post, Smithsonian Online, and other publications. In Vietnam he reports for the Associated Press. In earlier articles for Yale Environment 360, he reported on efforts to reintroduce native tree species to Vietnam’s war-scarred landscape and how melting glaciers are exacerbating water shortages in northwestern China, “Boom in Mining Rare Earths Poses Mounting Toxic Risks”, January 28, 2013, http://e360.yale.edu/feature/boom\_in\_mining\_rare\_earths\_poses\_mounting\_toxic\_risks/2614/)

All of these projects, however, must come to grips with the toxic and radioactive legacy of rare earth mining. Scientists say under-regulated rare earths projects can produce wastewater and tailings ponds that leak acids, heavy metals and radioactive elements into groundwater, and they point out that market pressures for cheap and reliable rare earths may lead project managers to skimp on environmental protections. In Malaysia, Mitsubishi Chemical is now engaged in a $100 million cleanup of its Bukit Merah rare earths processing site, which it closed in 1992 amid opposition from local residents and Japanese politicians and environmentalists. It is one of Asia’s largest radioactive waste cleanup sites, and local physicians said the thorium contamination from the plant has led to an increase in leukemia and other ailments. The legacy of that project has led many Malaysians to be wary of rare earths mines. Few independent studies chart the industry’s global ecological fallout. But no country has as many rare earths processing plants, and their attendant environmental problems, as China. Last year, China’s State Council reported that the country’s rare earths operations are causing “increasingly significant” environmental problems. A half century of rare earths mining and processing has “severely damaged surface vegetation, caused soil erosion, pollution, and acidification, and reduced or even eliminated food crop output,” the council reported, adding that Chinese rare earths plants typically produce wastewater with a “high concentration” of radioactive residues. Bayan-Obo, China’s largest rare earths project, has been operating for more than four decades. According to the Germany-based Institute for Applied Ecology, the site now has an 11-square-kilometer waste pond — about three times the size of New York City’s Central Park — with toxic sludge that contains elevated concentrations of thorium. China’s lax environmental standards have enabled it to produce rare earths at roughly a third the price of its international competitors, according to a 2010 report on the country’s rare earths industry by the Washington-based Institute for the Analysis of Global Security. The report noted that China “has never actually worked out pollutant discharge standards for the rare earth industry.” Like nuclear power plants, rare earths projects require strict independent auditing in order to prevent environmental damage, according to Peter Karamoskos, a nuclear radiologist and the public’s representative at Australia’s Radiation Protection and Nuclear Safety Agency. But as the rare earths industry expands to developing countries like Malaysia and Vietnam, such oversight will be unlikely. “A regulator will either be in the pocket of the industry or a government,” he says. According to Gavin Mudd, an environmental engineer at Australia’s Monash University, rare earths mining provides a wide range of economic and social benefits and can be exploited in a responsible way. However, he says no company — including Mitsubishi and Lynas — has managed to set a good example. Mudd says Lynas decided to process its rare earths in Malaysia rather than Australia, where they are mined, because it received tax incentives. But he says that Lynas hasn’t meaningfully engaged Malaysian communities to hear their concerns. A key problem with the company’s proposals, he adds, is that it never took a baseline sample of the environment before it began operations, making it difficult to gauge the future environmental impacts. “Their approach to solid waste management has been very haphazard,” says Mudd, who has offered unpaid advice to both the company and the activists who oppose its plans.

#### Toxification causes extinction

Ehrlich & Ehrlich 13

(Paul, Professor of Biology and President of the Center for Conservation Biology at Stanford University, and Adjunct Professor at the University of Technology, Sydney, Anne, Senior Research Scientist in Biology at Stanford, “Can a collapse of global civilization be avoided?”, January 9, 2013, *Proceedings of the Royal Society of Biological Sciences*)

Another possible threat to the continuation of civilization is global toxification. Adverse symptoms of exposure to synthetic chemicals are making some scientists increasingly nervous about effects on the human population [77–79]. Should a global threat materialize, however, no planned mitigating responses (analogous to the ecologically and politically risky ‘geoengineering’ projects often proposed to ameliorate climate disruption [80]) are waiting in the wings ready for deployment.

### Warming Link/AT: Tech Solves

#### Their framing of global warming as a techno-fix blocks broader efforts to transform society’s relationship to the Earth, and displaces concern for other environmental issues – their depictions *actively produce* biodiversity loss, topsoil erosion, deforestation, and ocean acidification

Crist 7

(Eileen, has been teaching at Virginia Tech in the Department of Science and Technology in Society since 1997, where she is advisor for the undergraduate program Humanities, Science, and Environment, “Beyond the Climate Crisis: A Critique of Climate Change Discourse”, *Telos*, 141 (Winter 2007): 29–55.)

While the dangers of climate change are real, I argue that there are even greater dangers in representing it as the most urgent problem we face. Framing climate change in such a manner deserves to be challenged for two reasons: it encourages the restriction of proposed solutions to the technical realm, by powerfully insinuating that the needed approaches are those that directly address the problem; and it detracts attention from the planet’s ecological predicament as a whole, by virtue of claiming the limelight for the one issue that trumps all others. Identifying climate change as the biggest threat to civilization, and ushering it into center stage as the highest priority problem, has bolstered the proliferation of technical proposals that address the specific challenge. The race is on for figuring out what technologies, or portfolio thereof, will solve “the problem.” Whether the call is for reviving nuclear power, boosting the installation of wind turbines, using a variety of renewable energy sources, increasing the efficiency of fossil-fuel use, developing carbon-sequestering technologies, or placing mirrors in space to deflect the sun’s rays, the narrow character of such proposals is evident: confront the problem of greenhouse gas emissions by technologically phasing them out, superseding them, capturing them, or mitigating their heating effects. In his The Revenge of Gaia, for example, Lovelock briefly mentions the need to face climate change by “changing our whole style of living.”16 But the thrust of this work, what readers and policy-makers come away with, is his repeated and strident call for investing in nuclear energy as, in his words, “the one lifeline we can use immediately.”17 In the policy realm, the first step toward the technological fix for global warming is often identified with implementing the Kyoto protocol. Biologist Tim Flannery agitates for the treaty, comparing the need for its successful endorsement to that of the Montreal protocol that phased out the ozone-depleting CFCs. “The Montreal protocol,” he submits, “marks a signal moment in human societal development, representing the first ever victory by humanity over a global pollution problem.”18 He hopes for a similar victory for the global climate-change problem. Yet the deepening realization of the threat of climate change, virtually in the wake of stratospheric ozone depletion, also suggests that dealing with global problems treaty-by-treaty is no solution to the planet’s predicament. Just as the risks of unanticipated ozone depletion have been followed by the dangers of a long underappreciated climate crisis, so it would be naïve not to anticipate another (perhaps even entirely unforeseeable) catastrophe arising after the (hoped-for) resolution of the above two. Furthermore, if greenhouse gases were restricted successfully by means of technological shifts and innovations, the root cause of the ecological crisis as a whole would remain unaddressed. The destructive patterns of production, trade, extraction, land-use, waste proliferation, and consumption, coupled with population growth, would go unchallenged, continuing to run down the integrity, beauty, and biological richness of the Earth. Industrial-consumer civilization has entrenched a form of life that admits virtually no limits to its expansiveness within, and perceived entitlement to, the entire planet.19 But questioning this civilization is by and large sidestepped in climate-change discourse, with its single-minded quest for a global-warming techno-fix.20 Instead of confronting the forms of social organization that are causing the climate crisis—among numerous other catastrophes—climate-change literature often focuses on how global warming is endangering the culprit, and agonizes over what technological means can save it from impending tipping points.21 The dominant frame of climate change funnels cognitive and pragmatic work toward specifically addressing global warming, while muting a host of equally monumental issues. Climate change looms so huge on the environmental and political agenda today that it has contributed to downplaying other facets of the ecological crisis: mass extinction of species, the devastation of the oceans by industrial fishing, continued old-growth deforestation, topsoil losses and desertification, endocrine disruption, incessant development, and so on, are made to appear secondary and more forgiving by comparison with “dangerous anthropogenic interference” with the climate system. In what follows, I will focus specifically on how climate-change discourse encourages the continued marginalization of the biodiversity crisis—a crisis that has been soberly described as a holocaust,22 and which despite decades of scientific and environmentalist pleas remains a virtual non-topic in society, the mass media, and humanistic and other academic literatures. Several works on climate change (though by no means all) extensively examine the consequences of global warming for biodiversity, 23 but rarely is it mentioned that biodepletion predates dangerous greenhouse-gas buildup by decades, centuries, or longer, and will not be stopped by a technological resolution of global warming. Climate change is poised to exacerbate species and ecosystem losses—indeed, is doing so already. But while technologically preempting the worst of climate change may temporarily avert some of those losses, such a resolution of the climate quandary will not put an end to—will barely address—the ongoing destruction of life on Earth.

# 1NR

### Enviro Impacts

#### Soil erosion extinction

Avery, Director of & Senior Fellow at Center for Global Food Issues, former agriculture analyst for the State Department, and former staff member of the President's National Advisory Commission on Food and Fiber, 95 (Dennis, “Saving The Planet With No-Till, High-Yield Farming,” before the Manitoba/North Dakota Zero Tillage Farmer's Association, January 24, <http://www.mandakzerotill.org/books/proceedings/Proceedings%201995/highyield.html>)

The true long-term threat to human existence is soil erosion. Doubling the yields on the best and safest farmland cuts soil erosion by more than half. And now herbicides and conservation tillage are letting us cut those low rates of soil erosion by 65 to 98 percent. It should now be possible to build topsoil and soil tilth on much of the world's best farmland -- while carrying on intensive high-yield farming. For 10,000 years, man has accepted soil erosion as the long-term price for having a dependable food supply in the short run. In the U.S. alone, the Conservation 'Technology Information Center reports roughly 100 million acres using conservation tillage systems. The systems are continuing their rapid spread through such widely-differing agricultures as Western Europe, Brazil, Australia and Kenya. We are doing this with chemicals. Herbicides are the first alternative mankind has ever developed to "bare-earth" farming. These herbicide-based farming systems are the most sustainable farming Systems ever devised. They save more soil, even as they encourage more earthworms, more soil microbes and more soil tilth than plowing. Nor do the herbicides present any significant threat to wildlife or people from runoff or residues. (Atrazine, the most widely-used "suspicious" herbicide in the world has just had its safety rating raised seven-fold by the U.S. Environmental Protection Agency.) In addition, high-yield farmers are in the midst of developing "no-leach" farming. Tractors and applicator trucks for farm chemicals now can be guided by global positioning satellites and radar within inches of their true positions across the field, while microprocessors vary the application rates of chemicals and seed seven times a second based on intensive soil sampling, soil hydrology, slope, plant population and nearness to waterways. It is now practical to manage our farms by the square yard, rather than in chunks of 10 or 100 hectares. High-yield farming must now claim environmental credit for both the acres not plowed. and for the soil erosion not suffered.

#### Monoculture extinction

Fowler, Executive Director at the Global Crop Diversity Trust, Professor and Director of Research in the Department for International Environment & Development Studies at the Norwegian University of Life Sciences, and Senior Advisor to the Director General of Bioversity International, and Mooney, Executive Director of the Rural Advancement Foundation International, ’90 (Cary and Pat, “Shattering: Food, Politics, and the Loss of Genetic Diversity, p ix)

While many may ponder the consequences of global warming, perhaps the biggest single environmental catastrophe in human history is unfolding in the garden. While all are rightly concerned about the possibility of nuclear war, an equally devastating time bomb is ticking away in the fields of farmers all over the world. Loss of genetic diversity in agriculture—silent, rapid, inexorable—is leading us to a rendezvous with extinction—to the doorstep of hunger on a scale we refuse to imagine. To simplify the environment as we have done with agriculture is to destroy the complex interrelationships that hold the natural world together. Reducing the diversity of life, we narrow our options for the future and render our own survival more precarious. It is life at the end of the limb. That is the subject of this book. Agronomists in the Philippines warned of what became known as southern corn leaf blight in 1061.' The disease was reported in Mexico not long after. In the summer of 1968, the first faint hint that the blight was in the United States came from seed growers in the Midwest. The danger was ignored. By the spring of 1970 the disease had taken hold in the Florida corn crop. But it was not until corn prices leapt thirty cents a bushel on the Chicago Board of Trade that the world took notice; by then it was August—and too late. By the close of the year, Americans had lost fifteen percent of their most important crop—more than a billion bushels. Some southern states lost half their harvest and many of their farmers. While consumers suffered in the grocery stores, producers were out a billion dollars in lost yield. And the disaster was not solely domestic. U.S. seed exports may have spread the blight to Africa, Latin America and Asia.

#### Pesticide extinction

Montague, Editor of Rachel’s Health and Environment Weekly, 91 (Peter, “Real Hope For The Great Lakes: Local Groups Form 'Zero Discharge Alliance,” Rachel’s Health and Environment Weekly, March 20, #225)

Bioaccumulative toxins are dangerous because amounts that seem harmless are multiplied as they pass through the food chain; often the result is environmental destruction. The adverse consequences of bioaccumulative toxins may become understood only after it is too late. For example, human breast milk is now contaminated with hundreds of persistent, bioaccumulative toxins (see RHWN #193), but the effects of these poisons upon breast-fed infants is not known except in rare cases. Such dousing of infant children with persistent, bioaccumulative toxins is a massive experiment; the full results may become known in the future, but one thing is known beyond any doubt today: it cannot help the human species to expose it from birth onward to a constant bath of industrial toxins. (People who are tempted to think that the human species might be improved by random meddling with our genetic structure should remind themselves that a human is something like a TV set [though of course much more complex] and the hope of improving a human by randomly introducing poisons into its diet at an early age is like splashing hot solder into a TV set's electronic circuits hoping to improve the picture.) It is important to note that many of the most toxic, persistent, and bioaccumulative chemicals are formed by the use of the element chlorine. DDT, PCBs, dioxins, CFCs, and many pesticides are chlorine compounds. Most people know of chlorine because it disinfects their drinking water, kills germs in the local swimming pool, or bleaches their clothes in the washing machine. Unfortunately, when it is used by industry, chlorine produces a broad spectrum of toxins that persist in the environment and bioaccumulate. In a very real sense, chlorine lies at the heart of the toxics problem, world-wide. For two decades, government has tried to control toxic pollutants one at a time, by establishing the exact amount that could be safely released into the environment, issuing "permits" giving industry permission to discharge toxics into air and water, then trying to police the polluters to force compliance with the permitted limits. The entire effort was foolish from the start: there are over 40,000 chemicals in use today and 1000 to 2000 new ones enter commercial channels each year. Meanwhile during its 20-year effort, government has managed to establish "safe" limits for fewer than 100 chemicals. Meanwhile, government has gone ahead and issued permits that ignored most chemicals entirely (because there was no basis for saying how much was safe). Finally, government never showed any real interest (or ability) in enforcing these silly per-mits. A classic house of cards. This wrong-headed effort at pollution control (instead of pollution prevention) has led to massive damage to wildlife throughout the Great Lakes (see RHWN #146) and, worldwide, a dangerous accumulation of toxics in creatures that eat at the top of the food chain, like large birds, large fish, bears, and humans. It is now crystal clear that the old way has been a complete failure, which, if it is continued, can only lead to the extinction of humans.

### 2NC Alt

#### Individual consumption outweighs other sources of waste/pollution – huge quantities, particularly concentrated in environmentally sensitive areas, and occurs much closer to large populations

Vandenbergh 5

(Michael P, Associate Professor of Law at Vanderbilt University Law School, “The Individual as Polluter”, *Environmental Law Reporter* 2005)

Identifying the amounts of pollutants released through individual behavior and the relative share as compared to other source categories is only one step in the risk regulation process. Ultimately, the environmental risk presented by pollutant releases from individual behavior will have to be assessed and compared against the risks presented by releases from other source categories. Although far more work remains to be done, even at this early stage there are reasons to believe that the releases from individual behavior pose substantial risks to human health and the environment.86 At the outset, the large volumes released from individual behavior provide the potential for substantial risk creation. The concept that large volumes form the basis for further inquiry is embedded in a variety of federal statutes and programs, including the Toxic Substances Control Act87 and EPA’s High ProductionVolume Challenge Program.88 In addition, in some cases EPA has assessed the aggregate risk posed by the pollutants discussed above. For example, EPA has estimated that mobile sources (including on-road and nonroad vehicles operated by private individuals and by employees of corporate or other organizations) are responsible for roughly one-half of the cancer deaths caused each year by HAPs.89 Second, the releases from individual behavior may generate greater human exposures than releases of the same quantity of substances from other source categories. The releases will generally occur in close proximity to other individuals, such as in the home. Personal exposure levels may be higher than either indoor or outdoor air levels as a result of driving and the use of consumer and hobby chemicals, and individuals’ releases have been characterized as a “personal cloud” of toxics.90 Much of this personal cloud effect occurs indoors. EPA estimates that on average 75% of homes use some form of pesticide indoors each year and that 80% of an individual’s exposure to pesticides occurs within the home.91 Measured levels of pollutants in the air inside homes have exceeded by several times the levels in the ambient air, and indoor air pollution is a leading human exposure route for many toxics.92 Emissions from vehicles on the highway may have a similar effect. As cars drive down the road, the emissions from other cars enter the ventilation systems, and one study concluded that the levels of some air pollutants inside motor vehicles exceed the levels in the ambient air.93 Third, individuals’ toxic chemical releases may be more likely to occur in locations that create exposure to sensitive subpopulations or ecosystems. For example, children and other sensitive subpopulations may be more likely to breathe indoor air or the air inside a motor vehicle than to breathe air contaminated by air toxics released from a distant factory.94 Toxic releases by individuals also often occur in areas of particular ecological sensitivity. The 2003 NRC report concluded that although not all petroleum releases are likely to have adverse effects, the petroleum released from two sources that include large individual contributions— land runoff and two-stroke engines—“is particularly significant because, by their very nature, these activities are almost exclusively restricted to coastal waters. In fact, the estuaries and bays that receive the bulk of the load are often some of the most sensitive ecological areas along the coast.”95 Household pesticides and fertilizers in runoff also may present particular risks to sensitive ecosystems.96 Thus, many releases from individuals may have a greater effect on human health and environmental quality than releases of similar quantities from other sources.

## O/V

#### Turns popular pressure --- public would demand retaliation

Speice ‘6

(Patrick F. Jr.-, J.D. Candidate @ Marshall-Wythe School of Law, B.A. @ Wake, Feb., William & Mary Law Review, “Negligence and Nuclear Nonproliferation: Eliminating the Current Liability Barrier to Bilateral U.S.-Russian Nonproliferation Assistance Programs”, Lexis)

The potential consequences of the unchecked spread of nuclear knowledge and material to terrorist groups that seek to cause mass destruction in the United States are truly horrifying. A terrorist attack with a nuclear weapon would be devastating in terms of immediate human and economic losses. 49 Moreover, there would be immense political pressure in the United States to discover the perpetrators and retaliate with nuclear weapons, massively increasing the number of casualties and potentially triggering a full-scale nuclear conflict. 50 In addition to the threat posed by terrorists, leakage of nuclear knowledge and material from Russia will reduce the barriers that states with nuclear ambitions face and may trigger widespread proliferation of nuclear weapons. 51 This proliferation will increase the risk of nuclear attacks against the United States [\*1440] or its allies by hostile states, 52 as well as increase the likelihood that regional conflicts will draw in the United States and escalate to the use of nuclear weapons. 53

#### Terrorists will acquire nukes causing extinction --- this is based on non-state actors

#### Turns interdependence and means global development and tech transfer are impossible --- shuts down trade

Johnson ‘2

(Paul-, Oct. 14, National Review, “Leviathan to the Rescue: The responsibility of the United States of America”, Lexis)

These measures are still necessary but they have receded into the background. The foreground is occupied by the need to eliminate regimes which, in one way or another, make international terrorism on a large scale possible and threaten to produce mass-destructive terrorism. Such states include not only all "the usual suspects" -- Iran, Libya, Syria, Cuba, and North Korea (as well as Iraq) -- but Saudi Arabia too, whose authoritarian monarchy pays protection money to terrorists and spreads the religious fundamentalism which lies at the root of the problem.

All these regimes need to be changed. By whose right, and with what authority, can the U.S. undertake such a wide-ranging program? It is this which takes us to the heart of the new, 21st-century form of geopolitics. The risk of great-power conflict is now small. The risk of nation-to-nation wars is diminishing. But the risk of colossal attacks on centers of civilization has increased, is increasing, and must be diminished.

Imagine a world in which the United States was stricken by a successful series of nuclear, biological, and chemical attacks. Putting aside the appalling loss of American lives this would involve, the global consequences would be horrifying. The world would be plunged into the deepest depression in its history. There would be no power-of-last-resort to uphold international order. Wolf and jackal states would quickly emerge to prey on their neighbors. It would be a world as described by Thomas Hobbes in his Leviathan (1651), in which, deprived of a giant authority figure "to keep them all in awe," civilization would break down, and life, for most of mankind, would be "nasty, brutish and short."

#### Means all checks go out the window

Easterbrook Senior Editor New Republic ‘1

(Nov. 1, Lexis)

Well, what held through the Cold War, when the United States and Russia had thousands of nuclear weapons pointed at each other, what held each side back was the fact that fundamentally they were rational. They knew that if they struck, they would be struck in turn. Terrorists may not be held by this, especially suicidal terrorists, of the kind that al Qaeda is attempting to cultivate. But I think, if I could leave you with one message, it would be this: that the search for terrorist atomic weapons would be of great benefit to the Muslim peoples of the world in addition to members, to people of the United States and Western Europe, because if an atomic warhead goes off in Washington, say, in the current environment or anything like it, in the 24 hours that followed, a hundred million Muslims would die as U.S. nuclear bombs rained down on every conceivable military target in a dozen Muslim countries.

#### There’s a massive probability since there’s *no link defense* in the 2ac --- vote neg on the CERTAINTY they collapse warfighting

### Congress

#### Here is the definitive evidence – Congress has neither the ability, incentive, or willingness to check presidential power – polarization makes it a non-starter

Devins 9 – prof @ William & Mary Law School

(Neal, Williamette Law Review 45:395, Presidential Unilateralism and Political Polarization: Why Today's Congress Lacks the Will and the Way to Stop Presidential Initiatives)

Let me shift focus to the question that lies at the heart of this essay, namely, why party polarization prevents today's Congress from standing up for institutional prerogatives and checking the executive branch. Please note that I am not taking a position on whether President Bush's claims of presidential power were well founded. My concern is simply whether today's Congress is capable of embracing the types of legislative reforms that were enacted by the Watergate-era Congress. My analysis will proceed in two parts. First, I will discuss party polarization and how it has contributed to the resurgence of presidential unilateralism.37 Second, I will explain why the modern-day Congress has neither the will nor the way to check presidential unilateralism. In particular, Congress's uninterest in asserting institutional prerogatives to check the George W. Bush administration highlights dramatic differences between the modem day Congress and the Watergate-era Congress. With regard to party polarization, it is quite clear that the days of the Rockefeller Republican and Southern Democrat are behind us. Measures of ideology reveal that all or nearly all Republicans are more conservative than the most conservative Democrat.38 Correspondingly, there is no meaningful ideological range within either the Democratic or Republican Party. For example, with the demise of Rockefeller Republicans and Southern Democrats, the gap between Northern and Southern members of the two parties had largely disappeared by the 1990s. 39 Indeed, as Figure 1 on the following page makes abundantly clear, party polarization is more extreme today than ever before. This pattern will likely continue. With only one-half of eligible voters voting, there is greater emphasis on mobilizing the more partisan base. More than that, in the House of Representatives, computer-driven redistricting has resulted in the drawing of lines that essentially guarantee that Democrats will win certain districts and Republicans other districts. And while there are some toss-up districts, the vast majority of districts are noncompetitive. What this means is that-in the House-the party primary often controls who will win the election and, as such, candidates have incentive to appeal to the partisans who vote in the primaries (and not the median voter ithe general elections).The consequences of party polarization are profound. Party leaders, especially in the House, have capitalized on the fact that lawmakers are more apt to see themselves as members of a party, not as independent power brokers (willing to cross party lines in order to pursue favored policies). Correspondingly, party leaders are increasingly concerned with "message politics," that is, with using the legislative process to make a symbolic statement to voters and other constituents.43 Rather than allow decentralized committees to define Congress's agenda, Democrats and Republicans alike see the lawmaking process as a way to stand behind a unified party message and, in this way, to distinguish their party from the other. Relatedly, rather than seek middle ground bipartisan solutions, each party looks to gain political advantage from the other. oversight.48 But when the President's opponents took over Congress, oversight became a top priority-with the President's party accusing the majority of using its powers "to harass and intimidate. 49 Finally and, for my purposes, most significant, party polarization contributes to the rise of presidential unilateralism. When the Congress is polarized, members of the President's party are not likely to break ranks and vote to limit presidential initiatives. When government is unified, this means that no bill will get through Congress to limit presidential initiatives. When Congress is divided, members of the President's party will resist any opposition party efforts to repudiate the President. More than that, since divided government is increasingly common (thirty of the past forty years), it is also increasingly difficult for Congress to enact significant legislation. As such, Presidents have even more incentive to act unilaterally-since they cannot get Congress to enact their legislative agenda.5 Consider, for example, Bill Clinton's health care reforms and George W. Bush's faith-based initiatives. In both instances, the President went to Congress seeking legislative authorization for his policy agenda. In both cases, Congress did not bite, leaving it to the President either to abandon his policy initiative or pursue his initiative through unilateral action. Clinton did so by issuing several directives that, among other things, "established a patient's bill of rights for federal employees . . . and set penalties for companies that deny health coverage to the poor and people with pre-existing medical conditions. The Clinton impeachment is a classic example of this phenomenon. Unlike the Nixon impeachment (where members of Congress "rose above partisanship"), "it is harder to identify such actors" in President Clinton's case.44 "The virtual party-line votes in the House and the Senate reinforce public perception of the intense partisanship underlying the proceedings. 45 Party polarization likewise contributes to partisanship in how Congress conducts hearings as well as Congress's willingness to hold the executive accountable through oversight.46 Today's lawmakers do not need hearings to sort out their views. With increasing polarization and appeals to the party base, members are both more ideological and less trusting of the other party. Correspondingly, majority and minority staff rarely work together-instead, each side will call witnesses who back up the predetermined views of the party that has enlisted them.47 When it comes to oversight, party identity is also key. When the President and Congress are from the same party, the majority in Congress will not use oversight to hold the President to task. And when the government is divided, Congress will make oversight a top priority. This pattern held true for both the Clinton and George W. Bush presidencies. When the President's party in Congress was in the majority, the opposition party bitterly complained of the majority's "lack[ing] backbone" and "abdicating" its responsibility for conditions." 51 Bush likewise acted unilaterally, establishing the White House Office of Faith Based Initiatives and ordering an audit of government agencies to make sure that their practices did not improperly discourage or forbid faith-based organizations.5 2 Political polarization, moreover, encourages Presidents to act unilaterally and take greater control of the administrative state. Specifically, with political polarization and divided government shifting the locus of government policymaking away from lawmaking and towards executive and administrative action, Presidents (beginning with Ronald Reagan) have used the Office of Management and Budget to review agency policymaking.53 Likewise, in an effort to ensure that agency policymaking conforms to the President's policy agenda, Presidents (again beginning with Ronald Reagan) have made use of signing statements and pre-regulatory directives.54 Finally, Presidents have used their appointments power to ensure agency loyalty to the President's agenda.55 More than any President before him, George W. Bush pushed the boundaries of presidential unilateralism. "What almost no one disputes," wrote Adam Liptak in The New York Times, "is that a central legacy of the Bush presidency will be its distinctively muscular vision of executive power." 56 The architect of this campaign was Vice President Dick Cheney. 7 A witness to Watergate and its aftermath, Cheney helped staff the "White House with conservative veterans of the 1970s and 1980s who believed that" the President should push his agenda "without having to compromise" and that Watergate-era reforms had wrongly "emasculated the presidency."'5 8 More to the point, just as the Nixon administration pushed the boundaries of executive power, the Bush administration extended the efforts of Ronald Reagan and Bill Clinton to assert broad inherent power over national security, to make use of executive orders to unilaterally advance policy objectives, and to centralize presidential control of the administrative state. To cite a few well known examples: the assertion of the power to indefinitely detain so-called enemy combatants, the establishment of a military tribunal system without formal congressional approval, the warrantless wiretapping of U.S. citizens, the robust use of executive privilege, and the expansive use of presidential signing statements to direct agency policymaking-including agency non-enforcement of laws that the President deems unconstitutional. No doubt, just as Nixon's strong view of the presidency did not sit well with the Supreme Court or the American people, the Bush White House has also suffered defeats both before the Supreme Court and the court of public opinion. 59 Unlike the Watergate era, however, the Bush-era Congress did not enact legislation limiting the reach of presidential unilateralism. Political polarization, for reasons already detailed, is an important part of this story. But it is not the only part of the story. Not only did Congress lack a way to restrict presidential power, Congress also lacked the will to check the President. Members, as I will soon explain, saw no political advantage in defending Congress's institutional turf. Before explaining why lawmakers lacked the incentives to rein in the President, a bit of a recap. At the start of this essay, I quoted Justices Jackson and Ginsburg to make-what I consider-a fairly obvious point. Congress has the power to check the President. But if it does not use that power, the President has incentive to fill the void. That does not mean that the President can do whatever he wants. As was true in the war on terror cases, the Supreme Court can place some limits on presidential power. But without a Congress willing to assert its institutional prerogatives, defeats in court are not likely to stick to the President. Richard Nixon lost several significant cases in court. But that is not the reason the presidency was hampered after Nixon left office. The reason was tied to the Watergate-era Congress's willingness to assert itself through numerous legislative enactments and through beefed up oversight. Remember: Dick Cheney's complaint about an imperiled presidency had nothing to do with Supreme Court decision-making and everything to do with congressionally imposed constraints that cut against presidential power. Today, Congress has neither the will nor the way to pursue the type of bipartisan reforms that characterized the Watergate-era Congress. Democrats and Republicans in Congress are more interested in strengthening their position vis-a-vis the other party than in strengthening Congress as an institution. Members of the President's party are loyal to their party, not Congress as an institution, and therefore, will not join forces with the opposition party to assert Congress's institutional prerogatives. Equally telling, members of Congress see little personal gain in advancing a legislative agenda that shifts power from the President to Congress. Unlike during the Watergate era, the American people are not seeking a diminution of presidential power, and especially not on national security matters. Disapproval of President Bush was tied to how he exercised his authority-not to the amount of power the President possesses. Indeed, today's Democratically controlled Congress supported President Bush on national security measures notwithstanding the President's low job approval rating and Democratic complaints about administration overreaching. In July 2008, for example, Democrats in Congress-rather than open themselves up to election-year charges of being soft on national security-revamped an important Watergate-era statute, the Foreign Intelligence Surveillance Act. Bowing to Bush administration demands, Democrats and Republicans joined together to immunize phone companies from liability when wiretapping the international calls of U.S. citizens. The practices of the current Congress are to be expected. Members of Congress hardly ever gain personal political advantage by embracing structural checks of presidential power. Just as Congress has incentive to delegate to the executive (rather than absorb the costs of making a decision that disfavors identifiable participants in the political process), Congress is more interested in responding to executive branch initiatives than in foreclosing particular types of initiatives.63 Sometimes, as was true with the 1974 budget act, structural reforms serve the personal interests of members of Congress. In that case, members had a personal political interest to protect their authority to enact budget bills that reward constituents. Most of the time, however, Congress would rather respond to presidential initiatives than place restrictions on presidential authority-restrictions that shift the locus of decision making power to Congress (so that Congress bears the cost of decision). For this very reason, lawmakers rarely advance their personal political interests by structurally constraining the President in ways that shift the decision back to Congress. Indeed, the War Powers Resolution while ostensibly placing limits on the President-gave the President significant authority to launch unilateral military strikes. Congress's assent was not required until 60 days after the President's initiative (and only if the President triggered the clock by making a formal report to Congress).64 As such, Congress-while insisting it had a role to play-was content to play a reactive role. Long story short: Not only does political polarization stand as a roadblock to the modern Congress standing up for its institutional prerogatives, but lawmakers typically do not gain personal political advantage by placing structural limits on presidential power. On Tuesday November 4, 2008, Barack Obama was elected President. While the Obama administration will undoubtedly pursue a different set of policy initiatives than did the Bush administration, it is to be expected that President Obama will issue executive orders, pre-enforcement directives, review proposed agency regulations, and otherwise take unilateral action to advance his policy initiatives. And it is also to be expected that Congress will not check such presidential unilateralism. Today's polarized Congress lacks both the will and the way to check the presidency. 65 For those who embrace a constitutional design in which (as James Madison put it) "ambition must be made to counteract ambition,"66 today's system of checks and balances is an abject failure.

### General

#### Obama is exercising executive power in all topic areas – proven by Syria speech, drones, Libya

Friedersdorf 9/12 – writer @ The Atlantic

(Conor, Obama Acts Like He Doesn't Know He's an Executive-Power Extremist, http://www.theatlantic.com/politics/archive/2013/09/obama-acts-like-he-doesnt-know-hes-an-executive-power-extremist/279583/)

What a fascinating paragraph! Even as Obama implies that he is a circumspect steward of constitutional democracy, he asserts that even absent "a direct or imminent threat," he has absolute power to wage war without congressional support, the Constitution and the opinions of the demos be damned. If the passage ended there it would be staggering in its internal tension. As Jack Goldsmith explained in detail, intervening in Syria without congressional sign-off would "push presidential war unilateralism beyond where it has gone before." Asserting that power without using it is still an extreme position to take.

Obama goes a delusion farther. Ostensibly because he hasn't yet intervened, even though he repeatedly and needlessly asserts his right to do so unilaterally, he casts himself as moving away from unilateralism and toward consulting Congress. The benefits are "especially true after a decade that put more and more war-making power in the hands of the president," he notes, "while sidelining the people’s representatives from the critical decisions about when we use force."

The grammer is priceless. Who "put more and more war-making power in the hands of the president"? In Obama's telling, "a decade" put the executive power there.

The absence of a human subject in the sentence isn't hard to figure out. For all President George W. Bush's faults, he sought and received majority support for the Patriot Act, the September 2001 AUMF, the War in Afghanistan, and the War in Iraq. Obama's expansion of the drone war and his illegal war-making in Libya didn't turn out as bad as Iraq, so it's hard to see him as a worse president, but Obama has done more than Bush to expand the war-making power of the White House. As for "sidelining the people’s representatives from the critical decisions about when we use force," it's Obama who went into Libya despite the fact that a House vote to approve U.S. involvement was brought to the floor and voted down.

Yet Obama complains about these trends as if someone other than Obama is responsible for them, and as if he has been and remains powerless to do more to reverse them. When Obama asked Congress to vote in Syria, no one forced him to insist that he had the power to intervene militarily even if a legislative vote declared otherwise. No one forced him to defend the extreme position that the presidential war power is so sweeping that it includes waging wars of choice rejected by Congress that don't involve any direct or imminent threat to the United States.

He went out of his way to defend that maximal precedent, even as gave us the impression that he was trying to rein in executive power that he claims to find regrettable and worrisome. It's all consistent with Obama's favorite rhetorical tactic: granting the validity of an objection in his rhetoric, then totally ignoring the objection in his actions. In so doing, he confuses public discourse and subverts debate.

We know that Obama is an executive-power extremist in his actions. He believes the president has the power to intervene militarily without Congress in places that do not threaten America; that he can order American citizens killed in secret without due process; that he can secretly collect data on the phone calls of all Americans; that he can invoke the state-secrets privilege to avoid adjudicating constitutional challenges to his policies on their merits; that he can indefinitely detain prisoners without evidence, charges or due process, that he can sit in judgment of anyone on earth, then send a drone anywhere to strike them.

Yes, we know that Obama is an executive-power extremist in his actions, that there are many steps to rein in executive power that he could take but hasn't taken ... and that he worries repeatedly about an excess of executive power in his rhetoric. What we don't know is the reason for this disconnect. After all, this ain't like Gitmo. If he really wanted to do more to shrink executive power, he could do a lot unilaterally, and no one could stop him. Is he trying to fool us? Or is he fooling himself, because he likes to think of himself as more prudent and moderate man than he is? Can he not bear the truth that he's a Cheneyite extremist\*? My best guess is that he's trying to fool us. But it's hard to know for sure.

#### Obama asserting himself over Congress to ensure flexibility

Gould 12 – Staff Writer @ WSJ

(Martin, Obama Expands His Executive Power, <http://www.newsmax.com/Newsfront/Obama-executive-power-Congress/2012/03/30/id/434337>)

From helping rebels in the Libyan revolution to granting states waivers from the No Child Left Behind education act, Obama is finding it easier to push his agenda without asking for approval from elected senators and representatives, the paper said. And that is not sitting well with either Republicans or Democrats who are keen to defend their own turf against what they see as an overreaching executive. “When he ran for president, Barack Obama promised to roll back President George W. Bush's use of executive power, a defining point of the Bush presidency,” Laura Meckler wrote in the Journal piece. “The pledge was part of a broader pitch about Mr. Obama's governing style, which he said would focus on solving problems in a pragmatic, cooperative way. “The allure of executive power, it turns out, is hard to resist,” Meckler added. “Most every chief executive has found ways to escape the shackles of the legislature and expand the power of the presidency. Three years into his first term, Mr. Obama has developed his own expansive view of going it alone, asserting new executive powers and challenging members of Congress in both parties.” White House counsel Kathy Ruemmler told the Journal that Obama has developed a broader view of executive power since his days as a U.S. senator. "Many issues that he deals with are just on him, where the Congress doesn't bear the burden in the same way," she said. "Until one experiences that first hand, it is difficult to appreciate fully how you need flexibility in a lot of circumstances."

### Syria

#### Obama’s Syria move increased Presidential war powers because it maintained ultimate control with the executive

Balkin 9/3, Law Prof at Yale

(Jack, What Congressional Approval Won't Do: Trim Obama's Power or Make War Legal, www.theatlantic.com/politics/archive/2013/09/what-congressional-approval-wont-do-trim-obamas-power-or-make-war-legal/279298/)

One of the most misleading metaphors in the discussion of President Obama’s Syria policy is that the president has “boxed himself in” or has “painted himself into a corner.” These metaphors treat a president’s available actions as if they were physical spaces and limits on action as if they were physical walls. Such metaphors would make sense only if we also stipulated that Obama has the power to snap his fingers and create a door or window wherever he likes. The Syria crisis has not created a new precedent for limiting presidential power. To the contrary, it has offered multiple opportunities for increasing it. If Congress says no to Obama, it will not significantly restrain future presidents from using military force. At best, it will preserve current understandings about presidential power. If Congress says yes, it may bestow significant new powers on future presidents -- and it will also commit the United States to violating international law. For Obama plans to violate the United Nations Charter, and he wants Congress to give him its blessing. People who believe Obama has painted himself into a corner or boxed himself in might not remember that the president always has the option to ask Congress to authorize any military action he proposes, thus sharing the responsibility for decision if the enterprise goes sour. If Congress refuses, Obama can easily back away from any threats he has made against Syria, pointing to the fact that Congress would not go along. There is no corner. There is no box. Wouldn’t congressional refusal make the United States look weak, as critics including Senator John McCain warn loudly? Hardly. The next dictator who acts rashly will face a different situation and a different calculus. The UN Security Council or NATO may feel differently about the need to act. There may be a new threat to American interests that lets Obama or the next president offer a different justification for acting. It just won’t matter very much what Obama said about red lines in the past. World leaders say provocative things all the time and then ignore them. Their motto is: That was then, and this is now. If Congress turns him down, won’t Obama be undermined at home, as other critics claim? In what sense? It is hard to see how the Republicans could be less cooperative than they already are. And it’s not in the interest of Democrats to fault a president of their own party for acceding to what Congress wants instead of acting unilaterally. Some commentators argue (or hope) that whatever happens, Obama’s request for military authorization will be an important precedent that will begin to restore the constitutional balance between the president and Congress in the area of war powers. Don’t bet on it. By asking for congressional authorization in this case, Obama has not ceded any authority that he ­or any other president ­has previously asserted in war powers. Syria presents a case in which previous precedents did not apply. There is no direct threat to American security, American personnel, or American interests. There is no Security Council resolution to enforce. And there is no claim that America needs to shore up the credibility of NATO or another important security alliance. Nor does Obama have even the feeble justification that the Clinton Administration offered in Kosovo­: that congressional appropriations midway through the operation offered tacit and retroactive approval for the bombings. It is naive to think that the next time a president wants to send forces abroad without congressional approval, he or she will be deterred by the fact that Barack Obama once sought congressional permission to bomb Syria. If a president can plausibly assert that any of the previous justifications apply -- ­including those offered in the Libya intervention -- the case of Syria is easily distinguishable.

#### Obama’s war powers are strong now and set precedent for an aggressive executive in the future – Libya proves

Ackerman 11 – Staff Writer @ Foreign Policy

(Bruce, Obama’s Unconstitutional War, http://www.foreignpolicy.com/articles/2011/03/24/obama\_s\_unconstitutional\_war?page=0,1)

By unilaterally going to war against Libya, Obama is bringing America closer to the imperial presidency than Bush ever did. In taking the country into a war with Libya, Barack Obama's administration is breaking new ground in its construction of an imperial presidency -- an executive who increasingly acts independently of Congress at home and abroad. Obtaining a U.N. Security Council resolution has legitimated U.S. bombing raids under international law. But the U.N. Charter is not a substitute for the U.S. Constitution, which gives Congress, not the president, the power "to declare war." After the Vietnam War, Congress passed the War Powers Resolution, which granted the president the power to act unilaterally for 60 days in response to a "national emergency created by attack upon the United States, its territories or possessions, or its armed forces." The law gave the chief executive an additional 30 days to disengage if he failed to gain congressional assent during the interim. But, again, these provisions have little to do with the constitutionality of the Libyan intervention, since Libya did not attack our "armed forces." The president failed to mention this fundamental point in giving Congress notice of his decision on Monday, in compliance with another provision of the resolution. Without an armed "attack," there is no compelling reason for the president to cut Congress out of a crucial decision on war and peace. This is particularly striking since, in the Libyan case, the president had plenty of time to get congressional support. A broad coalition -- from Senator John McCain to Senator John Kerry -- could have been mobilized on behalf of a bipartisan resolution as the administration engaged in the necessary international diplomacy. But apparently Obama thought it more important to lobby the Arab League than the U.S. Congress. In cutting out Congress, Obama has overstepped even the dubious precedent set when President Bill Clinton bombed Kosovo in 1999. Then, the Justice Department's Office of Legal Counsel asserted that Congress had given its consent by appropriating funds for the Kosovo campaign. It was a big stretch, given the actual facts -- but Obama can't even take advantage of this same desperate expedient, since Congress has appropriated no funds for the Libyan war. The president is simply using money appropriated to the Pentagon for general purposes to conduct the current air campaign. The War Powers Resolution doesn't authorize a single day of Libyan bombing. But it does provide an escape hatch, stating that it is not "intended to alter the constitutional authority of the Congress or of the President." So it's open for Obama to assert that his power as commander in chief allows him to wage war without Congress, despite the Constitution's insistence to the contrary. Many modern presidents have made such claims, and Harry Truman acted upon this assertion in Korea. But it's surprising to find Obama on the verge of ratifying such precedents. He was elected in reaction to the unilateralist assertions of John Yoo and other apologists for George W. Bush-era illegalities. Yet he is now moving onto ground that even Bush did not occupy. After a lot of talk about his inherent powers, Bush did get Congress to authorize his wars in Afghanistan and Iraq. Now, Obama is putting Bush-era talk into action in Libya -- without congressional authorization. The president's insistence that his Libyan campaign is limited in its purposes and duration is no excuse. These are precisely the issues that he should have defined in collaboration with Congress. Now that he claims inherent power, why can't he redefine U.S. objectives on his own? No less important, what is to stop some future president from using Obama's precedent to justify even more aggressively unilateral actions?

## AT: Mueller

#### Concede the risk is increasing in Li --- prolif raises the risk

#### Consensus Mueller is wrong

Allison Director Belfer Center for Science & International Affairs ‘7

(Graham-, Prof Gov & Chair Dubai Initiative Kennedy School of Gov., Nov. 12, National Interest, “The Three ‘Nos’ Knows”, <http://www.nationalinterest.org/Article.aspx?id=15998>)

In the previous issue of The National Interest, John Mueller argued that the threats from nuclear proliferation, nuclear terrorism and nuclear war are exaggerated. Rather, we may pose the greatest threat to ourselves: the price we pay for making nuclear weapons the "supreme priority" carries a hefty price in money and in lives. Graham Allison, Joseph Cirincione and William Potter weigh in. Mueller has the last word.

The Three “Nos” Knows

Graham Allison

“RADIOACTIVE HYPE” by John Mueller sharpens the barbs from his recent book, Overblown, in ways that demonstrate that he is, above all, a committed contrarian. One can agree with many points in his article and book. But his central propositions about the danger and appropriate responses to terrorism, nuclear terrorism and the proliferation of nuclear weapons are profoundly mistaken. Specifically, “Radioactive Hype” argues that:

–“Threat-mongers”—for which the 9/11 Commission, my book Nuclear Terrorism: The Ultimate Preventable Catastrophe and presidential candidates of both parties are the poster children—have greatly exaggerated the threat of terrorists exploding a nuclear weapon in one of our cities.

–An “obsessive quest to control nuclear proliferation—particularly since the end of the Cold War—has been substantially counterproductive.”

–This “nuclear obsession” drove the United States into “the current disastrous Iraq War” and now threatens war with Iran.

Given the space allotted, my response to each proposition must be abridged but will reference my earlier work on this topic and other analyses from the Belfer Center for Science and International Affairs, where these issues are addressed in greater depth.1

How Serious is the Threat of Nuclear Terrorism?

MUELLER IS entitled to his opinion that the threat of nuclear proliferation and nuclear terrorism is “exaggerated” and “overwrought.” But analysts of various political persuasions, in and out of government, are virtually unanimous in their judgment to the contrary. As the national-security community learned during the Cold War, risk = likelihood x consequences. Thus, even when the likelihood of nuclear Armageddon was small, the consequences were so catastrophic that prudent policymakers felt a categorical imperative to do everything that feasibly could be done to prevent that war. Today, a single nuclear bomb exploding in just one city would change our world. Given such consequences, differences between a 1 percent and a 20 percent likelihood of such an attack are relatively insignificant when considering how we should respond to the threat.

#### Mueller is wrong- nuclear terrorism is likely

Potter Director Martin Center for Nonprolif Studies ‘7

(William C.-, Nonprolif Monterey Institute of International Studies, Nov. 12, National Interest, “Non-ProliferationParody”, <http://www.nationalinterest.org/Article.aspx?id=15998>)

Mueller’s attempt to dismiss the threat posed by nuclear terrorists as alarmist fantasy also falters due to a number of mistaken assumptions. Unfortunately, contrary to Mueller’s assertion, there is substance and not only rumor about terrorist efforts to acquire fissile material and nuclear weapons. Although the number of relevant terrorist groups involved is small, it is neither zero nor one. In addition to a larger body of evidence involving Al-Qaeda that Mueller acknowledges, there is solid documentation about the sustained efforts in the early 1990s by the Japanese religious cult Aum Shinrikyo to obtain nuclear weapons and their components. Among the obstacles that proved most difficult for both Aum and Al-Qaeda to overcome was access to the fissile material needed to build an improvised nuclear device—that is, a crude but real nuclear explosive. The two organizations were also inhibited by their dearth of in-house technical expertise, unfamiliarity with the nuclear black market and lack of access to potential nuclear suppliers. However, what is fantasy is not the difficulty of building such a device but Mueller’s confidence that the luck we have enjoyed to date will hold indefinitely.

#### The risk is high

**Bunn et al 10/2**/13 Matthew, Valentin Kuznetsov, Martin B. Malin, Yuri Morozov, Simon Saradzhyan, William H. Tobey, Viktor I. Yesin, and Pavel S. Zolotarev. "Steps to Prevent Nuclear Terrorism." Paper, Belfer Center for Science and International Affairs, Harvard Kennedy School, October 2, 2013, Matthew Bunn. Professor of the Practice of Public Policy at Harvard Kennedy School andCo-Principal Investigator of Project on Managing the Atom at Harvard University’s Belfer Center for Science and International Affairs. • Vice Admiral Valentin Kuznetsov (retired Russian Navy). Senior research fellow at the Institute for U.S. and Canadian Studies of the Russian Academy of Sciences, Senior Military Representative of the Russian Ministry of Defense to NATO from 2002 to 2008. • Martin Malin. Executive Director of the Project on Managing the Atom at the Belfer Center for Science and International Affairs. • Colonel Yuri Morozov (retired Russian Armed Forces). Professor of the Russian Academy of Military Sciences and senior research fellow at the Institute for U.S. and Canadian Studies of the Russian Academy of Sciences, chief of department at the Center for Military-Strategic Studies at the General Staff of the Russian Armed Forces from 1995 to 2000. • Simon Saradzhyan. Fellow at Harvard University’s Belfer Center for Science and International Affairs, Moscow-based defense and security expert and writer from 1993 to 2008. • William Tobey. Senior fellow at Harvard University’s Belfer Center for Science and International Affairs and director of the U.S.-Russia Initiative to Prevent Nuclear Terrorism, deputy administrator for Defense Nuclear Nonproliferation at the U.S. National Nuclear Security Administration from 2006 to 2009. • Colonel General Viktor Yesin (retired Russian Armed Forces). Leading research fellow at the Institute for U.S. and Canadian Studies of the Russian Academy of Sciences and advisor to commander of the Strategic Missile Forces of Russia, chief of staff of the Strategic Missile Forces from 1994 to 1996. • Major General Pavel Zolotarev (retired Russian Armed Forces). Deputy director of the Institute for U.S. and Canadian Studies of the Russian Academy of Sciences, head of the Information and Analysis Center of the Russian Ministry of Defense from1993 to 1997, section head - deputy chief of staff of the Defense Council of Russia from 1997 to 1998.<http://belfercenter.ksg.harvard.edu/publication/23430/steps_to_prevent_nuclear_terrorism.html>

I. Introduction In 2011, Harvard’s Belfer Center for Science and International Affairs and the Russian Academy of Sciences’ Institute for U.S. and Canadian Studies published “The U.S. – Russia Joint Threat Assessment on Nuclear Terrorism.” The assessment analyzed the **means**, **motives**, and **access of** would-be nuclear terrorists, and concluded that **the threat** of nuclear terrorism **is** **urgent** and **real**. The Washington and Seoul Nuclear Security Summits in 2010 and 2012 established and demonstrated a **consensus** among political leaders from around the world that nuclear terrorism poses a **serious threat to the** peace, security, and prosperity of **our planet**. For any country, a terrorist attack with a nuclear device would be an immediate and catastrophic disaster, and the negative effects would reverberate around the world far beyond the location and moment of the detonation. Preventing a nuclear terrorist attack requires international cooperation to secure nuclear materials, especially among those states producing nuclear materials and weapons. As the world’s two greatest nuclear powers, the United States and Russia have the greatest experience and capabilities in securing nuclear materials and plants and, therefore, share a special responsibility to lead international efforts to prevent terrorists from seizing such materials and plants. The depth of convergence between U.S. and Russian vital national interests on the issue of nuclear security is best illustrated by the fact that bilateral cooperation on this issue has continued uninterrupted for more than two decades, even when relations between the two countries occasionally became frosty, as in the aftermath of the August 2008 war in Georgia. Russia and the United States have strong incentives to forge a close and trusting partnership to prevent nuclear terrorism and have made enormous progress in securing fissile material both at home and in partnership with other countries. However, to meet the evolving threat posed by those individuals intent upon using nuclear weapons for terrorist purposes, the United States and Russia need to deepen and broaden their cooperation. The 2011 “U.S. - Russia Joint Threat Assessment” offered both specific conclusions about the nature of the threat and general observations about how it might be addressed. This report builds on that foundation and analyzes the existing framework for action, cites gaps and deficiencies, and makes specific recommendations for improvement. “The U.S. – Russia Joint Threat Assessment on Nuclear Terrorism” (The 2011 report executive summary): • Nuclear terrorism is a **real** and **urgent** threat. Urgent actions are required to reduce the risk. The risk is driven by the rise of terrorists who seek to inflict unlimited damage, many of whom have sought justification for their plans in **radical interpretations of Islam;** by the spread of information about the decades-old technology of nuclear weapons; by the increased availability of weapons-usable nuclear materials; and by globalization, which makes it easier to move people, technologies, and materials across the world. • Making a crude nuclear bomb would not be easy, but is potentially within the capabilities of a technically sophisticated terrorist group, as **numerous** government **studies have confirmed**. Detonating a stolen nuclear weapon would likely be difficult for terrorists to accomplish, if the weapon was equipped with modern technical safeguards (such as the electronic locks known as Permissive Action Links, or PALs). Terrorists could, however, cut open a stolen nuclear weapon and make use of its nuclear material for a bomb of their own. • The nuclear material for a bomb is small and difficult to detect, making it a major challenge to stop nuclear smuggling or to recover nuclear material after it has been stolen. Hence, a primary focus in reducing the risk must be to keep nuclear material and nuclear weapons from being stolen by continually improving their security, as agreed at the Nuclear Security Summit in Washington in April 2010. • Al-Qaeda has sought nuclear weapons **for** almost **two decades**. The group has repeatedly attempted to purchase stolen nuclear material or nuclear weapons, and has repeatedly attempted to **recruit** nuclear **expertise**. Al-Qaeda reportedly conducted tests of conventional explosives for its nuclear program in the desert in Afghanistan. The group’s nuclear ambitions continued after its dispersal following the fall of the Taliban regime in Afghanistan. Recent writings from top al-Qaeda leadership are focused on justifying the mass slaughter of civilians, including the use of weapons of mass destruction, and are in all likelihood intended to **provide a formal** religious **justification for nuclear use**. While there are significant gaps in coverage of the group’s activities, al-Qaeda appears to have been frustrated thus far in acquiring a nuclear capability; it is unclear whether the the group has acquired weapons-usable nuclear material or the expertise needed to make such material into a bomb. Furthermore, pressure from a broad range of counter-terrorist actions probably has reduced the group’s ability to manage large, complex projects, but has not eliminated the danger. However, **there is no sign the group has abandoned its nuclear ambitions.** On the contrary, leadership statements as recently as 2008 indicate that the intention to **acquire and use nuclear weapons is as strong as ever**.

## Yes War

**Resources, nationalism, security, history, and strategy all mean war is still possible**

**Mearsheimer,** February 25 **1999, [**John**,** Whitney H. Shepardson Fellow, Council on Foreign Relations; R. Wendell Harrison Distinguished Service Professor of Political Science, University of Chicago Council on Foreign Relations Great Debate Series, “Is Major War Obsolete?” [http://www.ciaonet.org/conf/cfr10](http://www.ciaonet.org/conf/cfr10/)]

**Obsolescence of major war is impossible—states inevitably slip into conflicts**

**Doran 99 (**Charles F., Professor of International Relations at Johns Hopkins University's School of Advanced International Studies, Survival, “Is Major War Obsolete? An Exchange: The Structural Turbulence of International Affairs,” June, vol.41 no.2, p.139-142)

Finally, of course, it is important to be clear about the meaning of the word at the heart of this argument. 'Obsolescence', in this context, can have two meanings. One is that something falls out of fashion. The other is that it is no longer in use. The former definition applies, perhaps, to war in general. But it does not apply to major war, because major war was never in fashion. I do not believe that any government since the beginning of the nineteenth century, has purposely sought a major war. Rather, they have slipped into major wars. They may well have been interested in fighting wars, especially if such wars were thought to be quick and not very destructive, or only destructive for the other side. But they did not expect these wars to develop into the kind that took place in the Napoleonic period, or the First and Second World Wars. That leaves the second definition, 'disuse'. Therefore the burden of the argument has to be that major wars are no longer going to happen. And that is a faith that is very difficult to maintain.

**War can happen**

**Ferguson 2008** - sr. fellow @ the Hoover Institute and professor of History @ Harvard (Niall, Hoover Digest no1 47-53 Wint 2008)

The risk of a major geopolitical crisis in 2007 is certainly lower than it was in 1914. Yet it is not so low as to lie altogether beyond the realm of probability. The escalation of violence in the Middle East as Iraq disintegrates and Iran presses on with its nuclear program is close to being a certainty, as are the growing insecurity of Israel and the impossibility of any meaningful U.S. exit from the region. All may be harmonious between the United States and China today, yet the potential for tension over trade and exchange rates has unquestionably increased since the Democrats gained control of Congress. Nor should we forget about security flashpoints such as the independence of Taiwan, the threat of North Korea, and the nonnuclear status of Japan. To consign political risk to the realm of uncertainty seems almost as rash today as it was in the years leading up the First World War. Anglo-German economic commercial ties reached a peak in 1914, but geopolitics trumped economics. It often does.

### Popular Pressure

#### Popular pressure does not check nuclear command and control and nuclear retal --- that’s CX

### Deterrence

**Deterrence doesn’t check.**

**Krieger 2009 –** professor of politics (David, September 4th, “Still loving the Bomb After All these Years” Nuclear Age Peace Foundation https://www.wagingpeace.org/articles/2009/09/04\_krieger\_newsweek\_response.php?krieger)

Tepperman builds upon Waltz’s logic, and concludes “that all states are rational,” even though their leaders may have a lot of bad qualities, including being “stupid, petty, venal, even evil….”  He asks us to trust that rationality will always prevail when there is a risk of nuclear retaliation, because these weapons make “the costs of war obvious, inevitable, and unacceptable.”  Actually, he is asking us to do more than trust in the rationality of leaders; he is asking us to gamble the future on this proposition.  “The iron logic of deterrence and mutually assured destruction is so compelling,” Tepperman argues, “it’s led to what’s known as the nuclear peace….”  But if this is a peace worthy of the name, which it isn’t, it certainly is not one on which to risk the future of civilization.  One irrational leader with control over a nuclear arsenal could start a nuclear conflagration, resulting in a global Hiroshima. Tepperman celebrates “the iron logic of deterrence,” but deterrence is a theory that is far from rooted in “iron logic.”  It is a theory based upon threats that must be effectively communicated and believed.  Leaders of Country A with nuclear weapons must communicate to other countries (B, C, etc.) the conditions under which A will retaliate with nuclear weapons.  The leaders of the other countries must understand and believe the threat from Country A will, in fact, be carried out.  The longer that nuclear weapons are not used, the more other countries may come to believe that they can challenge Country A with impunity from nuclear retaliation.  The more that Country A bullies other countries, the greater the incentive for these countries to develop their own nuclear arsenals.  Deterrence is unstable and therefore precarious. Most of the countries in the world reject the argument, made most prominently by Kenneth Waltz, that the spread of nuclear weapons makes the world safer.  These countries joined together in the Nuclear Non-Proliferation Treaty (NPT) to prevent the spread of nuclear weapons, but they never agreed to maintain indefinitely a system of nuclear apartheid in which some states possess nuclear weapons and others are prohibited from doing so.  The principal bargain of the NPT requires the five NPT nuclear weapons states (US, Russia, UK, France and China) to engage in good faith negotiations for nuclear disarmament, and the International Court of Justice interpreted this to mean complete nuclear disarmament in all its aspects.  Tepperman finds that when viewed from his “nuclear optimist” perspective, “nuclear weapons start to seem a lot less frightening.”  “Nuclear peace,” he tells us, “rests on a scary bargain: you accept a small chance that something extremely bad will happen in exchange for a much bigger chance that something very bad – conventional war – won’t happen.”  But the “extremely bad” thing he asks us to accept is the end of the human species.  Yes, that would be serious.  He also doesn’t make the case that in a world without nuclear weapons, the prospects of conventional war would increase dramatically.  After all, it is only an unproven supposition that nuclear weapons have prevented wars, or would do so in the future.  We have certainly come far too close to the precipice of catastrophic nuclear war. As an ultimate celebration of the faulty logic of deterrence, Tepperman calls for providing any nuclear weapons state with a “survivable second strike option.”  Thus, he not only favors nuclear weapons, but finds the security of these weapons to trump human security.   Presumably he would have President Obama providing new and secure nuclear weapons to North Korea, Pakistan and any other nuclear weapons states that come along so that they will feel secure enough not to use their weapons in a first-strike attack.  Do we really want to bet the human future that Kim Jong-Il and his successors are more rational than Mr. Tepperman?

### Inter-d

**Trade doesn’t prevent war**

**Martin, Mayer and Thoenig, 2008 -** Phillipe, University of Paris 1 Pantheon—Sorbonne, Paris School of Economics, and Centre for Economic Policy Research; Thierry MAYER, University of Paris 1 Pantheon—Sorbonne, Paris School of Economics, CEPII, and Centre for Economic Policy Research, Mathias THOENIG, University of Geneva and Paris School of Economics, (The Review of Economic Studies 75)

Does globalization pacify international relations? The “liberal” view in political science argues that increasing trade flows and the spread of free markets and democracy should limit the incentive to use military force in interstate relations. This vision, which can partly be traced back to Kant’s Essay on Perpetual Peace (1795), has been very influential: The main objective of the European trade integration process was to prevent the killing and destruction of the two World Wars from ever happening again.1 Figure 1 suggests2 however, that during the 1870–2001 period, the correlation between trade openness and military conflicts is not a clear cut one. The first era of globalization, at the end of the 19th century, was a period of rising trade openness and multiple military conflicts, culminating with World War I. Then, the interwar period was characterized by a simultaneous collapse of world trade and conflicts. After World War II, world trade increased rapidly, while the number of conflicts decreased (although the risk of a global conflict was obviously high). There is no clear evidence that the 1990s, during which trade flows increased dramatically, was a period of lower prevalence of military conflicts, even taking into account the increase in the number of sovereign states.

#### Iraq Kuwait proves interdependence peace theory is false --- only applies to great power not prolif or terror

### AT: Quinlan

**No war args don’t assume accidents**

**Corcoran 09** (“Catastrophic Threats.” 03/07/09. GlobalSecurity.Org <http://sitrep.globalsecurity.org/articles/090307234-catastrophic-threats.htm> LTC Edward Corcoran, USA-retired, Ph.D., serves as a Senior Fellow on national security issues at GlobalSecurity.org. Ed ended his military career as a Strategic Analyst at the US Army War College where he chaired studies for the Office of the Deputy Chief of Operations. Prior to that, as a Soviet affairs specialist, he served on intelligence staffs and spent two years as a Liason Officer to the Commander-in-Chief, Group of Soviet Forces, Germany. In his primary military specialty as a Nuclear Weapons Officer he served on overseas assignments with depot units. After his military career, Ed provided extensive support to Department of Energy activities on Operations Security and technology transfer issues, as well as serving as a core member of the Secretary's Safeguards and Security Task Force which evaluated security throughout the DOE complex. He is a member of the National Advisory Board for the Alsos Digital Library for Nuclear Issues.)

The potential for such an exchange to actually occur was higher than almost anyone realized. Robert McNamara, the US Secretary of Defense during the Cuban Missile Crisis, has recently outlined how that crisis came close to initiating nuclear war. In another chilling episode, a Russian colonel described how a false alert resulted in launch instructions for 5,000 Soviet missiles, instructions which the colonel declined to carry out. With the demise of the Soviet Union and greatly improved US-Russian relations, the likelihood of this threat has significantly diminished. These improved relations led to the 2002 Moscow Treaty, in which each nation agreed to reduce strategic nuclear forces to about 2000 deployed warheads. Unfortunately, the treaty does not require the actual destruction of any weapons, merely their removal from deployed status. Moreover, these reduced levels to not have to be met until December 31, 2012, which happens to also be the very day the treaty expires. So, while it is a step in the right direction, thousands of missiles remain in place and some unexpected chain of events could still lead to catastrophe.

### Other

#### All our ev assumes counterforce

### War

**Prefer our evidence—the majority of experts think major power war is still likely.**

**Mearsheimer 99** (John J., Professor of Political Science at the University of Chicago, “Transcript: Is Major War Obsolete? Great Debate Series between Professor Michael Mandelbaum and Professor John J. Mearsheimer, Presider: Mr. Fareed Zakaria”, http://http://www.ciaonet.org/conf/cfr10/conf/cfr10)

My third and final point here is, the fact of the matter is, that there’s hardly anybody in the national security establishment-and I bet this is true of Michael-who believes that war is obsolescent. I’m going to tell you why I think this is the case. Consider the fact that the United States stations roughly 100,000 troops in Europe and 100,000 troops in Asia. We spend an enormous amount of money on defense. We’re spending almost as much money as we were spending during the Cold War on defense. We spend more money than the next six countries in the world spend on defense. The questions is, why are we spending all this money? Why are we stationing troops in Europe? Why are we stationing troops in Asia? Why are we concentrating on keeping NATO intact and spreading it eastward? I’ll tell you why, because we believe that if we don’t stay there and we pull out, trouble is going to break out, and not trouble between minor powers, but trouble between major powers. That’s why we’re there. We know very well that if we leave Europe, the Germans are going to seriously countenance, if not automatically go, and get nuclear weapons. Certainly the case with the Japanese. Do you think the Germans and the Japanese are going to stand for long not to have nuclear weapons? I don’t think that’s the case. Again, that security zone between the Germans and the Russians-there’ll be a real competition to fill that. The reason we’re there in Europe, and the reason that we’re there in Asia is because we believe that great-power war is a potential possibility, which contradicts the argument on the table. So I would conclude by asking Michael if, number one, he believes we should pull out of Europe and pull out of Asia, and number two, if he does not, why not?

### AT: No Impact

**Nuclear war possible between emerging nuclear powers**

**Choi 11** [Charles Q. Choi, 2-22-11, writer for National Geographic News, “Small Nuclear War Could Reverse Global Warming for Years,” http://news.nationalgeographic.com/news/2011/02/110223-nuclear-war-winter-global-warming-environment-science-climate-change/]

Even a regional nuclear war could spark "unprecedented" global cooling and reduce rainfall for years, according to U.S. government computer models. Widespread famine and disease would likely follow, experts speculate. During the Cold War a nuclear exchange between superpowers—such as the one feared for years between the United States and the former Soviet Union—was predicted to cause a "nuclear winter." In that scenario hundreds of nuclear explosions spark huge fires, whose smoke, dust, and ash blot out the sun for weeks amid a backdrop of dangerous radiation levels. Much of humanity eventually dies of starvation and disease. Today, with the United States the only standing superpower, nuclear winter is little more than a nightmare. But nuclear war remains a very real threat—for instance, between developing-world nuclear powers, such as India and Pakistan. To see what climate effects such a regional nuclear conflict might have, scientists from NASA and other institutions modeled a war involving a hundred Hiroshima-level bombs, each packing the equivalent of 15,000 tons of TNT—just 0.03 percent of the world's current nuclear arsenal. (See a National Geographic magazine feature on weapons of mass destruction.) The researchers predicted the resulting fires would kick up roughly five million metric tons of black carbon into the upper part of the troposphere, the lowest layer of the Earth's atmosphere. In NASA climate models, this carbon then absorbed solar heat and, like a hot-air balloon, quickly lofted even higher, where the soot would take much longer to clear from the sky.

## --Yes War

**War can happen- US military spending and overseas deployment all prove our argument – that’s Mearsheimer**

**New developing nuclear powers show that countries are preparing to fight- that’s Choi**

## --Ext: Nuclear Winter

**Extend Dorr- nuclear winter causes extinction- it causes enough smoke to block out the atmosphere resulting in another Ice Age-1% of nukes are enough to trigger our argument**

**Nuclear war causes extinction**

**Wickersham ’10** - University of Missouri adjunct professor of Peace Studies and a member of The Missouri University Nuclear Disarmament Education Team, author book about nuclear disarmament education (Bill, 4/11/10, “Threat of ‘nuclear winter’ remains New START treaty is step in right direction.” <http://www.columbiatribune.com/news/2010/apr/11/threat-of-nuclear-winter-remains/>)

In addressing the environmental consequences of nuclear war, Columbian Steve Starr has written a summary of studies published by the Bulletin of the International Network of Engineers and Scientists Against Proliferation, which concludes: **“U.S. researchers have confirmed the scientific validity of the concept of ‘nuclear winter’** and have demonstrated that any conflict which targets even a tiny fraction of the global arsenal will cause catastrophic disruptions of the global climate.” In another statement on his Web site, Starr says: “If 1% of the nuclear weapons now ready for war were

 detonated in large cities, they would utterly devastate the environment, climate, ecosystems and inhabitants of Earth. A war fought with thousands of strategic nuclear weapons **would leave the Earth uninhabitable**.”

**Their studies are flawed- most qualified evidence proves even limited exchanges cause nuclear winter**

**Robok ’09 -** Professor of climatology in the Department of Environmental Sciences at Rutgers University and the associate director of its Center for Environmental Prediction; holds a doctorate in meteorology from the Massachusetts Institute of Technology, is a Fellow of the American Meteorological Society, is a Fellow of the American Association for the Advancement of Science, and is President of the Atmospheric Sciences Section of the American Geophysical Union (Alan, 1/6/09, Encyclopedia of Earth, “Nuclear Winter,” http://www.eoearth.org/article/Nuclear\_winter)

Nuclear winter is a term that describes the climatic effects of nuclear war. In the 1980's, work conducted jointly by Western and Soviet scientists showed that for a full-scale nuclear war between the United States and the Soviet Union the climatic consequences, and indirect effects of the collapse of society, would be so severe that the ensuing nuclear winter would produce famine for billions of people far from the target zones. There are several wrong impressions that people have about nuclear winter. One is that there was a flaw in the theory and that the large climatic effects were disproven. Another is that the problem, even if it existed, has been solved by the end of the nuclear arms race. But these are both wrong.

, new nuclear states threaten global climate change even with arsenals that are much less than 1% of the current global arsenal.

**Nuclear war destroys the ozone**

**Toon et al ’08 -** chair of the Department of Atmospheric and Oceanic Sciences at CU-Boulder Michael J. Mills, Owen B. Toon, Richard P. Turco, Douglas E. Kinnison, and Rolando R. Garcia (2/7/08, Proceedings of the National Academy of Sciences, “Massive global ozone loss predicted following regional nuclear conflict,” http://www.pnas.org/content/105/14/5307.abstract)

We use a chemistry-climate model and new estimates of smoke produced by fires in contemporary cities to calculate the impact on stratospheric ozone of a regional nuclear war between developing nuclear states involving 100 Hiroshima-size bombs exploded in cities in the northern subtropics. We find column ozone losses in excess of 20% globally, 25–45% at midlatitudes, and 50–70% at northern high latitudes persisting for 5 years, with substantial losses continuing for 5 additional years. Column ozone amounts remain near or <220 Dobson units at all latitudes even after three years, constituting an extratropical “ozone hole.” The resulting increases in UV radiation could impact the biota significantly, including serious consequences for human health. The primary cause for the dramatic and persistent ozone depletion is heating of the stratosphere by smoke, which strongly absorbs solar radiation. The smoke-laden air rises to the upper stratosphere, where removal mechanisms are slow, so that much of the stratosphere is ultimately heated by the localized smoke injections. Higher stratospheric temperatures accelerate catalytic reaction cycles, particularly those of odd-nitrogen, which destroy ozone. In addition, the strong convection created by rising smoke plumes alters the stratospheric circulation, redistributing ozone and the sources of ozone-depleting gases, including N2O and chlorofluorocarbons. The ozone losses predicted here are significantly greater than previous “nuclear winter/UV spring” calculations, which did not adequately represent stratospheric plume rise. Our results point to previously unrecognized mechanisms for stratospheric ozone depletion.

**Nuclear war destroys ag**

**Choi 11** [Charles Q. Choi, 2-22-11, writer for National Geographic News, “Small Nuclear War Could Reverse Global Warming for Years,” http://news.nationalgeographic.com/news/2011/02/110223-nuclear-war-winter-global-warming-environment-science-climate-change/]

For a time Earth would likely be a colder, hungrier planet. "Our results suggest that agriculture could be severely impacted, especially in areas that are susceptible to late-spring and early-fall frosts," said Oman, of NASA's Goddard Space Flight Center in Greenbelt, Maryland. "Examples similar to the crop failures and famines experienced following the Mount Tambora eruption in 1815 could be widespread and last several years," he added. That Indonesian volcano ushered in "the year without summer," a time of famines and unrest. (See pictures of the Mount Tambora eruption.) All these changes would also alter circulation patterns in the tropical atmosphere, reducing precipitation by 10 percent globally for one to four years, the scientists said. Even after seven years, global average precipitation would be 5 percent lower than it was before the conflict, according to the model. In addition, researcher Michael Mills, of the National Center for Atmospheric Research in Colorado, found large decreases in the protective ozone layer, leading to much more ultraviolet radiation reaching Earth's surface and harming the environment and people. "The main message from our work," NASA's Oman said, "would be that **even a regional nuclear conflict would have global consequences**."

**We access their existential claims**

**PHILLIPS 2000** (Dr. Allen, Peace Activist, Nuclear Winter Revisited, October, <http://www.peace.ca/nuclearwinterrevisited.htm>)

Those of us who were involved in peace activities in the 80's probably remember a good deal about nuclear winter. Those who have become involved later may have heard little about it. No scientific study has been published since 1990, and very little appears now in the peace or nuclear abolition literature. \*It is still important.\* With thousands of rocket-launched weapons at "launch-on-warning", any day there could be an all-out nuclear war by accident. The fact that there are only half as many nuclear bombs as there were in the 80's makes no significant difference. Deaths from world-wide starvation after the war would be several times the number from direct effects of the bombs, and the surviving fraction of the human race might then diminish and vanish after a few generations of hunger and disease, in a radioactive environment.

**Nuclear war does cause extinction- most recent evidence**

**Wickersham ’11** - University of Missouri adjunct professor of Peace Studies and a member of The Missouri University Nuclear Disarmament Education Team, author book about nuclear disarmament education (Bill, 9/27/11, “Nuclear weapons still a threat,” http://www.columbiatribune.com/news/2011/sep/27/nuclear-weapons-still-a-threat/)

Nearly 20 years after the Cold War ended, **humankind still faces the distinct possibility of instant extinction without representation. If nuclear war occurs** between Russia and the United States, there will be no parliamentary or congressional debates nor declarations of war. In a time of crisis or perceived attack, the Russian and U.S. presidents each have only a few minutes to make a decision to order an attack against each other. The time frame for those decisions could be as short as seven minutes, depending on the nature of the perceived attack and the efficiency of communications within the respective early-warning chains of command. Launch-to-landing time for submarine-launched nuclear missiles can occur in as few as four minutes. Launch-to-landing time for hundreds of land-based intercontinental ballistic missiles is about 25 minutes. An attack with just two 1-megaton nuclear warheads would unleash explosive power equivalent to that caused by all the bombs used during World War II. For the duration of the Cold War, leaders of the United States and USSR were concerned about the devastation both countries would experience if a nuclear war were triggered by a false alarm attributable to human or technological error. The Sept. 11, 2001, terrorist attack on New York killed nearly 3,000 people, causing massive destruction, chaos and grief. In comparison, a purposeful or accidental nuclear strike between the United States and Russia would kill hundreds of millions in the short term and many more over time caused by worldwide, wind-driven nuclear fallout. Thus, the threat of nuclear war is the most serious potential health, environmental, agricultural, educational and moral problem facing humanity. Steven Starr, senior scientist with Physicians for Social Responsibility, said research makes clear the environmental consequences of a U.S.-Russian nuclear war: “If these weapons are detonated in the large cities of either of their nations, they will cause such catastrophic damage to the global environment that the **Earth will become** virtually **uninhabitable** for most humans and many other complex forms of life.”

**Most recent evidence proves nuclear winter causes extinction**

**Starr ’12** - Associate member of the Nuclear Age Peace Foundation, has been published by the Bulletin of the Atomic Scientists, his writings appear on the websites of the Nuclear Age Peace Foundation, the Moscow Institute of Physics and Technology Center for Arms Control, Energy and Environmental Studies, Scientists for Global Responsibility, and the International Network of Scientists Against Proliferation, has worked with the governments of Switzerland, Chile, New Zealand and Sweden, in support of their efforts at the United Nations to eliminate thousands of high-alert, launch-ready nuclear weapons, has made presentations to Ministry Officials, Parliamentarians, Universities, citizens and students from around the world, and specializes in making technical scientific information understandable to all audiences; is the Director of the Clinical Laboratory Science Program at the University of Missouri-Columbia. (Steven, 2012, “What is nuclear darkness?,” http://www.nucleardarkness.org/web/whatisnucleardarkness/)

In a nuclear war, burning cities would create millions of tons of thick, black smoke. This smoke would rise above cloud level, into the stratosphere, where it would quickly spread around the planet. A large nuclear war would produce enough smoke to block most sunlight from reaching the Earth's surface. Massive absorption of warming sunlight by a global stratospheric smoke layer would rapidly create Ice Age temperatures on Earth . The cold would last a long time; NASA computer models predict 40% of the smoke would still remain in the stratosphere ten years after a nuclear war. Half of 1% of the explosive power of US-Russian nuclear weapons can create enough nuclear darkness to impact global climate. 100 Hiroshima-size weapons exploded in the cities of India and Pakistan would put up to 5 million tons of smoke in the stratosphere . The smoke would destroy much of the Earth's protective ozone layer and drop temperatures in the Northern Hemisphere to levels last seen in the Little Ice Age. Shortened growing seasons could cause up to 1 billion people to starve to death. A large nuclear war could put 150 million tons of smoke in the stratosphere and make global temperatures colder than they were 18,000 years ago during the coldest part of the last Ice Age. Killing frosts would occur every day for 1-3 years in the large agricultural regions of the Northern Hemisphere. Average global precipitation would be reduced by 45%. Earth's ozone layer would be decimated. Growing seasons would be eliminated. A large nuclear war would utterly devastate the environment and cause most people to starve to death . Deadly climate change, radioactive fallout and toxic pollution would cause already stressed ecosystems to collapse. The result would be **a mass extinction event that would wipe out** many animals living at the top of the food chains - including **human beings.**