## \*\*\* 1AC

### 1AC—Plan

**Plan --- The United States federal government should acquire electricity from small modular reactors for military instillations in the United States and reduce relevant restrictions.**

### 1AC—Military

**Advantage One – The Military**

**Domestic DOD bases are vulnerable due to connectivity to the civilian grid.**

**Robitaille 12** (George, Department of Army Civilian & US Army War College, *Small Modular Reactors: The Army’s Secure Source of Energy?*, March, Strategy Research Project)

In recent years, the U.S Department of Defense (DoD) has identified a security issue at our installations related to the dependence on the civilian electrical grid. 1 The DoD depends on a steady source of electricity at military facilities to perform the functions that secure our nation. The flow of electricity into military facilities is controlled by a public grid system that is susceptible to being compromised because of the age of the infrastructure, damage from **natural disasters** and the potential for **cyber attacks**. Although most major functions at military installations employ diesel powered generators as temporary backup, the public grid may not be available to provide electricity when it is needed the most. The United States electrical infrastructure system is prone to failures and susceptible to **terrorist attacks**. 2 It is critical that the source of electricity for our installations is reliable and secure. In order to ensure that our military facilities possess a secure source of electricity, either the public system of electric generation and distribution is upgraded to increase its reliability as well as reducing its susceptibility to cyber attack or another source of electricity should be pursued. Although significant investments are being made to upgrade the electric grid, the current **investment levels** are not keeping up with the aging system. Small modular reactors (SMRs) are nuclear reactors that are about an order of magnitude smaller than traditional commercial reactor used in the United States. SMRs are capable of generating electricity and at the same time, they are not a significant contributor to global warming because of green house gas emissions. The DoD needs to look at small modular nuclear reactors (SMRs) to determine if they can provide a safe and secure source of electricity. Electrical Grid Susceptibility to Disruptions According to a recent report by the Defense Science Board, the DoD gets ninety nine percent of their electrical requirements from the civilian electric grid. 3 The electric grid, as it is currently configured and envisioned to operate for the foreseeable future, may not be reliable enough to ensure an uninterrupted flow of electricity for our critical military facilities given the influences of the aging infrastructure, its susceptibility to severe weather events, and the potential for cyber attacks. The DoD dependency on the grid is reflected in the $4.01 Billion spent on facilities energy in fiscal year 2010, the latest year which data was available. 4 The electricity used by military installations amounts to $3.76 billion. 5 As stated earlier, the DoD relies on the commercial grid to provide a secure source of energy to support the operations that ensure the security of our nation and it may not be available when we need it. The system could be taken down for extended periods of time by failure of aging components, acts of nature, or intentionally by cyber attacks. Aging Infrastructure. The U.S electric power grid is made up of independently owned power plants and transmission lines. The political and environmental resistance to building new electric generating power plants combined with the rise in consumption and aging infrastructure increases the potential for grid failure in the future. There are **components** in the U.S. electric grid that are over one hundred years oldand some of the recent outages such as the 2006 New York blackout can be directly attributed to this out of date, aging infrastructure. 6 Many of the components of this system are at or exceeding their operational life and the general trend of the utility companies is to not replace power lines and other equipment until they fail. 7 The government led deregulation of the electric utility industry that started in the mid 1970s has contributed to a three decade long deterioration of the electric grid and an increased state of instability. Although significant investments are being made to upgrade the electric grid, the many years of prior neglect will require a considerable amount of time and funding to bring the aging infrastructure up to date. Furthermore, the current investment levels to upgrade the grid are not keeping up with the aging system. 8 In addition, **upgrades** to the digital infrastructure which were done to increase the systems efficiency and reliability, have actually made the system more susceptible to cyber attacks. 9 Because of the aging infrastructure and the impacts related to weather, the extent, as well as frequency of failures is expected to increase in the future. Adverse Weather. According to a 2008 grid reliability report by the Edison Electric Institute, sixty seven per cent of all power outages are related to **weather**. Specifically, lightning contributed six percent, while adverse weather provided thirty one percent and vegetation thirty percent (which was predominantly attributed to wind blowing vegetation into contact with utility lines) of the power outages. 10 In 1998 a falling tree limb damaged a transformer near the Bonneville Dam in Oregon, causing a cascade of related black-outs across eight western states. 11 In August of 2003 the lights went out in the biggest blackout in North America, plunging over fifty million people into darkness over eight states and two Canadian provinces. Most areas did not have power restored four or five days. In addition, drinking water had to be distributed by the National Guard when water pumping stations and/or purification processes failed. The estimated economic losses associated with this incident were about five billion dollars. Furthermore, this incident also affected the operations of twenty two nuclear plants in the United States and Canada. 12 In 2008, Hurricane Ike caused approximately seven and a half million customers to lose power in the United States from Texas to New York. 13 The electric grid suffered numerous power outages every year throughout the United States and the number of outages is expected to increase as the infrastructure ages without sufficient upgrades and weather-related impacts continue to become more frequent. Cyber Attacks. The civilian grid is made up of three unique electric networks which cover the East, West and Texas with approximately one hundred eighty seven thousand miles of power lines. There are several weaknesses in the electrical distribution infrastructure system that could compromise the flow of electricity to military facilities. The flow of energy in the network lines as well as the main distribution hubs has become totally dependent on **computers** and internet-based communications. Although the digital infrastructure makes the grid more efficient, it also makes it more susceptible to cyber attacks. Admiral Mr. Dennis C. Blair (ret.), the former Director of National Intelligence, testified before Congress that “the growing connectivity between information systems, the Internet, and other infrastructures creates opportunities for attackers to disrupt telecommunications, electrical power, energy pipelines, refineries, financial networks, and other critical infrastructures. 14 ” The Intelligence Community assesses that a number of nations already have the technical capability to conduct such attacks. 15 In the 2009 report, Annual Threat Assessment of the Intelligence Community for the Senate Armed Services Committee, Adm. Blair stated that “Threats to cyberspace pose one of the most serious economic and national security challenges of the 21st Century for the United States and our allies.”16 In addition, the report highlights a growing array of state and non-state actors that are targeting the U.S. critical infrastructure for the purpose of creating chaos that will subsequently produce detrimental effects on citizens, commerce, and government operations. These actors have the ability to compromise, steal, change, or completely destroy information through their detrimental activities on the internet. 17 In January 2008, US Central Intelligence Agency senior analyst Tom Donahue told a gathering of three hundred international security managers from electric, water, oil & gas, and other critical industry, that data was available from multiple regions outside the United States, which documents cyber intrusions into utilities. In at least one case (outside the U.S.), the disruption caused a power outage affecting multiple cities. Mr. Donahue did not specify who executed these attacks or why, but did state that all the intrusions were conducted via the Internet. 18 During the past twenty years, advances in computer technologies have permeated and advanced all aspects of our lives. Although the digital infrastructure is being increasingly merged with the power grid to make it more efficient and reliable, it also makes it more vulnerable to cyber attack. In October 2006, a foreign hacker invaded the Harrisburg, PA., water filtration system and planted malware. 19 In June 2008, the Hatch nuclear power plant in Georgia shut down for two days after an engineer loaded a software update for a business network that also rebooted the plant's power control system. In April 2009, The Wall Street Journal reported that cyber spies had infiltrated the U.S. electric grid and left behind software that could be used to disrupt the system. The hackers came from China, Russia and other nations and were on a “fishing expedition” to map out the system. 20 According to the secretary of Homeland Security, Janet Napolitano at an event on 28 October 2011, cyber–attacks have come close to compromising the country’s critical infrastructure on multiple occasions. 21 Furthermore, during FY11, the United States Computer Emergency Readiness Team took action on more than one hundred thousand incident reports by releasing more than five thousand actionable cyber security alerts and information products. 22 The interdependence of modern infrastructures and digital based systems makes any cyber attacks on the U.S. electric grid potentially significant. The December 2008 report by the Commission on Cyber Security for the forty fourth Presidency states the challenge plainly: “America’s failure to protect cyberspace is one of the most urgent national security problems facing the new administration”. 23 The susceptibility of the grid to being compromised has resulted in a significant amount of resources being allocated to ensuring the systems security. Although a substantial amount of resources are dedicated to protecting the nation’s infrastructure, it may not be enough to ensure the continuous flow of electricity to our critical military facilities. SMRs as they are currently envisioned may be able to provide a secure and independent alternative source of electricity in the event that the public grid is compromised. SMRs may also provide additional DoD benefit by supporting the recent government initiatives related to energy consumption and by circumventing the adverse ramifications associated with building coal or natural gas fired power plants on the environment.

**SMR’s solve --- they address weaknesses which otherwise leads to nuclear retaliation.**

**Andres 11** (\*Richard B. – Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University, \*\*Hanna L. Breetz – Doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, *Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications*, Strategic Forum, National Defense University, Institute for National Strategic Studies, February 2011, http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

Small reactors and energy Security The DOD interest in small reactors derives largely from problems with base and logistics vulnerability. Over the last few years, the Services have begun to reexamine virtually every aspect of how they generate and use en- ergy with an eye toward cutting costs, decreasing carbon emissions, and reducing energy-related vulnerabilities. These actions have resulted in programs that have signif- icantly reduced DOD energy consumption and green- house gas emissions at domestic bases. Despite strong efforts, however, two critical security issues have thus far proven resistant to existing solutions: bases’ vulnerability to civilian power outages, and the need to transport large quantities of fuel via convoys through hostile territory to forward locations. Each of these is explored below. Grid Vulnerability. DOD is unable to provide its bases with electricity when the civilian electrical grid is offline for an extended period of time. Currently, domestic military installations receive **99 percent** of their electricity from the civilian power grid. As explained in a recent study from the Defense Science Board: DOD’s key problem with electricity is that critical missions, such as national strategic awareness and national command authorities, are almost entirely dependent on the national transmission grid . . . [which] is fragile, vulnerable, near its capacity limit, and outside of DOD control. In most cases, neither the grid nor on-base backup power provides sufficient reliability to ensure continuity of critical national priority functions and oversight of strategic missions in the face of a long term (several months) outage.7 The grid’s fragility was demonstrated during the 2003 Northeast blackout in which 50 million people in the United States and Canada lost power, some for up to a week, when one Ohio utility failed to properly trim trees. The blackout created cascading disruptions in sewage systems, gas station pumping, cellular communications, border check systems, and so forth, and demonstrated the interdependence of modern infrastructural systems.8 More recently, awareness has been growing that the grid is also vulnerable to purposive attacks. A re- port sponsored by the Department of Homeland Secu- rity suggests that a coordinated cyber attack on the grid could result in a third of the country losing power for a period of weeks or months.9 Cyberattacks on critical infrastructure are not well understood. It is not clear, for instance, whether existing **terrorist groups** might be able to develop the capability to conduct this type of attack. It is likely, however, that some **nation-states** either have or are working on developing the ability to take down the U.S. grid. In the event of a war with one of these states, it is possible, if not likely, that parts of the civilian grid would cease to function, taking with them military bases located in affected regions. Government and private organizations are currently working to secure the grid against attacks; however, it is not clear that they will be successful. Most military bases currently have backup power that allows them to func- tion for a period of hours or, at most, a few days on their own. If power were not restored after this amount of time, the results could be disastrous. First, military assets taken offline by the crisis would not be available to help with disaster relief. Second, during an extended blackout, global military operations could be seriously compromised; this disruption would be particularly serious if the blackout was induced during major combat operations. During the Cold War, this type of event was far less likely because the United States and Soviet Union shared the common understanding that blinding an opponent with a grid black- out could **escalate to nuclear war**. America’s current opponents, however, may not share this fear or be deterred by this possibility. In 2008, the Defense Science Board stressed that DOD should mitigate the electrical grid’s vulnerabilities by turning military installations into “islands” of energy self-sufficiency.10 The department has made ef- forts to do so by promoting efficiency programs that lower power consumption on bases and by constructing renewable power generation facilities on selected bases. Unfortunately, these programs will not come close to reaching the goal of islanding the vast majority of bases. Even with massive investment in efficiency and renew- ables, most bases would not be able to function for more than a few days after the civilian grid went offline. Unlike other alternative sources of energy, small reactors have the potential to **solve** DOD’s vulnerability to grid outages. Most bases have relatively light power de- mands when compared to civilian towns or cities. Small reactors could easily support bases’ power demands separate from the civilian grid during crises. In some cases, the reactors could be designed to produce enough power not only to supply the base, but also to provide critical services in surrounding towns during long-term outages. Strategically, islanding bases with small reactors has another benefit. One of the main reasons an enemy might be willing to risk reprisals by taking down the U.S. grid during a period of military hostilities would be to affect ongoing military operations. Without the lifeline of intelligence, communication, and logistics provided by U.S. domestic bases, American military operations would be compromised in almost any conceivable contingency. Making bases more resilient to civilian power outages would **reduce the incentive** for an opponent to attack the grid. An opponent might still attempt to take down the grid for the sake of disrupting civilian systems, but the powerful incentive to do so in order to win an ongoing battle or war would be greatly reduced.

**That causes nuclear world war three.**

**Lawson 9** (Sean, Assistant professor in the Department of Communication at the University of Utah, *Cross-Domain Response to Cyber Attacks and the Threat of Conflict Escalation*, May 13th 2009, http://www.seanlawson.net/?p=477)

Introduction At a time when it seems impossible to avoid the seemingly growing hysteria over the threat of cyber war,[1] network security expert Marcus Ranum delivered a refreshing talk recently, “The Problem with Cyber War,” that took a critical look at a number of the assumptions underlying contemporary cybersecurity discourse in the United States. He addressed one issue in partiuclar that I would like to riff on here, the issue of conflict escalation–i.e. the possibility that offensive use of cyber attacks could escalate to the use of physical force. As I will show, his concerns are entirely legitimate as current U.S. military cyber doctrine assumes the possibility of what I call “**cross-domain responses**” to cyberattacks. Backing Your Adversary (Mentally) into a Corner Based on the premise that completely blinding a potential adversary is a good indicator to that adversary that an attack is iminent, Ranum has argued that “The best thing that you could possibly do if you want to start **World War III** is launch a cyber attack. [...] When people talk about cyber war like it’s a practical thing, what they’re really doing is messing with the OK button for starting World War III. We need to get them to sit the f-k down and shut the f-k up.” [2] He is making a point similar to one that I have made in the past: Taking away an adversary’s ability to make rational decisions could backfire. [3] For example, Gregory Witol cautions that “attacking the decision makerÃ¢â‚¬â„¢s ability to perform rational calculations may cause more problems than it hopes to resolveÃ¢â‚¬Â¦ Removing the capacity for rational action may result in completely unforeseen consequences, including longer and bloodier battles than may otherwise have been.” [4] Ã¯Â»Â¿Cross-Domain Response So, from a theoretical standpoint, I think his concerns are well founded. But the current state of U.S. policy may be cause for even greater concern. It’s not just worrisome that a hypothetical blinding attack via cyberspace could send a signal of imminent attack and therefore trigger an irrational response from the adversary. What is also cause for concern is that current U.S. policy indicates that “kinetic attacks” (i.e. physical use of force) are seen as potentially legitimate responses to cyber attacks. Most worrisome is that current U.S. policy implies that a **nuclear response** is possible, something that policy makers have not denied in recent press reports. The reason, in part, is that the U.S. defense community has increasingly come to see cyberspace as a “domain of warfare” equivalent to air, land, sea, and space. The definition of cyberspace as its own domain of warfare helps in its own right to blur the online/offline, physical-space/cyberspace boundary. But thinking logically about the potential consequences of this framing leads to some disconcerting conclusions. If cyberspace is a domain of warfare, then it becomes possible to define “cyber attacks” (whatever those may be said to entail) as acts of war. But what happens if the U.S. is attacked in any of the other domains? It retaliates. But it usually does not respond only within the domain in which it was attacked. Rather, responses are typically “cross-domain responses”–i.e. a massive bombing on U.S. soil or vital U.S. interests abroad (e.g. think 9/11 or Pearl Harbor) might lead to air strikes against the attacker. Even more likely given a U.S. military “way of warfare” that emphasizes multidimensional, “joint” operations is a massive conventional (i.e. non-nuclear) response against the attacker in all domains (air, land, sea, space), simultaneously. The possibility of “kinetic action” in response to cyber attack, or as part of offensive U.S. cyber operations, is part of the current (2006) National Military Strategy for Cyberspace Operations [5]: Of course, the possibility that a cyber attack on the U.S. could lead to a U.S. nuclear reply constitutes possibly the ultimate in “cross-domain response.” And while this may seem far fetched, it has not been ruled out by U.S. defense policy makers and is, in fact, implied in current U.S. **defense policy documents**. From the National Military Strategy of the United States (2004): “The term WMD/E relates to a broad range of adversary capabilities that pose potentially devastating impacts. WMD/E includes chemical, biological, radiological, nuclear, and enhanced high explosive weapons as well as other, more asymmetrical ‘weapons’. They may rely more on disruptive impact than destructive kinetic effects. For example, cyber attacks on US commercial information systems or attacks against transportation networks may have a greater economic or psychological effect than a relatively small release of a lethal agent.” [6] The authors of a 2009 National Academies of Science report on cyberwarfare respond to this by saying, “Coupled with the declaratory policy on nuclear weapons described earlier, this statement implies that the United States will regard certain kinds of cyberattacks against the United States as being in the same category as nuclear, biological, and chemical weapons, and thus that a nuclear response to certain kinds of cyberattacks (namely, cyberattacks with devastating impacts) may be possible. It also sets a relevant scale–a cyberattack that has an impact larger than that associated with a relatively small release of a lethal agent is regarded with the same or greater seriousness.” [7] Asked by the New York Times to comment on this, U.S. defense officials would not deny that nuclear retaliation remains an option for response to a massive cyberattack: “Pentagon and military officials confirmed that the United States reserved the option to respond in any way it chooses to punish an adversary responsible for a catastrophic cyberattack. While the options could include the use of nuclear weapons, officials said, such an extreme counterattack was hardly the most likely response.” [8] The rationale for this policy: “Thus, the United States never declared that it would be bound to respond to a Soviet and Warsaw Pact conventional invasion with only American and NATO conventional forces. The fear of escalating to a nuclear conflict was viewed as a pillar of stability and is credited with helping deter the larger Soviet-led conventional force throughout the cold war. Introducing the possibility of a nuclear response to a catastrophic cyberattack would be expected to serve the same purpose.” [9] Non-unique, Dangerous, and In-credible? There are a couple of interesting things to note in response. First is the development of a new acronym, WMD/E (weapons of mass destruction or effect). Again, this acronym indicates a weakening of the requirement of physical impacts. In this new definition, mass effects that are not necessarily physical, nor necessarily destructive, but possibly only disruptive economically or even psychologically (think “shock and awe”) are seen as equivalent to WMD. This new emphasis on effects, disruption, and psychology reflects both contemporary, but also long-held beliefs within the U.S. defense community. It reflects current thinking in U.S. military theory, in which it is said that U.S. forces should be able to “mass fires” and “mass effects” without having to physically “mass forces.” There is a sliding scale in which the physical (often referred to as the “kinetic”) gradually retreats–i.e. massed forces are most physical; massed fire is less physical (for the U.S. anyway); and massed effects are the least physical, having as the ultimate goal Sun Tzu’s “pinnacle of excellence,” winning without fighting. But the emphasis on disruption and psychology in WMD/E has also been a key component of much of 20th century military thought in the West. Industrial theories of warfare in the early 20th century posited that industrial societies were increasingly interdependent and reliant upon mass production, transportation, and consumption of material goods. Both industrial societies and the material links that held them together, as well as industrial people and their own internal linkages (i.e. nerves), were seen as increasingly fragile and prone to disruption via attack with the latest industrial weapons: airplanes and tanks. Once interdependent and fragile industrial societies were hopelessly disrupted via attack by the very weapons they themselves created, the nerves of modern, industrial men and women would be shattered, leading to moral and mental defeat and a loss of will to fight. Current thinking about the possible dangers of cyber attack upon the U.S. are based on the same basic premises: technologically dependent and therefore fragile societies populated by masses of people sensitive to any disruption in expected standards of living are easy targets. Ultimately, however, a number of researchers have pointed out the pseudo-psychological, pseudo-sociological, and a-historical (not to mention non-unique) nature of these assumptions. [10] Others have pointed out that these assumptions did not turn out to be true during WWII strategic bombing campaigns, that modern, industrial societies and populations were far more resilient than military theorists had assumed. [11] Finally, even some military theorists have questioned the assumptions behind cyber war, especially when assumptions about our own technology dependence-induced societal fragility (dubious on their own) are applied to other societies, especially non-Western societies (even more dubious). [12] Finally, where deterrence is concerned, it is important to remember that a deterrent has to be credible to be effective. True, the U.S. retained nuclear weapons as a deterrent during the Cold War. But, from the 1950s through the 1980s, there was increasing doubt among U.S. planners regarding the credibility of U.S. nuclear deterrence via the threat of “massive retaliation.” As early as the 1950s it was becoming clear that the U.S. would be reluctant at best to actually follow through on its threat of massive retaliation. Unfortunately, most money during that period had gone into building up the nuclear arsenal; conventional weapons had been marginalized. Thus, the U.S. had built a force it was likely never to use. So, the 1960s, 1970s, and 1980s saw the development of concepts like “flexible response” and more emphasis on building up conventional forces. This was the big story of the 1980s and the “Reagan build-up” (not “Star Wars”). Realizing that, after a decade of distraction in Vietnam, it was back in a position vis-a-viz the Soviets in Europe in which it would have to rely on nuclear weapons to offset its own weakness in conventional forces, a position that could lead only to blackmail or holocaust, the U.S. moved to create stronger conventional forces. [13] Thus, the question where cyber war is concerned: If it was in-credible that the U.S. would actually follow through with massive retaliation after a Soviet attack on the U.S. or Western Europe, is it really credible to say that the U.S. would respond with nuclear weapons to a cyber attack, no matter how disruptive or destructive? Beyond credibility, deterrence makes many other assumptions that are problematic in the cyber war context. It assumes an adversary capable of being deterred. Can most of those who would perpetrate a cyber attack be deterred? Will al-Qa’ida be deterred? How about a band of nationalistic or even just thrill-seeker, bandwagon hackers for hire? Second, it assumes clear lines of **command and control**. Sure, some hacker groups might be funded and assisted to a great degree by states. But ultimately, even cyber war theorists will admit that it is doubtful that states have complete control over their armies of hacker mercenaries. How will deterrence play out in this kind of scenario?

**And attacks collapse military war fighting capability.**

**Loudermilk 11** (Micah, Research Associate for the Energy & Environmental Security Policy program with the Institute for National Strategic Studies at National Defense University*, Small Nuclear Reactors: Enabling Energy Security for Warfighters*, Small Wars Journal, March 27th 2011, http://smallwarsjournal.com/blog/small-nuclear-reactors-enabling-energy-security-for-warfighters)

Last month, the Institute for National Strategic Studies at National Defense University released a report entitled Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications. Authored by Dr. Richard Andres of the National War College and Hanna Breetz from Harvard University, the paper analyzes the potential for the Department of Defense to incorporate small reactor technology on its domestic military bases and in forward operating locations. According to Andres and Breetz, the reactors have the ability to solve two critical vulnerabilities in the military's mission: the dependence of domestic bases on the civilian electrical grid and the challenge of supplying ample fuel to troops in the field. Though considerable obstacles would accompany such a move -- which the authors openly admit -- the benefits are significant enough to make the idea merit serious consideration. At its heart, a discussion about military uses of small nuclear reactors is really a conversation about securing the nation's war fighting capabilities. Although the point that energy security **is** national security has become almost redundant -- quoted endlessly in government reports, think tank papers, and the like -- it is repeated for good reason. Especially on the domestic front, the need for energy security on military bases is often overlooked. There is no hostile territory in the United States, no need for fuel convoys to constantly supply bases with fuel, and no enemy combatants. However, while bases and energy supplies are not directly vulnerable, the civilian electrical grid on which they depend for 99% of their energy use is -- and that makes domestic installations highly insecure. The U.S. grid, though a technological marvel, is extremely old, brittle, and susceptible to a wide variety of problems that can result in power outages -- the 2003 blackout throughout the Northeast United States is a prime example of this. In the past, these issues were largely limited to accidents including natural disasters or malfunctions, however today, intentional threats such as cyber attacks represent a very real and growing threat to the grid. Advances in U.S. military technology have further increased the risk that a grid blackout poses to the nation's military assets. As pointed out by the Defense Science Board, **critical missions** including national strategic awareness and national command authorities depend on the national transmission grid. Additionally, capabilities vital to troops in the field -- including drones and satellite intelligence/reconnaissance -- are lodged at bases within the United States and their loss due to a blackout would **impair the ability** of troops to operate in forward operating areas. Recognition of these facts led the Defense Science Board to recommend "islanding" U.S. military installations to mitigate the electrical grid's vulnerabilities. Although DOD has undertaken a wide array of energy efficiency programs and sought to construct renewable energy facilities on bases, these endeavors will fall far short of the desired goals and still leave bases unable to function in the event of long-term outages. As the NDU report argues though, small nuclear reactors have the potential to alleviate domestic base grid vulnerabilities. With a capacity of anywhere between 25 and 300 megawatts, small reactors possess sufficient generation capabilities to power any military installation, and most likely some critical services in the areas surrounding bases, should a blackout occur. Moreover, making bases resilient to civilian power outages would reduce the incentive for an opponent to disrupt the grid in the event of a conflict as military capabilities would be unaffected. Military bases are also secure locations, reducing the associated fears that would surely arise from the distribution of reactors across the country. Furthermore, small nuclear reactors, by design, are significantly safer than prior generations of reactors due to passive safety features, simplified designs, sealed reactor cores, and lower operational requirements.

**Conventional wars are inevitable --- ineffectiveness leads to major power aggression and violent competition.**

**Horowitz 9** (Michael C. Horowitz and Dan A. Shalmon, Professor of Political Science @ University of Pennsylvania & Senior Analyst @ Lincoln Group, LLC. *The Future of War and American Military Strategy*, Orbis, Spring 2009)

It is important to recognize at the outset two key points about United States strategy and the potential costs and benefits for the United States in a changing security environment. First, the United States is very likely to remain fully engaged in global affairs. Advocates of restraint or global withdrawal, while popular in some segments of academia, remain on the **margins** of policy debates in Washington D.C. This could always change, of course. However, at present, **it is a given** that the United States will define its interests globally and pursue a strategy that requires capable military forces able to project power around the world. Because ‘‘indirect’’ counter-strategies are the rational choice for actors facing a strong state’s power projection, irregular/asymmetric threats are inevitable given America’s role in the global order.24 Second, the **worst-case scenario** is a loss of U.S. conventional superiority. Losing military control of the sea and the air, ‘‘the global commons,’’25 would render American global strategy **outmoded in an instant**. The idea that the United States must improve its capacity to fight counterinsurgency operations presumes a need to do so beyond defending the homeland and that the United States will have the capacity to intervene in future conflicts around the world. However, while it seems unlikely at present, what if developments in warfare cut down and then eliminated the conventional military superiority of the United States? The loss of conventional military superiority by the United States would probably make the current strategic environment **look like a picnic**.26 For example, currently a Marine unit deploying to Afghanistan or Iraq focuses most on the post-deployment battlefield tasks. However, imagine a world where commanders and soldiers, like their World War II forbears, must fear being sunk on a transport ship or shot out of the sky on the way over, or being targeted by electronic, nanotechnological, or directed energy or precision guided munitions when preparing to search a village for insurgents.27 In such a strategic environment, overseas deployments to win hearts and minds in a low intensity war or wipe out radical jihadi groups would likely—and logically— take a backseat to more ‘‘traditional’’ concerns: convoys, tank battles, air and coastal defenses, and crash programs to build a new generation of naval and air weapons to take back the seas and skies. Meanwhile, in the interim, the United States homeland would be more at risk than at any point since the World War II—arguably more threatened than in its entire history. What John Mearsheimer has called the ‘‘stopping power of water’’ previously functioned to shield the United States, with its oceanic buffers to the east and west, from existential threats. However, in the information age and if the United States no longer controls the waterways of the world, water may not be enough. A world without American conventional military superiority would also **encourage aggression** by regional actors eager to settle scores and take advantage of the fact that the United States could no longer destroy their military forces at a low cost, to say nothing of the global dangers inherent in the **competition among major powers** that could result. The latter scenario is the worst case and it bears mentioning only because it should inform the framework in which any debate about defense strategy occurs. Pg. 307-308

**That competition goes nuclear.**

**Kagan 7** (Frederick Kagan and Michael O’Hanlon 7, Fred’s a resident scholar at AEI, Michael is a senior fellow in foreign policy at Brookings, “The Case for Larger Ground Forces”, April, <http://www.aei.org/files/2007/04/24/20070424_Kagan20070424.pdf>)

We live at a time when wars not only rage in nearly **every region** but threaten to erupt in many places where the current relative calm is tenuous. To view this as a strategic military challenge for the United States is not to espouse a specific theory of America’s role in the world or a certain political philosophy. Such an assessment flows directly from the basic bipartisan view of American foreign policy makers since World War II that overseas threats must be countered before they can directly threaten this country’s shores, that the basic stability of the international system is essential to American peace and prosperity, and that no country besides the United States is in a position to lead the way in countering major challenges to the global order. Let us highlight the threats and their consequences with a few concrete examples, emphasizing those that involve key strategic regions of the world such as the Persian **Gulf** and **East Asia**, or key potential threats to American security, such as the spread of nuclear weapons and the strengthening of the global **Al Qaeda**/jihadist movement. The Iranian government has rejected a series of international demands to halt its efforts at enriching uranium and submit to international inspections. What will happen if the US—or Israeli—government becomes convinced that Tehran is on the verge of fielding a nuclear weapon? **North Korea**, of course, has already done so, and the ripple effects are beginning to spread. **Japan**’s recent election to supreme power of a leader who has promised to rewrite that country’s constitution to support increased armed forces—and, possibly, even nuclear weapons— may well alter the delicate balance of fear in Northeast Asia fundamentally and rapidly. Also, in the background, at least for now, **Sino Taiwanese** tensions continue to flare, as do tensions between **India and Pakistan**, **Pakistan and Afghanistan**, **Venezuela** and the United States, and so on. Meanwhile, the world’s nonintervention in Darfur troubles consciences from Europe to America’s Bible Belt to its bastions of liberalism, yet with no serious international forces on offer, the bloodletting will probably, tragically, continue unabated. And as bad as things are in Iraq today, they could get worse. What would happen if the key Shiite figure, Ali al Sistani, were to die? If another major attack on the scale of the Golden Mosque bombing hit either side (or, perhaps, both sides at the same time)? Such deterioration might convince many Americans that the war there truly was lost—but the costs of reaching such a conclusion would be enormous. Afghanistan is somewhat more stable for the moment, although a major Taliban offensive appears to be in the offing. Sound US grand strategy must proceed from the recognition that, over the next few years and decades, the world is going to be a very unsettled and quite dangerous place, with Al Qaeda and its associated groups as a subset of a much larger set of worries. The only serious response to this international environment is to develop armed forces capable of protecting America’s vital interests throughout this dangerous time. Doing so requires a military capable of a wide range of missions—including not only deterrence of great power conflict in dealing with potential hotspots in Korea, the Taiwan Strait, and the Persian Gulf but also associated with a variety of Special Forces activities and stabilization operations. For today’s US military, which already excels at high technology and is increasingly focused on re-learning the lost art of counterinsurgency, this is first and foremost a question of finding the resources to field a large-enough standing Army and Marine Corps to handle personnel intensive missions such as the ones now under way in Iraq and Afghanistan. Let us hope there will be no such large-scale missions for a while. But preparing for the possibility, while doing whatever we can at this late hour to relieve the pressure on our soldiers and Marines in ongoing operations, is prudent. At worst, the only potential downside to a major program to strengthen the military is the possibility of spending a bit too much money. Recent history shows no link between having a larger military and its overuse; indeed, Ronald Reagan’s time in office was characterized by higher defense budgets and yet much less use of the military, an outcome for which we can hope in the coming years, but hardly guarantee. While the authors disagree between ourselves about proper increases in the size and cost of the military (with O’Hanlon preferring to hold defense to roughly 4 percent of GDP and seeing ground forces increase by a total of perhaps 100,000, and Kagan willing to devote at least 5 percent of GDP to defense as in the Reagan years and increase the Army by at least 250,000), we agree on the need to start expanding ground force capabilities by at least 25,000 a year immediately. Such a measure is not only prudent, it is also badly overdue.

**Decline causes great power war, collapses trade, and spreads economic nationalism.**

Zhang & Shi 11 – Yuhan Zhang, researcher at the Carnegie Endowment for International Peace; Lin Shi, Columbia University, independent consultant for the Eurasia Group and consultant for the World Bank, January 22, 2011, “America’s decline: A harbinger of conflict and rivalry,” East Asia Forum, online: http://www.eastasiaforum.org/2011/01/22/americas-decline-a-harbinger-of-conflict-and-rivalry/

Over the past two decades, no other state has had the ability to seriously challenge the US military. Under these circumstances, motivated by both opportunity and fear, **many actors have bandwagoned with US hegemony** and accepted a subordinate role. Canada, most of Western Europe, India, Japan, South Korea, Australia, Singapore and the Philippines have all joined the US, **creating a status quo** that has tended **to** mute great power conflicts. ¶ However, **as the hegemony that drew these powers together withers**, **so will the pulling power behind the US alliance**. **The result will be an international order where** power is more diffuse, American interests and influence can be more readily challenged, and conflicts or wars may be harder to avoid.¶ As **history attests,** power decline and redistribution result in military confrontation. For example, in the late 19th century America’s emergence as a regional power saw it launch its first overseas war of conquest towards Spain. By the turn of the 20th century, accompanying the increase in US power and waning of British power, the American Navy had begun to challenge the notion that Britain ‘rules the waves.’ Such a notion would eventually see the US attain the status of sole guardians of the Western Hemisphere’s security to become the order-creating Leviathan shaping the international system with democracy and rule of law.¶ **Defining this US-centred system are** three key characteristics: enforcement of **property rights, constraints on the actions of powerful individuals** and groups **and** some degree of **equal opportunities for broad segments of society**. As a result of such political stability, free markets, liberal trade and flexible financial mechanisms **have appeared**. And, **with this**, **many countries have sought opportunities to enter this system**, proliferating stable and cooperative relations.¶ However, **what will happen to these advances as America’s influence declines?** Given that America’s authority, although sullied at times, has benefited people across much of Latin America, Central and Eastern Europe, the Balkans, as well as parts of Africa and, quite extensively, Asia, the answer to **this** question **could** affect global society in a profoundly detrimental way.¶ Public imagination and academia have anticipated that **a post-hegemonic world would return to** the problems of the 1930s: regional blocs, trade conflicts and strategic rivalry. Furthermore, **multilateral institutions** such as the IMF, the World Bank or the WTO **might give way to regional organisations**.¶ For example, Europe and East Asia would each step forward to fill the vacuum left by Washington’s withering leadership to pursue their own visions of regional political and economic orders. **Free markets would become** more politicised — and, well, **less free** — and major powers would compete for supremacy.¶ Additionally, such **power plays have historically possessed a** zero-sum element. In the late 1960s and 1970s, US economic power declined relative to the rise of the Japanese and Western European economies, with the US dollar also becoming less attractive. And, as American power eroded, so did international regimes (such as the Bretton Woods System in 1973).¶ **A world without American hegemony is one where** great power wars re-emerge, **the** **liberal international system is supplanted by an authoritarian one**, **and** trade protectionism devolves into restrictive, anti-globalisation barriers. This, at least, is one possibility we can forecast in a future that will inevitably be devoid of unrivalled US primacy.

**The best statistical studies prove the relationship between hegemony and peace.**

Owen 11 John M. Owen Professor of Politics at University of Virginia PhD from Harvard "DON’T DISCOUNT HEGEMONY" Feb 11 www.cato-unbound.org/2011/02/11/john-owen/dont-discount-hegemony/

**Andrew Mack and his colleagues at the Human Security Report Project are to be congratulated. Not only do they present a study with a striking conclusion, driven by data, free of theoretical or ideological bias, but they also do something quite unfashionable: they bear good news. Social scientists really are not supposed to do that. Our job is, if not to be Malthusians, then at least to point out disturbing trends, looming catastrophes, and the imbecility and mendacity of policy makers. And then it is to say why, if people listen to us, things will get better. We do this as if our careers depended upon it, and perhaps they do; for if all is going to be well, what need then for us?¶ Our colleagues at Simon Fraser University are brave indeed. That may sound like a setup, but it is not. I shall challenge neither the data nor the general conclusion that violent conflict around the world has been decreasing in fits and starts since the Second World War. When it comes to violent conflict among and within countries,** things have been getting better**. (The trends have not been linear—Figure 1.1 actually shows that the frequency of interstate wars peaked in the 1980s—but the 65-year movement is clear.) Instead I shall accept that Mack et al. are correct on the macro-trends, and focus on their explanations they advance for these remarkable trends. With apologies to any readers of this forum who recoil from academic debates, this might get mildly theoretical and even more mildly methodological.¶ Concerning international wars, one version of the “nuclear-peace” theory is not in fact laid to rest by the data. It is certainly true that nuclear-armed states have been involved in many wars. They have even been attacked (think of Israel), which falsifies the simple claim of “assured destruction”—that any nuclear country A will deter any kind of attack by any country B because B fears a retaliatory nuclear strike from A.¶ But the most important “nuclear-peace” claim has been about mutually assured destruction, which obtains between two robustly nuclear-armed states. The claim is that (1) rational states having second-strike capabilities—enough deliverable nuclear weaponry to survive a nuclear first strike by an enemy—will have an overwhelming incentive not to attack one another; and (2) we can safely assume that nuclear-armed states are rational. It follows that states with a second-strike capability will not fight one another.¶ Their colossal atomic arsenals neither kept the United States at peace with North Vietnam during the Cold War nor the Soviet Union at peace with Afghanistan. But the argument remains strong that those arsenals did help keep the United States and Soviet Union at peace with each other. Why non-nuclear states are not deterred from fighting nuclear states is an important and open question. But in a time when calls to ban the Bomb are being heard from more and more quarters, we must be clear about precisely what the broad trends toward peace can and cannot tell us. They may tell us nothing about why we have had no World War III, and little about the wisdom of banning the Bomb now.¶ Regarding the** downward trend in international war**, Professor Mack is friendlier to more palatable theories such as the “**democratic peace**” (democracies do not fight one another, and the proportion of democracies has increased, hence less war); the interdependence or “**commercial peace**” (states with extensive economic ties find it irrational to fight one another, and interdependence has increased, hence less war); and the notion that people around the world are more anti-war than their forebears were. Concerning the downward trend in civil wars, he favors theories of economic growth (where commerce is enriching enough people, violence is less appealing—a logic similar to that of the “commercial peace” thesis that applies among nations) and the end of the Cold War (which end reduced superpower support for rival rebel factions in so many Third-World countries).¶ These are all** plausible mechanisms for peace**. What is more, none of them excludes any other; all could be working toward the same end. That would be somewhat puzzling, however. Is the world just lucky these days? How is it that an array of peace-inducing factors happens to be working coincidentally in our time, when such a magical array was absent in the past? The answer may be that one or more of these mechanisms reinforces some of the others, or perhaps some of them are mutually reinforcing. Some scholars, for example, have been focusing on whether economic growth might support democracy and vice versa, and whether both might support international cooperation, including to end civil wars.¶ We would still need to explain how this charmed circle of causes got started, however. And here let me raise another factor, perhaps even less appealing than the “nuclear peace” thesis, at least outside of the United States. That factor is what international relations scholars call hegemony—specifically** American hegemony**.¶ A theory that many regard as discredited, but that refuses to go away, is called hegemonic stability theory. The theory emerged in the 1970s in the realm of international political economy. It asserts that** for the global economy to remain open**—for countries to keep barriers to trade and investment low—**one powerful country must take the lead**. Depending on the theorist we consult, “taking the lead” entails paying for global public goods (keeping the sea lanes open, providing liquidity to the international economy), coercion (threatening to raise trade barriers or withdraw military protection from countries that cheat on the rules), or both. The theory is skeptical that international cooperation in economic matters can emerge or endure absent a hegemon. The distastefulness of such claims is self-evident: they imply that it is good for everyone the world over if one country has more wealth and power than others. More precisely, they imply that it has been good for the world that the United States has been so predominant.¶ There is no obvious reason why hegemonic stability theory could not apply to other areas of international cooperation, including in security affairs, human rights, international law, peacekeeping (UN or otherwise), and so on. What I want to suggest here—suggest, not test—is that** American hegemony might just be a deep cause of the steady decline of political deaths in the world**.¶ How could that be? After all, the report states that United States is the third most war-prone country since 1945. Many of the deaths depicted in Figure 10.4 were in wars that involved the United States (the Vietnam War being the leading one). Notwithstanding politicians’ claims to the contrary, a candid look at U.S. foreign policy reveals that the country is as ruthlessly self-interested as any other great power in history.¶ The answer is that U.S. hegemony might just be a** deeper cause of the proximate causes **outlined by Professor Mack. Consider economic growth and openness to foreign trade and investment, which (so say some theories)** render violence irrational**. American power and policies may be responsible for these in two related ways. First, at least since the 1940s Washington has** prodded other countries to embrace the market capitalism **that entails economic openness and produces** sustainable economic growth**. The United States promotes capitalism for selfish reasons, of course: its own domestic system depends upon growth, which in turn depends upon the efficiency gains from economic interaction with foreign countries, and the more the better. During the Cold War most of its allies accepted some degree of market-driven growth.¶ Second, the U.S.-led western victory in the Cold War damaged the credibility of alternative paths to development—communism and import-substituting industrialization being the two leading ones—and** left market capitalism the best model**. The end of the Cold War also involved an end to the billions of rubles in Soviet material support for regimes that tried to make these alternative models work. (It also, as Professor Mack notes,** eliminated the superpowers’ incentives to feed civil violence **in the Third World.) What we call** globalization **is** caused in part by the emergence of the United States as the global hegemon**.¶ The same case can be made, with somewhat more difficulty, concerning the** spread of democracy**. Washington has supported democracy only under certain conditions—the chief one being the absence of a popular anti-American movement in the target state—but those conditions have become much more widespread following the collapse of communism. Thus in the 1980s the Reagan administration—the most anti-communist government America ever had—began to dump America’s old dictator friends, starting in the Philippines. Today Islamists tend to be anti-American, and so the Obama administration is skittish about democracy in Egypt and other authoritarian Muslim countries. But general U.S. material and moral support for liberal democracy remains strong.**

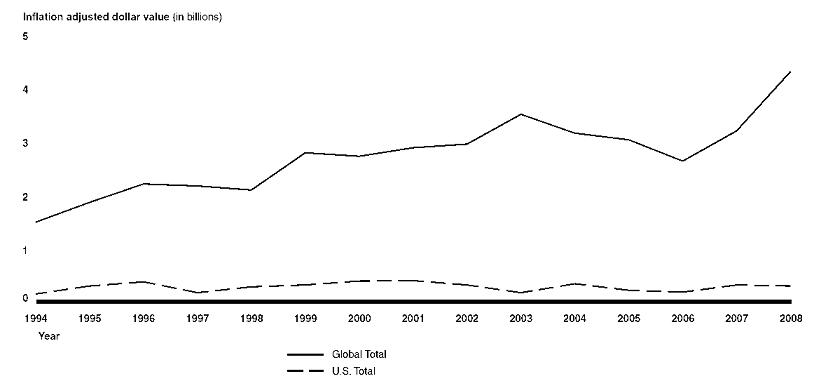
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**US reactor construction is declining and with it the US commercial nuclear trade is collapsing.**

**Cullinane 11** (Scott, Staff Member at the House Foreign Affairs Committee, Graduate Fellow at the Institute of World Politics in Washington DC, *America Falling Behind: The Strategic Dimensions of Chinese Commercial Nuclear Energy*, September 28th, Journal of Energy Security, Accessed Online)

America: dominant no longer History has recorded well American wartime nuclear developments which culminated in the July 1945 Trinity Test, but what happened near Arco, Idaho six years later has been overlooked. In 1951, scientists for the first time produced usable electricity from an experimental nuclear reactor. Once this barrier was conquered the atom was harnessed to generate electricity and permitted America to move into the field of commercial nuclear power. In the next five years alone the United States signed over 20 nuclear cooperation agreements with various countries. Not only did the US build dozens of power plants domestically during the 1960s and 1970s, the US Export-Import Bank also distributed $7.1 billion dollars in loans and guarantees for the international sale of 49 reactors. American built and designed reactors were exported around the world during those years. Even today, more than 60% of the world’s 440 operating reactors are based on technology developed in the United States. The growth of the US civilian nuclear power sector stagnated after the Three Mile Island incident in 1979 – the most serious accident in American civilian nuclear power history. Three Mile Island shook America’s confidence in nuclear power and provided the anti-nuclear lobby ample fuel to oppose the further construction of any nuclear power plants. In the following decade, 42 planned domestic nuclear power plants were cancelled, and in the 30 years since the Three Mile Island incident the American nuclear power industry has survived only through foreign sales and merging operations with companies in Asia and Europe. Westinghouse sold its nuclear division to Toshiba and General Electric joined with Hitachi. Even the highest levels of the American government came to cast nuclear power aside. President Bill Clinton bragged in his 1993 State of the Union Address that “we are eliminating programs that are no longer needed, such as nuclear power research and development.” America’s slow pace of reactor construction over the past three decades has **stymied innovation** and caused the nuclear sector and its industrial base to **shrivel**. While some aspects of America’s nuclear infrastructure still operate effectively, many critical areas have atrophied. For example, one capability that America has entirely lost is the means to cast ultra heavy forgings in the range of 350,000 – 600,000 pounds, which impacts the construction of containment vessels, turbine rotors, and steam generators. In contrast, Japan, China, and Russia all possess an ultra heavy forging capacity and South Korea and India plan to build forges in this range. Likewise, the dominance America enjoyed in uranium enrichment until the 1970s is gone. The current standard centrifuge method for uranium enrichment was not invented in America and today 40% of the enriched uranium US power plants use is processed overseas and imported. Another measure of how much the US nuclear industry has shrunk is evident in the number of companies certified to handle nuclear material. In the 1980s the United States had 400 nuclear suppliers and 900 holders of N-stamp certificates (N-stamps are the international nuclear rating certificates issued by the American Society of Mechanical Engineers). By 2008 that number had reduced itself to 80 suppliers and 200 N-stamp holders. A recent Government Accountability Office report, which **examined data** from between 1994 and 2009, found the US to have a declining share of the global commercial nuclear trade. However, during that same period over 60 reactors were built worldwide. Nuclear power plants are being built in the world increasingly by non-American companies.



A Comparison of Value of US and Global Exports of Nuclear Reactors, Major Components and Equipment, and Minor Reactor Parts, 1994 through 2008, in 2010 US Dollars Source: US Government Accounting Office Report, Nuclear Commerce: Government-wide Strategy Could Help Increase Commercial Benefits from US Nuclear Cooperation Agreements with Other Countries The American nuclear industry entered the 1960s in a strong position, yet over the past 30 years other countries have closed the development gap with America. The implications of this change go beyond economics or prestige to include national security. These changes would be less threatening if friendly allies were the ones moving forward with developing a nuclear export industry; however, the quick advancement of the PRC in nuclear energy changes the strategic calculus for America. The shifting strategic landscape While America’s nuclear industry has languished; current changes in the world’s strategic layout no longer allow America the option of maintaining the status quo without being surpassed. The drive for research, development, and scientific progress that grew out of the Cold War propelled America forward, but those priorities have long since been downgraded by the US government. The economic development of formerly impoverished countries means that the US cannot assume continued dominance by default.

**Trade of commercial nuclear tech is inevitable but expanded US nuclear construction resurrects nonproliferation controls.**

**Bengelsdorf 7** (*Harold* – currently a Principal with the consulting firm of Bengelsdorf, McGoldrick, and Associates, held numerous senior positions in the U.S. government, including the Energy Department and its predecessor agencies, the State Department, and the U.S. Mission to the IAEA. Among his appointments, he served as the director of both key State and Energy Department offices that are concerned with international nuclear and nonproliferation affairs. Throughout his career, Mr. Bengelsdorf contributed significantly to the development and implementation of U.S. international fuel cycle and nonproliferation policies, having participated in several White House and National Security Council studies. He was involved in the negotiation of numerous bilateral and multilateral nuclear and nonproliferation agreements, including the development of full-scope IAEA safeguards (INFCIRC/153) to implement the Nuclear Nonproliferation Treaty (NPT). He retired from government service in 1982, *Fred McGoldrick* – currently a Principal with the consulting firm of Bengelsdorf, McGoldrick, and Associates, has been involved in the field of nuclear nonproliferation and international nuclear cooperation for over 25 years. From 1973 until 1982, he served in the Department of Energy and its predecessor agencies where he played a major part in formulating and implementing U.S. nonproliferation and international nuclear fuel cycle policy. In 1982, Dr. McGoldrick joined the U.S. State Department where he negotiated peaceful nuclear cooperation agreements with China, the European Atomic Energy Agency, Japan, South Africa, Switzerland, Argentina and Brazil. He also played a key role in U.S. policy to prevent the spread of nuclear weapons in countries in South Asia, Latin America, South Africa and the Middle East. He participated in developing and implementing U.S. policy toward the NPT and the fissile material cutoff treaty. Dr. McGoldrick also served as Minister Counselor in the U.S. Mission to the IAEA. He retired from the State Department in 1998, *Michael Schwartz* – a Principal with the Washington, D.C. based consulting firm of Energy Resources International, Inc., which he co- founded in 1989. Mr. Schwartz has provided consulting services to electric utility companies, suppliers, industry associations and governments on an international basis since the mid 1970s. His areas of involvement have included market analyses for all components of the nuclear fuel cycle, including uranium supply, conversion services, uranium enrichment services, fuel fabrication, and spent fuel storage and disposal. In each of these areas, Mr. Schwartz has provided a broad range of assistance to his clients in policy formulation, strategic planning, commercial and economic evaluation, and technical analyses. In the course of these activities he has also performed viability assessments and due diligence reviews of major fuel supply companies. Mr. Schwartz has supported applicants in both federal and state regulatory hearings associated with matters such as the need for new uranium enrichment facilities and at-reactor spent fuel storage, *THE U.S. DOMESTIC CIVIL NUCLEAR INFRASTRUCTURE AND U.S. NONPROLIFERATION POLICY*, White Paper Presented by the American Council on Global Nuclear Competitiveness, May 2007, http://www.nuclearcompetitiveness.org/images/COUNCIL\_WHITE\_PAPER\_Final.pdf)

EXECUTIVE SUMMARY This report examines the issue of whether the current United States (U.S.) civil nuclear infrastructure is sufficiently robust to help the United States maximize its opportunities to achieve its nonproliferation objectives, and if not, what new directions the U.S. Government and industry should take to help rectify the situation. The health of the U.S. civil nuclear infrastructure can have an **important bearing** in a variety of ways on the ability of the United States to advance its nonproliferation objectives. During the Atoms for Peace Program and until the 1970s, the U.S. was the dominant supplier in the international commercial nuclear power market, and it exercised a strong leadership role in shaping the global nonproliferation regime. In those early days, the U.S. also had what was essentially a monopoly in the nuclear fuel supply market. This capability, among others, allowed the U.S. to promote the widespread acceptance of nonproliferation **norms** and **restraints**, including international safeguards and physical protection measures, and, most notably, the Treaty on the Non-Proliferation of Nuclear Weapons (**NPT**). The United States concluded agreements for cooperation in peaceful nuclear energy with other states, which require strict safeguards, physical protection and other nonproliferation controls on their civil nuclear programs. Today due to its political, military and economic position in the world, the United States continues to exercise great weight in nonproliferation matters. However, the ability of the United States to promote its nonproliferation objectives through peaceful nuclear cooperation with other countries has declined. The fact that no new nuclear power plant orders have been placed in over three decades has led to erosion in the capabilities of the U.S. civil nuclear infrastructure. Moreover, during the same period, the U.S. share of the global nuclear market has declined significantly, and several other countries have launched their own nuclear power programs and have become major international suppliers in their own right. It is highly significant that all but one of the U.S. nuclear power plant vendors and nuclear fuel designers and manufactures for light water reactors have now been acquired by their non-U.S. based competitors. Thus, while the U.S. remains a participant in the international market for commercial nuclear power, it **no longer** enjoys a dominant role as it did four decades ago. To the extent that U.S. nuclear plant vendors and nuclear fuel designers 1 and manufacturers are able to reassert themselves on a technical and commercial basis, opportunities for U.S. influence with respect to nuclear nonproliferation can be expected to increase. However, the fact that there are other suppliers that can now provide plants and nuclear fuel technology and services on a competitive commercial basis suggests that the U.S. will have to work especially hard to maintain and, in some cases, rebuild its nuclear infrastructure, if it wishes to exercise its influence in international nuclear affairs. The influence of the United States internationally could be enhanced significantly if the U.S. is able to achieve success in its Nuclear Power 2010 program and place several new orders in the next decade and beyond. There is a clear upsurge of interest in nuclear power in various parts of the world. As a consequence, if the U.S. aspires to participate in these programs and to shape them in ways that are most conducive to nonproliferation, it will need to promote the health and viability of the American nuclear infrastructure. Perhaps more importantly, if it wishes to exert a positive influence in shaping the nonproliferation policies of other countries, it can do so more effectively by being an active supplier to and partner in the evolution of those programs. Concurrent with the prospective growth in the use of nuclear power, the global nonproliferation regime is facing some direct assaults that are unprecedented in nature. International confidence in the effectiveness of nuclear export controls was shaken by the disclosures of the nuclear operations of A.Q. Khan. These developments underscore the importance of maintaining the greatest integrity and effectiveness of the nuclear export conditions applied by the major suppliers. They also underscore the importance of the U.S. maintaining effective policies to achieve these objectives. Constructive U.S. influence will be best achieved to the extent that the U.S. is perceived as a major technological leader, supplier and partner in the field of nuclear technology. As the sole superpower, the U.S. will have considerable, on-going influence on the international nonproliferation regime, regardless of how active and successful it is in the nuclear export market. However, the erosion of the U.S. nuclear infrastructure has begun to weaken the ability of the U.S. to participate actively in the international nuclear market. If the U.S. becomes more dependent on foreign nuclear suppliers or if it leaves the international nuclear market to other suppliers, the ability of the U.S. to influence nonproliferation policy will diminish. It is, therefore, essential that the United States have vibrant nuclear reactor, enrichment services, and spent fuel storage and disposal industries that can not only meet the needs of U.S. utilities but will also enable the United States to promote effective **safeguards** and other **nonproliferation controls** through close peaceful nuclear cooperation with other countries. U.S. nuclear exports can be used to influence other states’ nuclear programs through the nonproliferation commitments that the U.S. requires. The U.S. has so-called consent rights over the enrichment, reprocessing and alteration in form or content of the nuclear materials that it has provided to other countries, as well as to the nuclear materials that are produced from the nuclear materials and equipment that the U.S. has supplied. Further, the ability of the U.S. to develop improved and advanced nuclear technologies will depend on its ability to provide consistent and vigorous support for nuclear R&D programs that will enjoy solid bipartisan political support in order that they can be sustained from one administration to another. As the U.S. Government expends taxpayer funds on the Nuclear Power 2010 program, the Global Nuclear Energy Partnership, the Generation IV initiative and other programs, it should consider the benefit to the U.S. industrial base and to U.S. non-proliferation posture as criteria in project design and source selection where possible. THE BASIC PHILOSOPHIES UNDERPINNING THE GLOBAL NONPROLIFERATION REGIME The global nonproliferation regime had its origins in the 1950s when the United States and several other countries with nuclear capabilities made important decisions to declassify certain aspects of nuclear technology so that they could be shared with other nations solely for peaceful purposes. The U.S. and these other states had a strong awareness that their decisions could produce important benefits in the field of energy, medicine and agriculture. However, they also shared a profound recognition that nuclear materials, equipment and technologies could be misused. Consequently, the United States as well as other states concluded that suppliers should share civil nuclear technology with other countries only if they were able and willing to put into place a rigorous system to ensure that civil uses of nuclear materials, equipment and technologies would not be diverted to the manufacture of nuclear weapons, nuclear explosive devices or other military purposes. In 1953 President Eisenhower proposed the establishment of the Atoms for Peace program to share nuclear technology with other states for peaceful applications. This program also recognized that effective controls had to be placed on peaceful nuclear trade to ensure against its use for military purposes. Following the Atoms for Peace speech, the United States amended its Atomic Energy Act and led the effort to establish the International Atomic Energy Agency (IAEA) and its safeguards system. Beginning in 1955, the U.S. entered into agreements for cooperation with other countries to share in the research and power applications of the atom. The basic philosophy of the Atoms for Peace program rested on two principles. The first was that countries should have a right to enjoy the peaceful benefits of nuclear energy and that governments should encourage and facilitate international commerce in nuclear materials, equipment, and technology in order to promote global economic development and welfare. The second was that states that desired the benefits of peaceful applications of nuclear energy must make effective commitments not to misuse that technology for non-peaceful purposes and to accept adequate verification of those commitments. 7 These same two principles formed the basis of the NPT. Indeed, the NPT strengthened and expanded the nonproliferation side of the equation in two important respects. While the Atoms for Peace program made international cooperation dependent on certain nonproliferation assurances, these assurances were not comprehensive. No renunciation of nuclear weapons or nuclear explosives in general was required as a condition of export, and no commitment to verify the peaceful character of all nuclear activities was required. The NPT, on the other hand, reflected the conviction that to enjoy the benefits of peaceful uses of nuclear energy, a country's commitments must be complete and comprehensive. Hence, Articles II and III of the NPT obligate non-nuclear weapon states party to the Treaty to forgo the manufacture and acquisition of nuclear weapons and nuclear explosives and to accept safeguards on all their peaceful nuclear activities. In return, Article IV of the Treaty reaffirms the right of all parties to develop and use nuclear energy in conformity with their nonproliferation obligations and binds all parties to facilitate the fullest possible exchange of equipment, materials, and scientific and technological information for the peaceful uses of nuclear energy. Article IV also requires that parties in a position to do so cooperate in contributing to the further development of the applications of nuclear energy for peaceful purposes. The years since the initiation of the Atoms for Peace Program have shown the vital connection between the conduct of peaceful international nuclear trade and the fostering of nonproliferation norms and legal commitments. Nuclear trade has enabled some governments -- especially the United States -- to lay the basis for an effective nonproliferation regime. During the 1950s and 1960s, the United States used the influence stemming from its position as a dominant supplier of nuclear technology to forge various elements of today's nonproliferation regime. Indeed there have been two important principles underlying the current approach to nonproliferation. First, there has been a widespread recognition that international nuclear cooperation is unlikely to occur unless it is based on a solid foundation of safeguards, assurances of peaceful use, effective physical protection, and other controls designed to prevent the diversion of civil nuclear programs to explosive purposes. Secondly, an effective nonproliferation regime cannot be based solely on a system of denials, constraints and controls. It must also involve constructive engagement with, and promotion of peaceful nuclear programs in cooperating partner states. 8 Perhaps the main achievement of the Atoms for Peace Program is that states pledged to forego nuclear weapons and to accept international inspections of their nuclear programs in return for receiving technical assistance and other forms of peaceful nuclear cooperation. Acceptance of international inspections was an unprecedented intrusion on national sovereignty and a truly revolutionary development in international politics. Indeed, states would never have been willing to forego the manufacture of nuclear weapons and to accept such infringements on their sovereignty, unless they had sufficient incentives to do so. Non-nuclear-weapon states would never have accepted international safeguards and no-explosive use pledges without receiving the quid pro quo contained in Article IV of the NPT, which affirms the “inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with Articles I and II of this Treaty” ..... and affirms that, “All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy.” Historically, the ability of the U.S. to help prevent the spread of nuclear weapons has stemmed from many factors, not least of which has been the political, military and economic power that the US has exercised in international affairs. The U.S. has used many tools to promote its nonproliferation objectives. One important instrument that the U.S. has employed for decades in building the international nonproliferation system has been its ability to provide nuclear fuel, nuclear power plants and fuel cycle services to countries on a reliable and stable basis, under strict nonproliferation controls and conditions. In the early days of the nuclear era, the U.S. essentially had a monopoly in the nuclear fuel supply market. This capability, among others, allowed the U.S. to promote the widespread acceptance of nonproliferation norms and restraints, including international safeguards and physical protection measures, and, most notably, the NPT. The United States concluded agreements for cooperation in peaceful nuclear energy with other states, which require strict safeguards, physical protection and other nonproliferation controls on their civil nuclear programs. Moreover, the strength of U.S. civil nuclear capabilities gave it an important seat at the international table, not only in negotiating the norms that should 9 govern the conduct of civil nuclear power programs to protect against their misuse or diversion to nuclear weapons, but also in shaping the key elements of the global nonproliferation regime. In addition domestic U.S. nuclear programs have enabled the United States to make important contributions to achieving technical improvements in international safeguards, physical protection, and nuclear detection systems. However, the challenges now confronting the international nonproliferation regime come at a time when the U.S. commercial share of the global nuclear market has declined and when there are serious concerns about the health of the U.S. nuclear infrastructure. 10 3.CHALLENGES FACING THE NONPROLIFERATION REGIME AND POSSIBLE NEW DIRECTIONS Although the nonproliferation regime has been largely effective in limiting the spread of nuclear weapons, many experts and observers believe that the end of the Cold War has accelerated the risks of proliferation and that the current nonproliferation system needs to be strengthened. They have expressed concern that certain countries that possess nuclear weapons, fissile materials or sensitive nuclear technologies that can produce weapons-usable materials might transfer them to other states or to terrorist organizations. The Government of Pakistan has admitted that A.Q. Khan, the former head of the Khan Research Laboratory, has transferred enrichment technology to North Korea, Iran and Libya, as well as nuclear weapons technology to Libya. Some experts also believe that, although the NPT has generally worked well since it went into effect in the 1970s, several “legal loopholes” have become apparent, which have allowed some states to abuse the Treaty by using it as a cover to obtain nuclear material that could subsequently be used to develop nuclear weapons. They believe that Iran and Iraq both joined the NPT in order to reap the rewards promised by Article IV of the Treaty, while seeking to develop covertly a nuclear weapons capability. Under the NPT, a non-nuclear weapons state is free to acquire enrichment and reprocessing plants so long as such states conform to the provisions of Article II not to manufacture or acquire nuclear weapons or nuclear explosive devices and Article III to place all of their peaceful nuclear activities under IAEA safeguards. Many experts fear that, under the NPT, states such as Iran have acquired the technology needed to produce separated plutonium or highly enriched uranium and that, once having acquired these weapons-usable materials, they could withdraw from the Treaty on 90-days notice and develop nuclear weapons without violating the NPT. Thus in recent years attention has largely focused on the risks of proliferation associated with the spread of enrichment and reprocessing facilities and the weapons-usable materials that they produce. This problem has led to a number of proposals to discourage the spread of enrichment and reprocessing capabilities. These have included calls by the Director General of the IAEA, Mohammed El Baradei, urging states to place enrichment and reprocessing facilities under some form of multinational control and 11 proposals to improve international nuclear fuel assurances as an inducement to states to refrain from acquiring and operating enrichment plants. Further, in a speech on February 11, 2004 at the National Defense University, President Bush proposed two new initiatives designed to address this specific problem. Specifically he proposed that (a) the members of the Nuclear Suppliers Group should refuse to sell enrichment and reprocessing equipment and technologies to any state that does not already possess full- scale, functioning enrichment and reprocessing plants and (b) the world's leading nuclear exporters should ensure that states have reliable access at reasonable cost to fuel for civilian reactors in order to discourage the spread of enrichment and reprocessing facilities. Since then, the U.S. had been engaged with other suppliers and the IAEA in discussing the challenges of assuring fuel services to those states that foreswear enrichment and reprocessing. For example, at the 2005 IAEA General Conference the U.S. Secretary of Energy announced that the U.S. intended to establish a strategic reserve based on 17.4 tons of highly enriched uranium (HEU) that would be blended down to help qualified states deal with any disruptions in supply from their nuclear fuel suppliers, provided that these qualified states are fulfilling their nonproliferation obligations. Subsequently, six states, France, Germany, the Netherlands, Russia, the UK and the U.S. made a proposal at the June 2006 IAEA Board of Governors’ Meeting that offers improved fuel assurances in order to discourage countries from building enrichment and reprocessing facilities. In addition, at its meeting in July 2006 the G-8 group of nations issued a statement in support of establishing improved fuel assurances in order to discourage the spread of sensitive nuclear technologies. In particular, it supported the six-nation proposal submitted to the IAEA Board of Governors in June 2006. Lastly in February 2006 the U.S. Department of Energy (DOE) proposed a major new initiative, the Global Nuclear Energy Partnership (GNEP) aimed at the development, demonstration and deployment of advanced separations and burner reactor systems. The initiative has several important features: 12 • The demonstration of new separation techniques for recycling nuclear fuel that would allow the U.S. to close its fuel cycle and to develop somewhat more proliferation-resistant technologies by avoiding the presence of separated plutonium. In this connection, the U.S. nuclear services firm, EnergySolutions has acquired many BNFL employees as well as BNFL’s technologies in modern fuel reprocessing and waste treatment and is seeking to offer an alternative to the MOX fuel cycles without separating pure plutonium. Similarly AREVA- COGEMA, Inc. is also offering the prospect of treatment recycling plants with no separated plutonium. • The advancement of the nuclear waste management program within the United States by coupling these new separation techniques with advanced recycling reactors with the objective of reducing the volume of waste per reactor that would have to be disposed of in Yucca Mountain. The program is specifically intended to remove the need to follow the Yucca Mountain Project with several additional geological repositories. It assumes work will continue that is devoted to completing the Yucca Mountain Project. • The establishment of a new international nuclear fuel assurance regime in order to discourage the spread of enrichment and reprocessing facilities. A major long-term aspect of this objective is a proposal that those supplier states with industrial enrichment and fuel recycling capabilities should work to provide so-called “cradle-to- grave” services to states that agree to refrain from acquiring enrichment and reprocessing facilities. Under this approach the supplier states would lease enriched uranium to consumer nations and would accept the return of the resultant spent fuel for recycling. Under the proposal contained in GNEP, achievement of this goal will take some time since such cradle-to-grave services would be put into place only after the proposed advanced recycling technologies have been proven and have become operational. The pursuit of GNEP is a major policy and technical goal of the Administration of President Bush. However, fulfilling the promise of GNEP is a long-term endeavor that will require commitment across several Administrations. The U.S. ability to fulfill this long-term promise could be aided by a strengthened U.S. civil nuclear infrastructure. In the short-term, 13 the U.S. and world is looking to expand the peaceful use of nuclear energy in the civilian sector. 14 4. THE STATUS OF THE U.S. CIVIL NUCLEAR INFRASTRUCTURE The world has evolved significantly with respect to commercial nuclear power. The U.S. role in these markets has been strongly influenced by a combination of events which have led to the fact that there has not been an order to build a new commercial nuclear power plant in the U.S. in more than 30 years. This has led to a decline in the infrastructure that would be required to build new nuclear power plants or the facilities envisioned under GNEP. Much of what little U.S. nuclear manufacturing infrastructure does still exist is presently devoted to serving the needs of the U.S. Government, including various nonproliferation initiatives and the naval nuclear propulsion program. Large parts of this infrastructure would require modification to enter into the commercial nuclear power market. During a typical eight year period during the 1970s and 1980s there were 30 to 40 or more nuclear power units under construction and receiving operating licenses in the U.S. using almost exclusively U.S. industrial resources. This is in contrast to the conclusions of a recent assessment1 that stated “major equipment (reactor pressure vessels, steam generators and moisture separator reheaters) for the near-term deployment of [new] units would not be manufactured by United States facilities.” The same report found that “reactor pressure vessel (RPV) fabrication could be delayed by the limited availability of the large nuclear-grade forgings that are currently only available from one Japanese supplier (Japan Steel Works, Limited).”2 The report concluded that "the necessary manufacturing, fabrication, labor, and construction equipment infrastructure is available today or can be readily developed to support the construction and commissioning of up to eight nuclear units during the period from 2010 to 2017”. Eight units in an eight year period is a figure that could be used to characterize a possible renaissance of nuclear power in this country and is in sharp contrast to the U.S. industry’s previous ability to support construction of 30 to 40 nuclear plants during an 8 year period. 1 DOE NP2010 Nuclear Power Plant Construction Infrastructure Assessment, MPR-2776, Rev. 0, October 21, 2005, MPR Associates, Inc. under contract to the U.S. Department of Energy. 2 DOE NP 2010 Nuclear Power Plant Construction Infrastructure Assessment, October 21, 2005, MPR-2776, p. 2-2 15 Thus the challenge the U.S. nuclear industry faces today is whether the U.S. civil nuclear infrastructure will be strong enough to support a hoped for nuclear revival in this country, which could entail the construction and commissioning of up to eight nuclear power units during the 2010 to 2017 period. Several studies have been devoted to this question, and the answer is by no means certain. The shortage in skilled labor is expected to double in this country by the year 2020 and the workforce will stop growing as the baby boomers start to retire. In addition, during the last thirty years new nuclear power plants have been ordered and subsequently built in other parts of the world (e.g., France, Japan, the Republic of Korea, Russia, Ukraine, Czech Republic, and India). Many, but by no means the majority, of these plants are based upon nuclear steam supply system (NSSS) designs that had their origins in U.S. technology. Recently after some heated competition, the People’s Republic of China (PRC) announced its decision to purchase four new Westinghouse designed NSSS. However, there have been recent statements to the effect that the PRC may also order units from AREVA (France), which was the other competitor. AREVA is a global full-range provider of nuclear products and services that is owned by the French government. It is also highly significant that all but one of the U.S. NSSS and nuclear fuel designers and manufactures for light water reactors have now been acquired by their non-US based competitors. For example, Exxon Nuclear (Richland, Washington) was acquired by Siemens (Germany); the nuclear services and commercial fuel businesses of the Babcock & Wilcox Company (Lynchburg, Virginia) were acquired by Framatome (AREVA-France); then Siemens and Framatome formed a joint venture that is effectively controlled by AREVA. Combustion Engineering (Windsor, Connecticut) and Westinghouse (Pittsburgh, Pennsylvania and Columbia, South Carolina) were acquired by BNFL (United Kingdom) and most recently by Toshiba (Japan) in partnership with the Shaw Group (Baton Rouge, Louisiana). General Electric Company (Wilmington, North Carolina) formed Global Nuclear Fuel, retaining 51% ownership, while Hitachi and Toshiba (Japan) hold the balance. In addition, NSSS and nuclear fuel designers and manufactures outside of the U.S. (e.g., in France and Russia) have developed significant bases of operational experience, and are able to compete effectively with their U.S. based counterparts. 16 During the 1960s, the U.S. supplied virtually 100% of the Western market for uranium enrichment services. The U.S. was also a major supplier of uranium. At its peak in 1979, employment in the United States uranium industry was nearly 22,000 person-years. Employment levels today are a mere 3 percent of what they were in the late 1970s. Domestic uranium production is about 7 percent of the 1980 production level.3 Today the U.S. enrichment company, USEC, has a world market share of less than 30% of the uranium enrichment market. In addition, USEC only supplies about half of total U.S. requirements for enrichment services, the vast majority of which are actually obtained under contract with an arm of the Russian government for down-blended HEU. Furthermore, the U.S. Government's gas diffusion enrichment technology that is currently being used at the Paducah, Kentucky plant by USEC is over 50 years old and uses vast quantities of electricity which puts it at an increasing cost disadvantage. Although USEC plans to replace this aging plant with an advanced U.S. centrifuge enrichment technology during the next several years, the company has recently noted that it will “need some form of investment or other participation by a third party and/or the U.S. Government to raise the capital required in 2008 and beyond to complete the project...” Further, the centrifuge enrichment facility being constructed in New Mexico by LES, Inc. uses Urenco centrifuge technology. Thus the role of the U.S. today as supplier of enrichment services is very different and far weaker when compared against the virtual monopoly the U.S. once held in the Western world. In contrast, the European enricher Urenco has been and is presently deploying its centrifuge technology in both Europe and the U.S., while simultaneously increasing its market share worldwide. In addition, Russia has initiated a determined effort to enhance its role as a supplier of enrichment services, and nuclear power technology in general. In January 2006, Russian President Vladimir Putin proposed the establishment of an international center in Russia, under IAEA control, for the provision of uranium enrichment services, and Russia has moved forward quickly in setting up such a center. Russia is also considering the 3 UraniumIndustryAnnual1992,U.S.EnergyInformationAdministration,DOE/EIA-0478(92), October 1993 17 possibility of offering to take back from its foreign customers spent fuel produced from the nuclear fuel that Russia supplies. Thus, while the U.S. remains a participant in the international market for commercial nuclear power, it no longer enjoys a dominant role as it did four decades ago. To the extent that U.S. NSSS and nuclear fuel designers and manufacturers are able to reassert themselves on a technical and commercial basis, opportunities for U.S. influence with respect to nuclear nonproliferation might be expected to increase. However, the fact that there are other suppliers that can now provide NSSS and nuclear fuel technology and services on a competitive commercial basis suggests that the U.S. will have to work especially hard to maintain and, in some cases, rebuild its nuclear infrastructure, if it wishes to exercise its influence in international nuclear affairs. A Bechtel Power Corporation report prepared in 2004 found that companies are concerned about the “leadership and commitment provided by the industry, owners, and government to proceed with nuclear power plant development in the United States. It would appear that these suppliers are ready and capable of responding to a new rollout, but in order to commit any resources, they are looking for a solid commitment over a defined schedule for the new facilities.”4 The following chart, prepared by the World Nuclear Association, provides a projection of the number of new nuclear power plant orders that could be placed in several countries over the next few decades. This provides some insight into the size of the potential global market, if interest in nuclear power continues at current levels. During the late 1970s the U.S. made a notable change in its policies toward the back end of the fuel cycle and advanced nuclear reactor technology. Like a few other countries, the U.S. had earlier visualized the ultimate deployment of the closed fuel cycle, i.e., reprocessing of spent nuclear fuel to extract usable nuclear fuel for recycling in fast reactors that can more effectively use the recovered nuclear fuel. However, in 1976 the U.S. Government terminated all work on reprocessing and elected to proceed with the once-through fuel cycle (i.e., spent nuclear fuel is permanently disposed of without reprocessing). The Government took the position that this was the preferable way to proceed from a nonproliferation and economic perspective. In fact, it undertook a major effort to induce other advanced fuel cycle states, including France, Japan and the UK to abandon their own plans for spent fuel reprocessing. However, while most countries have not proceeded with reprocessing programs, several countries that employ nuclear energy extensively have continued with a closed fuel cycle approach that is centered around the use of mixed oxide (MOX) fuels. France and the UK offer commercial reprocessing services and MOX fabrication for other countries. Japan has recently begun operation of a commercial scale reprocessing facility, plans the wide-scale use of MOX fuel, and has a long-term plan to commercialize the fast reactor. The U.S. has no commercial reprocessing or MOX fuel fabrication plant. Much of the technological leadership in reprocessing and MOX fuel fabrication is now in France, and French technology is even being used in the MOX fuel fabrication plant being constructed at Savannah River for the disposition of excess U.S. weapons plutonium. During the last several decades, the U.S. has been struggling to implement a national policy for management of commercial spent nuclear fuel, independently of whether it will result in direct disposal of the spent fuel or reprocessing and recycle. In fact, the U.S. Government is presently in protracted litigation with most U.S. utilities for monetary damages associated with DOE's inability to accept their spent fuel and dispose of it as called for in contracts that it has with each of these customers. One adverse implication that this may have on U.S. nuclear nonproliferation policy is that it seriously undermines the ability of the U.S. to offer fuel leasing or cradle- to-grave fuel cycle services to foreign countries. The ability to make such offers could be a valuable tool for discouraging the spread of sensitive nuclear technologies. 20 The U.S. National Laboratories and affiliated research institutions have constituted an important component of the U.S. nuclear infrastructure. However, starting in the late 1970s, bipartisan support for nuclear R&D started to erode. This led to an erratic degree of support from the U.S. Government for nuclear R&D as the U.S. has moved from one Administration to another. For example, during the 1978 to 1981 period civilian nuclear R&D received 34% of the total DOE budget for energy R&D. During the 1991 to 1995 period this figure dropped to as low as 16% and there was an effort during the 1990s to terminate all Federal funding for civilian R&D related to the advancement of nuclear power. The theory, in part, was that the light water reactor was a proven, commercially established technology that did not require any further Federal support. While this decision has since been reversed, the DOE budget that had been requested for civilian nuclear R&D for fiscal year 2007 still represented only 8 % of the total DOE budget for energy R&D. While this proportion is expected to increase if GNEP moves forward, that has not yet occurred and DOE’s funding requests for the program for fiscal year 2007 were cut by about one-third as DOE has moved to implement the Joint Funding Resolution that was passed to fund most government agencies for fiscal year 2007. DOE’s FY 2008 request for nuclear energy R&D is nearly $570 million, more than double the FY 2007 appropriation. However, much of the request (nearly $400 million) is for the GNEP program which has yet to engender fulsome support amongst all necessary policymakers. 5.CURATIVE MEASURES The U.S. has and should continue to be able to influence the nonproliferation regime as a superpower in the years ahead. However, a policy that significantly strengthens the U.S. civil nuclear infrastructure will not only help the United States to build new nuclear power plants, but will also enhance its ability to advance its nonproliferation agenda. The U.S. will need to actively pursue several key objectives New Nuclear Plant Orders Consumer countries are likely to turn for support and assistance to those states possessing the **most vigorous** domestic nuclear power programs that are placing new power plant orders, extending international fuel cycle services, and maintaining leadership roles in supporting innovative improvements in advanced technologies. This suggests that the influence of the United States internationally could be enhanced significantly if the U.S. is able to achieve success in its Nuclear Power 2010 program and place several new orders in the next decade and beyond. Conversely, if the 2010 initiative falters, or if U.S. companies only are given subordinate roles in processing new plant orders, then this can only further **weaken** the U.S. nuclear infrastructure as well as the stature of the U.S. in the international nuclear community. Experts believe that the U.S. nuclear infrastructure is capable of sustaining the goals of the 2010 program, but this will require the resolution of a number of formidable problems, including arrangements for the acquisition of long lead time components and coping with anticipated shortages of experienced personnel. Maintaining the U.S. as a Significant Global Supplier The health of the U.S. civil nuclear infrastructure will also be crucial to the success of U.S. efforts to play a significant role as a nuclear supplier and to advance its nonproliferation objectives. There is a clear and compelling upsurge of interest in nuclear power in various parts of the world that is **independent of U.S. policy** and prerogatives. As a consequence, if the U.S. aspires to participate in these programs and to shape them in ways that are most conducive to nonproliferation, it will need to promote the health and viability of the American nuclear infrastructure. Perhaps more importantly, if it wishes to exert a positive influence in shaping the nonproliferation policies of other countries, it can do so more effectively by being an active supplier to and partner in the evolution of those programs. Concurrent with the prospective growth in the use of nuclear power, the global nonproliferation regime is facing some direct assaults that are unprecedented in nature. International confidence in the effectiveness of nuclear export controls was shaken by the disclosures of the nuclear operations of A.Q. Khan. These developments underscore the importance of maintaining the greatest integrity and effectiveness of the nuclear export conditions applied by the major suppliers. They also underscore the importance of the U.S. maintaining effective policies to achieve these objectives. Constructive U.S. influence will be best achieved to the extent that the U.S. is perceived as a major technological leader, supplier and partner in the field of nuclear technology. As the sole superpower, the U.S. will have considerable, on-going influence on the international nonproliferation regime, regardless of how active and successful it is in the nuclear export market. However, if the U.S. nuclear infrastructure continues to erode, it will weaken the ability of the U.S. to participate actively in the international nuclear market. If the U.S. becomes more dependent on foreign nuclear suppliers or if it leaves the international nuclear market to other suppliers, the ability of the U.S. to influence nonproliferation policy will diminish. It is, therefore, essential that the United States have vibrant nuclear reactor, uranium enrichment, and spent fuel storage and disposal industries that can not only meet the needs of U.S. utilities but will also enable the United States to promote effective safeguards and other nonproliferation controls through close peaceful nuclear cooperation other countries. The U.S. should establish a high priority goal to rebuild an indigenous nuclear industry and support its growth in domestic and international markets. U.S. nuclear exports can be used to influence other states’ nuclear programs through the nonproliferation commitments that the U.S. requires. The U.S. has so-called consent rights over the enrichment, reprocessing and alteration in form or content of the nuclear materials that it has provided to other countries, as well as to the nuclear materials that are produced from the nuclear materials and equipment that the U.S. has supplied. 23 The percentage of nuclear materials, including separated plutonium, that are subject to U.S. consent rights will diminish over time as new suppliers of nuclear materials and facilities take a larger share of the international nuclear market. Unless the U.S. is able to **compete effectively** in the international market as a supplier of nuclear fuels, equipment and technology, the quantity of the nuclear materials around the globe that the U.S. has control over will **diminish significantly** in the future. This may not immediately weaken the effectiveness of the nonproliferation regime since all the major suppliers have adopted the export guidelines of the Nuclear Supplier Group. However, only the U.S., Australia and Canada have consent rights over enrichment and reprocessing of the nuclear materials subject to their agreements. Consequently, if there is a major decline in the U.S. share of the international nuclear market, the U.S. may not be as effective as it has been in helping to ensure a rigorous system of export controls.

**Proliferation causes nuclear war.**

**Horowitz 9** (Michael, Professor of Political Science @ University of Pennsylvania (Former Emory debater and NDT Champion), *The Spread of Nuclear Weapons and International Conflict: Does Experience Matter?*, Journal of Conflict Resolution, Volume 53 Number 2, April 2009 pg. 234-257]

Learning as states gain experience with nuclear weapons is complicated. While to some extent, nuclear acquisition might provide information about resolve or capabilities, it also generates uncertainty about the way an actual conflict would go—given the new risk of nuclear escalation—and uncertainty about relative capabilities. **Rapid proliferation** may especially heighten uncertainty given the potential for reasonable states to disagree at times about the quality of the capabilities each possesses.2 What follows is an attempt to describe the implications of inexperience and incomplete information on the behavior of nuclear states and their potential opponents over time. Since it is impossible to detail all possible lines of argumentation and possible responses, the following discussion is necessarily incomplete. This is a first step. The acquisition of nuclear weapons increases the confidence of adopters in their ability to impose costs in the case of a conflict and the expectations of likely costs if war occurs by potential opponents. The key questions are whether nuclear states learn over time about how to leverage nuclear weapons and the implications of that learning, along with whether actions by nuclear states, over time, convey information that leads to changes in the expectations of their behavior—shifts in uncertainty— on the part of potential adversaries. Learning to Leverage? When a new state acquires nuclear weapons, how does it influence the way the state behaves and how might that change over time? Although nuclear acquisition might be orthogonal to a particular dispute, it might be related to a particular security challenge, might signal revisionist aims with regard to an enduring dispute, or might signal the desire to reinforce the status quo. This section focuses on how acquiring nuclear weapons influences both the new nuclear state and potential adversaries. In theory, system wide perceptions of nuclear danger could allow new nuclear states to partially skip the early Cold War learning process concerning the risks of nuclear war and enter a proliferated world more cognizant of nuclear brinksmanship and bargaining than their predecessors. However, each new nuclear state has to resolve its own particular civil–military issues surrounding operational control and plan its national strategy in light of its new capabilities. Empirical research by Sagan (1993), Feaver (1992), and Blair (1993) suggests that viewing the behavior of other states does not create the necessary tacit knowledge; there is **no substitute** for **experience** when it comes to handling a nuclear arsenal, even if experience itself cannot totally prevent accidents. Sagan contends that **civil–military instability** in many likely new proliferators and pressures generated by the requirements to handle the responsibility of dealing with nuclear weapons will skew decision-making toward **more offensive strategies** (Sagan 1995). The questions surrounding Pakistan’s nuclear command and control suggest there is no magic bullet when it comes to new nuclear powers’ making control and delegation decisions (Bowen and Wolvén 1999). Sagan and others focus on inexperience on the part of new nuclear states as a key behavioral driver. **Inexperienced operators** and the bureaucratic desire to “justify” the costs spent developing nuclear weapons, combined with organizational biases that may favor escalation to avoid decapitation—the “**use it or lose it**” mind-set— may cause new nuclear states to adopt riskier launch postures, such as **launch on warning,** or at least be perceived that way by other states (Blair 1993; Feaver 1992; Sagan 1995).3 Acquiring nuclear weapons could alter **state preferences** and make states more likely to escalate disputes once they start, given their new capabilities.4 But their general lack of experience at leveraging their nuclear arsenal and effectively **communicating** nuclear threats could mean new nuclear states will be more likely to **select adversaries poorly** and to find themselves in disputes with resolved adversaries that will reciprocate militarized challenges. The “nuclear experience” logic also suggests that more experienced nuclear states should gain knowledge over time from nuclearized interactions that helps leaders effectively identify the situations in which their nuclear arsenals are likely to make a difference. Experienced nuclear states learn to select into cases in which their comparative advantage, nuclear weapons, is more likely to be effective, increasing the probability that an adversary will not reciprocate. Coming from a slightly different perspective, uncertainty about the consequences of proliferation on the balance of power and the behavior of new nuclear states on the part of their potential adversaries could also shape behavior in similar ways (Schelling 1966; Blainey 1988). While a stable and credible nuclear arsenal communicates clear information about the likely costs of conflict, in the short term, nuclear proliferation is likely to increase uncertainty about the trajectory of a war, the balance of power, and the preferences of the adopter.

**Don't risk human survival. Deterrence is unstable.**

**Krieger 9** (David, Pres. Nuclear Age Peace Foundation and Councilor – World Future Council, *Still Loving the Bomb After All These Years*, 9/4, https://www.wagingpeace.org/articles/2009/09/04\_krieger\_newsweek\_response.php?krieger)

Jonathan Tepperman’s article in the September 7, 2009 issue of Newsweek, “Why Obama Should Learn to Love the Bomb,” provides a novel but frivolous argument that nuclear weapons “may not, in fact, make the world more dangerous….” Rather, in Tepperman’s world, “The bomb may actually make us safer.” Tepperman shares this world with Kenneth Waltz, a University of California professor emeritus of political science, who Tepperman describes as “the leading ‘nuclear optimist.’” Waltz expresses his optimism in this way: “We’ve now had 64 years of experience since Hiroshima. It’s striking and against all historical precedent that for that substantial period, there has not been any war among nuclear states.” Actually, there were a number of proxy wars between nuclear weapons states, such as those in Korea, Vietnam and Afghanistan, and some near disasters, the most notable being the 1962 Cuban Missile Crisis. Waltz’s logic is akin to observing a man falling from a high rise building, and noting that he had already fallen for 64 floors without anything bad happening to him, and concluding that so far it looked so good that others should try it. Dangerous logic! 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 seems to be arguing that seeking to prevent the proliferation of nuclear weapons is bad policy, and that nuclear weapons, because of their threat, make efforts at non-proliferation unnecessary and even unwise. If some additional states, including Iran, developed nuclear arsenals, he concludes that wouldn’t be so bad “given the way that bombs tend to mellow behavior.” Those who oppose Tepperman’s favorable disposition toward the bomb, he refers to as “nuclear pessimists.” These would be the people, and I would certainly be one of them, who see nuclear weapons as presenting an urgent danger to our security, our species and our future. 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?

**A strong SMR industry’s key to US leadership and market share.**

**Mandel 9** (Jenny – Scientific American, Environment & Energy Publishing, LLC, “Less Is More for Designers of "Right-Sized" Nuclear Reactors” September 9, 2009, http://www.scientificamerican.com/article.cfm?id=small-nuclear-power-plant-station-mini-reactor)

Tom Sanders, president of the American Nuclear Society and manager of Sandia National Laboratories' Global Nuclear Futures Initiative, has been stumping for small rectors for more than a decade. American-made small reactors, Sanders insists, can play **a central role** in global nonproliferation efforts. "Our role at Sandia is the national security-driven notion that it's in the interests of the U.S. to be one of the dominant nuclear suppliers," Sanders said. While U.S. companies have been exiting the industry over the past decades as government and popular support for new construction has waned, Sanders maintains that strong U.S. participation in the nuclear energy marketplace **would give diplomats a new tool to use with would-be nuclear powers**. "It's hard to tell Iran what to do if you don't have anything Iran wants," he explained. Sanders said mini-reactors are ideal to sell to developing countries that want to boost their manufacturing might and that would otherwise look to other countries for nuclear technologies. If the United States is not participating in that market, he said, it becomes hard to steer buyers away from technologies that pose greater proliferation risks. Sanders been promoting this view since the 1990s, he said, when he realized "we were no longer selling nuclear goods and services, so we could no longer write the rules." The domestic nuclear industry had basically shut down, with no new construction in decades and a flight of talent and ideas overseas. There is a silver lining in that brain drain, though, he believes, in that U.S. companies getting back into the game now are less tied to the traditional, giant plants and are freer to innovate. A feature that several of the new product designs share is that the power plants could be mass-produced in a factory to minimize cost, using robots to ensure consistency. Also, with less design work for each installation, the time to complete an order would be shortened and some of the capital and other costs associated with long lead times avoided, Sanders said. Another feature he favors is building the plants with a lifetime supply of fuel sealed inside. Shipped loaded with fuel, such reactors could power a small city for 20 years without the host country ever handling it. Once depleted, the entire plant would be packed back up and shipped back to the United States, he said, with the sensitive spent fuel still sealed away inside. Sanders is working on a reactor design hatched by the lab with an undisclosed private partner. He believes it is feasible to build a prototype modular reactor -- including demonstration factory components and a mockup of the reactor itself -- as early as 2014, for less than a billion dollars. A mini-reactor could ring up at less than $200 million, he said, or at $300 million to $400 million with 20 years of fuel. At $3,000 to $4,000 per kilowatt, he said, that would amount to significant savings over estimates of $4,000 to $6,000 per kilowatt for construction alone with traditional plant designs. To get a design ready to build, Sanders is urging **a partnership between the government and the private sector**. "If it's totally a government research program, labs can take 20 to 30 years" to finish such projects, he said. "If it becomes a research science project, it could go on forever." New approach, old debates So far, there is no sign that the government's nuclear gatekeeper, NRC, is wowed by the small-reactor designs. NRC's Office of New Reactors warned Babcock & Wilcox in June that the agency "will need to limit interactions with the designers of small power reactors to occasional meetings or other nonresource-intensive activities" over the next two years because of a crowded schedule of work on other proposals. Meanwhile, opponents of nuclear technologies are not convinced that small reactors are an improvement over traditional designs. Arjun Makhijani, who heads the Institute for Energy and Environmental Research, a think tank that advocates against nuclear power, sees disseminating the technology as incompatible with controlling it. "A lot of the proliferation issue is not linked to having or not having plutonium or highly enriched uranium, but who has the expertise to have or make bombs," Makhijani said. "In order to spread nuclear technologies, you have to have the people who have the expertise in nuclear engineering, who know about nuclear materials and chain reactions and things like that -- the same expertise for nuclear bombs. That doesn't suffice for you to make a bomb, but then if you clandestinely acquire the materials, then you can make a bomb." Peter Wilk, acting program director for safe energy with Physicians for Social Responsibility, an anti-nuclear group, argues that expanding nuclear power use runs counter to the goal of nonproliferation. "The whole proposition presupposes an ... international economy in which more and more fuel is produced and more and more waste must be dealt with, which only makes those problems that are still unsolved larger," he said. "It may or may not do a better job of preventing the host country from literally getting their hands on it, but it doesn't reduce the amount of fuel in the world or the amount of waste in the world," Wilk added. And then there is the issue of public opinion. "Imagine that Americans would agree to take the waste that is generated in other countries and deal with it here," Makhijani said. "At the present moment, it should be confined to the level of the fantastic, or even the surreal. If [the technology's backers] could come up with a plan for the waste, then we could talk about export." Makhijani pointed to a widely touted French process for recycling nuclear waste as a red herring (ClimateWire, May 18). "It's a mythology that it ameliorates the waste problem," he said. According to Makhijani's calculations, the French recycling process generates far more radioactive waste than it cleans up. One category of highly radioactive material, which ends up stored in glass "logs" for burial, is reduced, he said. But in processing the waste, about six times the original volume of waste is produced, he said. Much of that must be buried deep underground, and the discharge of contaminated wastewater used in recycling has angered neighboring countries, he said. Operational risk, of course, is another major concern. "One has reduced the amount of unnecessary risk," Wilke said, "but it's still unnecessary risk." He added, "I get the theory that smaller, newer, ought to be safer. The question is: Why pursue this when there are so many better alternatives?" To Sandia's Sanders, Wilke is asking the wrong question. With the governments of major economies like China, Russia and Japan putting support and cash into nuclear technologies, the power plants are here to stay, he believes. "There's going to be a thousand reactors built over the next 50 years," he said. "**The question is: Are we building them, or are we just importing them?**"

**The plan prevents the emergence of proliferators --- it locks countries into US reactor sales.**

**Loudermilk 10** (Micah, Research Associate for the Energy & Environmental Security Policy program with the Institute for National Strategic Studies at National Defense University*, Losing Its Edge? The U.S. and Nuclear Cooperation Deals,* http://inssblog.wordpress.com/2010/08/19/losing-its-edge-the-u-s-and-nuclear-cooperation-deals/)

During the last year of the George W. Bush administration, the United States pursued a number of civilian nuclear cooperation deals with countries around the world including, among others, the United Arab Emirates (UAE), Jordan, and Vietnam. President Barack Obama, since taking office in 2009, has largely followed in the footsteps of his predecessor on this subject – concluding significant nuclear deals with both the UAE and India – whose civil nuclear cooperation agreement with the U.S. has been in the works since 2005.

Both of these **agreements are important** for their own reasons. On the Indian front, the civilian nuclear agreement puts the two countries on the **path to full cooperation** in exchange for India placing its civil nuclear facilities under International Atomic Energy Agency (IAEA) safeguards. In regards to the UAE, President Obama signed a nuclear energy deal with the country in May 2009, opening the door for U.S. reactor builders in the UAE and closing the door on proliferation fears – as the UAE renounced uranium enrichment and spent fuel reprocessing. Additionally, agreements are currently being pursued with Vietnam and Jordan as well.

The UAE’s nuclear deal set the so-called “gold standard” for nuclear cooperation agreements as the nation foreswore both uranium enrichment and fuel reprocessing. This agreement is of paramount importance as it demonstrates the necessity of having the United States involved in the international nuclear fuel and energy markets. By using technology, equipment, and a fuel supply as **bargaining chips**, the government possesses the ability to **heavily influence** the open nuclear market. In doing so, the U.S. not only helps itself economically but, more importantly, can help to promote the safe and peaceful use of nuclear energy while minimizing or even eliminating the risks of proliferation inherent in the production of nuclear energy.

However, how long can this continue? With the U.S. nuclear energy industry dead domestically for over thirty years, much of the knowledge, technology, and expertise in the field has departed overseas. As time passes, the ability of the United States to control and influence such issues as reactor safety, fuel supply, safeguards, and IAEA monitoring of programs is waning rapidly. If the nuclear power industry remains dormant domestically, how much longer can the U.S. continue to **exert power and influence** on the industry globally while working to promote nonproliferation objectives? Nuclear power expansion at home may be extinct, but the creation of civilian nuclear energy programs internationally is expanding rapidly. Without advances in the field, the need for other countries to strike civilian nuclear agreements with the U.S. will **begin to diminish** and the global leader in nonproliferation efforts will eventually be **forced into a backseat**.

### 1AC—Solvency

**Contention Three – Solvency**

**Military action is necessary---it shapes technology development and overcomes market failures---that's key to commercialization.**

**Andres 11** (\*Richard B. – Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University, \*\*Hanna L. Breetz – Doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, *Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications*, Strategic Forum, National Defense University, Institute for National Strategic Studies, February 2011, http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

DoD as first Mover Thus far, this paper has reviewed two of DOD’s most pressing energy vulnerabilities—grid insecurity and fuel convoys—and explored how they could be addressed by small reactors. We acknowledge that there are many un- certainties and risks associated with these reactors. On the other hand, failing to pursue these technologies raises its own set of risks for DOD, which we review in this section: first, small reactors may fail to be commercialized in the United States; second, the designs that get locked in by the private market may not be optimal for DOD’s needs; and third, expertise on small reactors may become concentrated in foreign countries. By taking an early “first mover” role in the small reactor market, DOD could mitigate these risks and secure the long-term availability and appropriateness of these technologies for U.S. military applications. The “Valley of Death.” Given the promise that small reactors hold for military installations and mo- bility, DOD has a compelling interest in ensuring that they make the leap from paper to production. How- ever, if DOD does not provide an initial demonstration and market, there is a chance that the U.S. small reactor industry may never get off the ground. The leap from the laboratory to the marketplace is so difficult to bridge that it is widely referred to as the “Valley of Death.” Many promising technologies are never commercialized due to a **variety of market failures**— including technical and financial uncertainties, information asymmetries, capital market imperfections, transaction costs, and environmental and security externalities—that impede financing and early adoption and can lock innovative technologies **out of the marketplace**.28 In such cases, the Government can help a worthy technology to bridge the Valley of Death by accepting the first mover costs and demonstrating the technology’s scientific and economic viability.29 Historically, nuclear power has been “the **most clear-cut example** . . . of an important general-purpose technology that in the absence of military and defense-related procurement would not have been developed at all.”30 Government involvement is likely to be **crucial** for innovative, next-generation nuclear technology as well. Despite the widespread revival of interest in nu- clear energy, Daniel Ingersoll has argued that radically innovative designs face an uphill battle, as “the high capital cost of nuclear plants and the painful lessons learned during the first nuclear era have created a prevailing fear of first-of-a-kind designs.”31 In addition, **M**assachusetts **I**nstitute of **T**echnology reports on the Future of Nuclear Power called for the Government to provide modest “first mover” assistance to the private sector due to several barriers that have hindered the nu- clear renaissance, such as securing high up-front costs of site-banking, gaining NRC certification for new technologies, and demonstrating technical viability.32 It is possible, of course, that small reactors will achieve commercialization without DOD assistance. As discussed above, they have garnered increasing attention in the energy community. Several analysts have even ar- gued that small reactors could play a key role in the sec- ond nuclear era, given that they may be the only reactors within the means of many U.S. utilities and developing countries.33 However, given the tremendous regulatory hurdles and technical and financial uncertainties, it appears far from certain that the U.S. small reactor industry will take off. If DOD wants to ensure that small reactors are available in the future, then it should **pursue a leadership** role now. Technological Lock-in. A second risk is that if small reactors do reach the market without DOD assistance, the designs that succeed may not be optimal for DOD’s applications. Due to a variety of positive feedback and increasing returns to adoption (including dem- onstration effects, technological interdependence, net- work and learning effects, and economies of scale), the designs that are initially developed can become “locked in.”34 Competing designs—even if they are superior in some respects or better for certain market segments— can face barriers to entry that lock them out of the mar- ket. If DOD wants to ensure that its preferred designs are **not locked out**, then it should take a first mover role on small reactors. It is far too early to gauge whether the private market and DOD have aligned interests in reactor de- signs. On one hand, Matthew Bunn and Martin Ma- lin argue that what the world needs is cheaper, safer, more secure, and more proliferation-resistant nuclear reactors; presumably, many of the same broad qualities would be favored by DOD.35 There are many varied market niches that could be filled by small reactors, because there are many different applications and set- tings in which they can be used, and it is quite pos- sible that some of those niches will be compatible with DOD’s interests.36 On the other hand, DOD may have specific needs (transportability, for instance) that would not be a high priority for any other market segment. Moreover, while DOD has unique technical and **organizational capabilities** that could enable it to pursue more radically innovative reactor lines, DOE has indicated that it will focus its initial small reactor deployment efforts on LWR designs.37 If DOD wants to ensure that its preferred reactors are developed and available in the future, it should take a leadership role now. Taking a first mover role does not necessarily mean that DOD would be “**picking a winner**” among small reactors, as the market will probably pursue multiple types of small reactors. Nevertheless, DOD leadership would likely have a profound effect on the industry’s timeline and trajectory.

**Alternative financing arrangements uniquely reduces costs and spur commercial spillover.**

**Fitzpatrick 11** (Ryan Fitzpatrick, Senior Policy Advisor for Clean Energy at Third Way, Josh Freed, Vice President for Clean Energy at Third Way, and Mieke Eoyan, Director for National Security at Third Way, *Fighting for Innovation: How DoD Can Advance CleanEnergy Technology... And Why It Has To*, June 2011, content.thirdway.org/publications/414/Third\_Way\_Idea\_Brief\_-\_Fighting\_for\_Innovation.pdf)

The DoD has over $400 billion in annual purchasing power, which meansthe Pentagon could provide a sizeable market for new technologies. This can increase a technology’s scale of production, bringing down costs, and making the product more likely to successfully reach commercial markets. Unfortunately, many potentially significant clean energy innovations never get to the marketplace, due to a lack of capital during the development and demonstration stages. As a result, technologies that could help the military meet its clean energy security and cost goals are being abandoned or co-opted by competetors like China before they are commercially viable here in the U.S. By focusing its purchasing power on innovative products that will help meet its energy goals, DoD can provide more secure and cost-effective energy to the military—producing tremendous long-term savings, while also bringing potentially revolutionary technologies to the public. Currently, many of these technologies are passed over during the procurement process because of higher upfront costs—even if these technologies can reduce life-cycle costs to DoD. The Department has only recently begun to consider life-cycle costs and the “fullyburdened cost of fuel” (FBCF) when making acquisition decisions. However, initial reports from within DoD suggest that the methodology for determining the actual FBCF needs to be refined and made more consistent before it can be successfully used in the acquisition process.32 The Department should fast-track this process to better maximize taxpayer dollars. Congressional appropriators— and the Congressional Budget Office—should also recognize the savings that can be achieved by procuring advanced technologies to promote DoD’s energy goals, even if these procurements come with higher upfront costs. Even if the Pentagon makes procurement of emerging clean energy technologies a higher priority, it still faces real roadblocks in developing relationships with the companies that make them. Many clean energy innovations are developed by small businesses or companies that have no previous experience working with military procurement officers. Conversely, many procurement officers do not know the clean energy sector and are not incentivized to develop relationships with emerging clean energy companies. Given the stakes in developing domestic technologies that would help reduce costs and improve mission success, the Pentagon should develop a program to encourage a better flow of information between procurement officers and clean energy companies—especially small businesses. Leverage Savings From Efficiency and Alternative Financing to Pay for Innovation. In an age of government-wide austerity and tight Pentagon budgets, current congressional appropriations are simply not sufficient to fund clean energy innovation. Until Congress decides to direct additional resources for this purpose, the Defense Department must leverage the money and other tools it already has to help develop clean energy. This can take two forms: repurposing money that was saved through energy efficiency programs for innovation and using alternative methods of financing to reduce the cost to the Pentagon of deploying clean energy. For several decades the military has made modest use alternative financing mechanisms **t**o fund clean energy and efficiency projects when appropriated funds were insufficient. In a 2010 report, GAO found that while only 18% of renewable energy projects on DoD lands used alternative financing, these projects account for 86% of all renewable energy produced on the Department’s property.33 This indicates that alternative financing can be particularly helpful to DoD in terms of bringing larger and more expensive projects to fruition. One advanced financing tool available to DoD is the energy savings performance contract (ESPC). These agreements allow DoD to contract a private firm to make upgrades to a building or other facility that result in energy savings, reducing overall energy costs without appropriated funds. The firm finances the cost, maintenance and operation of these upgrades and recovers a profit over the life of the contract. While mobile applications consume 75% of the Department’s energy,34 DoD is only authorized to enter an ESPC for energy improvements done at stationary sites. As such, Congress should allow DoD to conduct pilot programs in which ESPCs are used to enhance mobile components like aircraft and vehicle engines. This could accelerate the needed replacement or updating of aging equipment and a significant reduction of energy with no upfront cost. To maximize the potential benefits of ESPCs, DoD should work with the Department of Energy to develop additional training and best practices to ensure that terms are carefully negotiated and provide benefits for the federal government throughout the term of the contract.35 This effort could possibly be achieved through the existing memorandum of understanding between these two departments.36 The Pentagon should also consider using any long-term savings realized by these contracts for other energy purposes, including the promotion of innovative technologies to further reduce demand or increase general energy security. In addition to ESPCs, the Pentagon also can enter into extended agreements with utilities to use DoD land to generate electricity, or for the long-term purchase of energy. These innovative financing mechanisms, known respectively as enhanced use leases (EULs) and power purchase agreements (PPAs), provide a **valuable degree of certainty** to third party generators. In exchange, the Department can leverage its **existing resources**—either its land or its purchasing power—to negotiate lower electricity rates and dedicated sources of locallyproduced power with its utility partners. DoD has unique authority among federal agencies to enter extended 30-year PPAs, but only for geothermal energy projects and only with direct approval from the Secretary of Defense. Again, limiting incentives for clean energy generation to just geothermal power inhibits the tremendous potential of other clean energy sources to help meet DoD’s energy goals. Congress should consider opening this incentive up to other forms of clean energy generation, including the production of advanced fuels. Also, given procurement officials’ lack of familiarity with these extended agreements and the cumbersome nature of such a high-level approval process, the unique authority to enter into extended 30-year PPAs is very rarely used.37 DoD should provide officials with additional policy guidance for using extended PPAs and Congress should simplify the process by allowing the secretary of each service to approve these contracts. Congress should also investigate options for encouraging regulated utility markets to permit PPA use by DoD. Finally, when entering these agreements, the Department should make every effort to promote the use of innovative and fledgling technologies in the terms of its EULs and PPAs. CON C L U S ION The Defense Department is in a unique position to foster and deploy innovation in clean energy technologies. This has two enormous benefits for our military: it will make our troops and our facilities more secure and it will reduce the amount of money the Pentagon spends on energy, freeing it up for other mission critical needs. If the right steps are taken by Congress and the Pentagon, the military will be able to put its resources to work developing technologies that will lead to a stronger fighting force, a safer nation, and a critical emerging sector of the American economy. The Defense Department has helped give birth to technologies and new economic sectors dozens of times before. For its own sake and the sake of the economy, it should make clean energy innovation its newest priority.

#### Rational choice explains international politics. Political psychology is at best secondary. Examples to prove psychology matters rig the game

**Harvey ’97** (Frank, Associate Prof. Pol. Sci. – Dalhousie U., “The Future’s Back: Nuclear Rivalry, Deterrence Theory, and Crisis Stability after the Cold War”, p. 8-11)

Critics of political psychology have identified several conceptual and methodological issues that should be assessed before making judg¬ments about all of this evidence. A number of theories generated by this approach were borrowed in an ad hoc fashion from the field of psychology to explain important foreign policy decisions. Theorists have generally assumed that the situations under study in psychology and foreign policy were comparable, because in every case the decision making behaviour being explained was ultimately rooted in human psychology. But it is not clear that generalizations from one field to the other are appropriate or even realistic when one considers oppor-tunities and constraints that apply in different settings. For instance, the original tests of stress and decision making were performed on subjects in controlled experiments, in simulations, or on businessmen in a corporate setting (Fleming 1991). Many of the results noted in Janis and Mann (1977) and Lebow (1981), two frequently cited works on the subject, were based on "reactions to emergency warnings about oncoming disasters that were matters of life or death, such as severe illness, radiation poisoning, earthquakes, tornadoes, floods, and air raids" (Janis and Mann 1977, 52). At best, each of these tests is only marginally analogous to interstate crises. Consequently, linking this research with, say, the behaviour expected from the United States and the USSR during intense international crises (for example, in Cuba in 1962) requires a more compelling defence. Also, many of the original theories borrowed from psychology have since been discredited (or at least substantially qualified) by the same psychologists who performed the initial tests. Fleming (1991, 7) noted, for example, that research on groupthink actually "abated in the 196os when experimental evidence failed to confirm the theories and when problems with the original experiments were discovered." Ironically, some of the earlier studies, rarely cited by proponents of the theory, demonstrated that conformity was positively related to low feelings of acceptance by the group. Although many of Janis' views have changed over time (see Janis 1989; Herek, Janis, and Huth 1987, 1989), his groupthink thesis continues to be widely cited and accepted as a legitimate criticism of rational choice theory. It is this **widespread acceptance of a relatively weak thesis that should be questioned**, especially considering Janis' slight change of heart in his later work (for example, Herek, Janis, and Huth 1987, 1989), which serves well to establish the point. Controlled psychological experiments do not constitute the only source of empirical support for critics of rational choice theory. In- depth case studies are frequently put forward to illustrate the patho-logical nature of crisis decision making (Jervis, Lebow, and Stein 1985), although there **are serious problems with this body of evidence** as well: "Actors are rarely aware of the subtle psychological processes to which they are subject, and in cases where they are aware that such processes have contributed to a policy failure, they would be unlikely to admit to them" (Fleming 1991, 2). There is little direct proof, therefore, that such processes exist or have existed at all. More impor¬tantly, because many of the studies focus entirely on policy failures, the evidence is often biased in favour of the propositions being tested. **There is an unavoidable tendency, in other words, to select cases that prove the theory**. At the same time, the alternative, rational choice model is usually operationalized, or defined, in a way that renders empirical verification almost impossible. Both Allison's (1971) and Stein's (1993, 32) depictions of the quintessential rational decision process, for example, stipulate a set of unrealistic expectations, especially in times of crisis. Contrary to assumptions held by these theorists, **rationality does not require complete information or an exhaustive search for alternatives, objectives, and consequences**; in fact, it is often irrational to undertake such a search if the marginal cost of continuing the investigation exceeds the marginal gain from doing so (Bueno de Mesquita and Lalman 1992). Similarly, rational choice theory does not stipulate that decision makers actually calculate the costs and benefits associated with each option, or measure the probabilities and utilities of every alternative outcome. This too would be irrational in most cases. Another problem with nonrational models is the assumption that they somehow provide a stronger analytical tool for understanding and explaining international relations than models derived from the rational choice perspective (Verba 1969). It may be true that individ-uals (including world leaders) are influenced by a variety of subcon-scious psychological pressures — for example, cognitive rigidity (Jervis 1976a), a need for emotional security (Steinberg 1989), unconscious desires for affiliation and group conformity (Janis 1982), subjective motivational biases (Lebow 1981), a deep-rooted human drive to be aggressive (Freud 1938), or a compulsive, narcissistic, or paranoid personality (Post 1991). But it is very likely that the relative potency of these forces will vary from one individual to the next; presumably, some leaders are more aggressive, compulsive, or paranoid than oth¬ers. Furthermore, different leaders will attempt to fulfil these needs in different ways, only one of which may be through public office or the state's foreign policy. Playing tennis five days a week, jogging three hours a day, firing staff, or even kicking the family dog are a few of the many different avenues available for venting frustrations and aggressions. For the sake of argument, assume that there is an equal probability that leaders and their foreign policy advisors fall into one of four categories described in Figure 1.1 (indirectly from Verba 1969). Although a very simplistic representation of reality, the exam¬ple serves well to demonstrate the relative utility of rationality models in international relations and crisis management research. If foreign policy elites are more likely to rank high on the aggression scale and satisfy their need to vent their aggressive energy through foreign policy decisions, then nonrational models certainly would provide a very powerful analytical tool. On the other hand, if leaders are as likely to resemble any one of the remaining hypothetical profiles, then nonra¬tional models would be inappropriate 75 percent of the time. In fact, there are several reasons why the percentage in the top left quadrant would be significantly lower, thus further limiting the utility of nonra¬tional models. **Experienced decision/ makers are likely to be more knowledgable and skilful at handling the stress associated with having to make tough decisions.** "The sort of progress which politicians have to make in any political system must make them used to high degrees of stress. If they are not able to act effectively under stress, they will not get very far in the profession ... Thus there is some form of indirect selection of effective crisis decision takers (Nicholson 1992, 129)." Also, to the extent that most crisis decisions are made by smaller groups uninhibited by bureaucratic or organizational influences, more, rather than fewer, alternatives are likely to be considered (Oneal 1988). In sum, foreign policy elites are subject to more of the condi-tions that **inhibit the impact of** personality and other **subconscious psychological pressures.**

#### Sweeping psychological generalizations have no explanatory power for politics. They represent the worst of non-falsifiable hindsight thinking.

**Samuels ’93** (Andrew, Training Analyst – Society of Analytical Psychology and Science Associate – American Academy of Psychoanalysis, Free Associtions, “The mirror and the hammer: depth psychology and political transformation”, Vol. 3D, Psychoanalytic Electronic Publishing)

The paper is about the depth psychology of political processes, focusing on processes of political change. It is a contribution to the longstanding ambition of depth psychology to develop a form of political and cultural analysis that will, in Freud's words, ‘understand the riddles of the world’. It has to be admitted that there is an equally longstanding reluctance in the non-psychological community to accept the many and varied ideas and suggestions concerning political matters that have been offered by analysts of all persuasions. I do not believe this can all be put down to resistance. **There is something offensive above reductive interpretations of complex socio-political problems in exclusively psychological terms**. The tendency to panpsychism on the part of some depth psychologists has led me to wonder if an adequate methodology and ethos actually exists with which to make an engagement of depth psychology with the public sphere possible. By ‘politics’ I mean the arrangements within a culture for the organization and distribution of power, especially economic power, and the way in which power is deployed to maintain the survival and enhance the quality of human life. Economic and political power includes control of processes of information and representation as well as the use of physical force and possession of vital resources such as land, food and water. On a more personal level, political power reflects the ability to choose freely whether to act and what action to take in a given situation. ‘Politics’ refers to the interplay between the personal and public dimensions of power. That is, there is an articulation between public, economic power and power as expressed on the personal, private level. This articulation is demonstrated in family organization, gender and race relations, and in religious and artistic assumptions as they affect the life of individuals. (I have also tried to be consistent in my use of the terms ‘culture’, ‘society’ and ‘collective’.)1 Here is an example of the difficulty with psychological reductionism to which I am referring. At a conference I attended in London in 1990, a distinguished psychoanalyst referred to the revolutionary students in Paris in 1968 as ‘functioning as a regressive group’. Now, for a large group of students to be said to regress, there must be, in the speaker's mind, some sort of normative developmental starting point for them to regress to. The social group is supposed to have a babyhood, as it were. Similarly, the speaker must have had in mind the possibility of a healthier, progressive group process — what a more mature group of revolutionary students would have looked like. **But complex social and political phenomena do not conform to the individualistic, chronological, moralistic, pathologizing framework that is often imported**. The problem stems from treating the entire culture, or large chunks of it, as if it were an individual or, worse, as if it were a baby. Psychoanalysts project a version of personality development couched in judgemental terms onto a collective cultural and political process. **If we look in this manner for pathology in the culture, we will surely find it. As we are looking with a psychological theory in mind, then, lo and behold, the theory will explain the pathology.** But this is a retrospective prophecy (to use a phrase of Freud's), twenty—twenty hindsight. In this psychoanalytic **tautologizing** there is really nothing much to get excited about. Too much psychological writing on the culture, my own included, has suffered from this kind of smug ‘correctness’ when the ‘material’ proves the theoretical point. Of course it does! If we are interested in envy or greed, then we will find envy or greed in capitalistic organization. **If we set out to demonstrate the presence of archetypal patterns**, such as projection of the shadow, in geopolitical relations, then, without a doubt, **they will seem to leap out at us**. We influence what we analyse and so psychological reflection on culture and politics needs to be muted; there is not so much ‘aha!’ as one hoped.

## \*\*\* 2AC

### 2AC—Proliferation

**Our argument isn’t racist, just logical.**

**Nye 85** (Joseph, Prof. Gov. – Harvard U., Foreign Policy, “NPT: The Logic of Inequality”, JSTOR)

But other things are not equal, and contrary to the rhetoric that will be heard in Geneva, nuclear inequality has nothing to do with racism on the part of weapons states or with the irrationality that some claim to see in Third World leaders. The key difference between weapons and non-weapons states concerns the possibility that deterrence will fail. Although superpower relations and arsenals create this risk also, it is likely to be much higher in most regional situations because of the shaky political conditions found in most states seeking nuclear weapons as well as their limited experience with nuclear command and control systems. These risks are even greater in the early stages of a nuclear program, when new weapons are tempting and vulnerable targets for pre-emptive attack. The frequency of civil wars and overthrown governments in these countries, their embryonic procedures for civil control of the military, and their shortage of advanced electronic safety locks and secure battlefield communications networks all indicate that the danger of nuclear weapons use by new proliferators far exceeds that embedded in the U.S.-Soviet relationship. Nonproliferation is not an inconsistent or hypocritical policy if it is based on impartial and realistic estimation of relative risks. Some might argue that a nonweapons state nonetheless has every moral and legal right in today's anarchic world to accept large risks. But the decision to build a nuclear weapon can impose significant new risks on third parties. If new proliferators are more likely to use nuclear weapons—even inadvertently—the breaking of a 40-year nuclear taboo becomes that much more likely, as does the chance that others might be drawn into the nuclear conflict. The inadequacies of the new proliferators' procedures for controlling weapons or weapons-usable fuels, such as plutonium or highly enriched uranium, multiply the chances that terrorists will steal nuclear devices. And finally, one must reckon with the simple but plausible proposition that the more nuclear weapons proliferate, the greater the prospects for accidental use and

**Their alternative masks exclusions, which cause backlash.**

**Biswas 1** (Shampa, Associate Professor of Politics at Whitman, *Nuclear Apartheid as Political Position: Race as a Postcolonial Resource?*, Alternatives: Global, Local, Political, Vol. 26, No. 4, Race in International Relations (Oct.-Dec. 2001), pp. 485-522)

However, despite the critical leverage that the category of apartheid as used by the Indian government carries, the category itself is **analytically problematic**, and its deployment is **politically disturbing** in other ways. On the one hand, as the article will show, there are a whole host of ways in which the concept of apartheid that lays implicit claim to certain inalienable democratic entitlements is simply untenable, given the fundamentally undemocratic character of nuclear weapons. At the same time, the political implications of India’s nuclearization under the aggressive, exclusivist regime of the Hindu nationalist party (the BJP), **does not bode well** either for regional security or for the global disarmament agenda. But much more importantly, this article argues that the use of race through the nuclear-apartheid position can also simultaneously **mask a series of exclusions**–domestically and internationally–and indeed in its use by the BJP government comes to play a “racialized, boundary-producing” role that maintains that division at the expense of marginalized sections of the Indian population. In addition to exploring the usefulness of “race” as a category of analysis in examining the BJP’s imagination of the Hindu/Indian nation, I also look at how the BJP draws on a racist global discourse on Islam and Muslims. Recently, critical-security scholars within JR have raised and problematized quite compellingly the questions of “whose security?” and “what kind of security?” does nuclear/military security provide. (2) Taking seriously the global racialized exclusions that the nuclear-apartheid position points to, I want to problematize the implicit referent (i.e., the Hindu/Indian nation) in whose name this position is being deployed by the BJP and raise questions about the political interests that are served by this deployment.

**The Indian BJP proves this.**

**Biswas 1** (Shampa, Associate Professor of Politics at Whitman, *Nuclear Apartheid as Political Position: Race as a Postcolonial Resource?*, Alternatives: Global, Local, Political, Vol. 26, No. 4, Race in International Relations (Oct.-Dec. 2001), pp. 485-522)

Where does that leave us with the question of “nuclear apartheid”? As persuasive as the nuclear-apartheid argument may be at pointing to one set of global exclusions, its complicity in the production of boundaries that help sustain a **whole other set of exclusions** also makes it suspect. It is precisely the resonances of the concept of apartheid, and the strong visceral response it generates, that gives it the ability to bound and erase much more effectively. In one bold move, the nuclear-apartheid argument announces the place of nuclear weaponry as the arbiter of global power and status, and how its inaccessibility or unavailability to a racialized Third World relegates it forever to the dustheap of history. It thus makes it possible for “Indians” to imagine themselves as a “community of resistance.” However, with that same stroke, the nuclear-apartheid position creates and sustains yet another **racialized hierarchy**, bringing into being an India that is **exclusionary** and **oppressive**. And it is precisely the boldness of this racial signifier that carries with it the ability to **erase**, **mask**, and **exclude** much more effectively. In the hands of the BJP, the “nuclear apartheid” position **becomes dangerous**–because the very boldness of this racial signifier makes it possible for the BJP to effect closure on its **hegemonic vision** of the Hindu/Indian nation. Hence, this article has argued, in taking seriously the racialized exclusions revealed by the use of the “nuclear apartheid” position at the international level, one must simultaneously reveal another set of racialized exclusions effected by the BJP in consolidating its hold on state power. I have argued that comprehending the force and effect of the invocation of “race” through the nuclear-apartheid position means to understand this mutually constitutive co-construction of racialized domestic and international hierarchical orders.

However, if there is one lesson to be learned from Indian nuclearization, it is that any vision of substantive peace at the international level must incorporate normative claims of justice. There are at least two conclusions that follow from this that I would like to end with. First, any serious attempt to halt proliferation requires a demonstrated commitment to nuclear disarmament on the part of the “nuclear five,” for both ethical and pragmatic reasons. Halfhearted attempts at arms control, despite the very best of intentions, are always susceptible to charges of racism, and for good reason. Second, as Simon Dalby has argued with respect to the question of “environmental threats,” security issues are not peripheral to questions of political economy. (97) Even at the global level, race and class are not disconnected issues. Larger structural transformations in the global political economy are a prerequisite for global peace.

**Their author says there is no impact to our proliferation frame.**

**Gusterson 6** – Their Author (Hugh, Associate Professor of Anthropology and Science and Technology Studies at MIT, *A Double Standard on Nuclear Weapons*, http://mit.edu/cis/pdf/gusterson\_audit.pdf)

A New Discourse

I **do not want** to minimize the potential dangers of nuclear proliferation. But these dangers should not be represented in ways that obscure both the dangers inherent in the continued main- tenance of our own nuclear arsenals and the fact that our own actions are often a source of the instabilities we so fear in Third World nations.

Where does this leave us? There are three different discursive positions on proliferation, each pointing in the direction of a very different **global security regime**, that do not embody the “orientalist” double standard. The first, a position of exclusion, is based pragmatically in the conventions of realpolitik. It involves the candid declaration that, while nuclear weapons may be no more dangerous in the hands of Muslims or Hindus than in those of Christians, they are a prerogative of power, and the powerful have no intention of allowing the powerless to acquire them. This is a position that, in its **rejection of easy racism** and phony moralism, is at least honorable in its frankness.

The second position, participation, is based on Kenneth Waltz’s argument that all countries benefit from acquiring nuclear weap- ons.19 This position may have more appeal in certain parts of the Third World than in the West. It is the position of India, Israel, and Pakistan, for example, which have, like the older nuclear nations, sought to maximize their power and freedom by acquiring a nuclear capability. These coun- tries pursued nuclear weapons in search of greater security vis-à-vis regional rivals and out of a desire to shift the balance of power in their client relationships with the superpowers.

The third position, renunciation, breaks down the distinctions we have constructed between “us” and “them” and asks whether nuclear weapons are safe in anyone’s hands. “What-must-on-no-account-be-known,” says Salman Rushdie, is the “impossible verity that savagery could be concealed beneath decency’s well-pressed shirt.” Our orientalist discourse on nuclear proliferation is one of our ways not to know this. This position has been nicely articulated by the late George Kennan:

I see the danger not in the number or quality of the weapons or in the intentions of those who hold them but in the very existence of weapons of this nature, regardless of whose hands they are in. ... I see no solution to the problem other than the complete elimination of these and all other weapons of mass destruction from national arsenals; and the sooner we move toward that solution, and the greater courage we show in doing so, the safer we will be.20

### 2AC—Hegemony

**ERR AFF - Layne and other “balance-of-power” scholarship suffers from empirical bias – ours doesn’t**

* This also answers Fettweis – economic downturn of 2008 doesn’t disprove unipolarlity

Wohlforth, Daniel Webster Professor of Government at Dartmouth College, 2012

[William C., “How Not to Evaluate Theories,” International Studies Quarterly, Volume 56, Issue 1, pages 219-222, March 2012, http://onlinelibrary.wiley.com/doi/10.1111/j.1468-2478.2011.00708.x/full]

The recent decline in the United States’ economic fortunes does not vindicate any prediction made by any balance-of-power realist, has no implications for any theoretical proposition about the functioning of a unipolar system, and has not caused a structural shift to bi- or multipolarity. Things can be made to seem otherwise only when scholars use inconsistent measures of capabilities, do not define terms with precision, forward inherently unfalsifiable arguments, and fail to clarify causal mechanisms.

I count myself among the many scholars who owe Christopher Layne intellectual debts for his bold arguments on fundamental questions in international politics. But I question whether “This Time It’s Real” can advance the debate. Why, I asked myself upon reading the essay, do he and I—scholars with similar training and similar methods, both of whom are firmly grounded in a tradition of realism-inspired analysis of the distribution of capabilities—so starkly disagree on the theoretical implications of agreed-upon facts? For make no mistake, no one disputes the basic facts. In late 2007, the worst financial crisis in two generations sparked a global recession during which all major economies except China’s shrank. The US economy emerged with slow growth, while China’s robust growth continued apace. As a result, the long-term trend of the relative decline of the US share of global gross domestic product (GDP) and the rise of China’s share accelerated in the 2008–2011 interval.

At issue are not the facts, but their implications for scholarship. How come every theoretical implication Layne seeks to draw from these facts strikes me as clearly wrong? Cycling between the earlier writings of Layne and other balance-of-power realists, my own work, and Layne’s present essay yields an answer: a lack of analytical consistency. On vivid display in “This Time It’s Real,” this inconsistency is hardly random. Rather, it is all skewed toward an effort to claim that recent events vindicate Layne’s and other balance-of-power realists’ prediction from the early 1990s: unipolarity generates systemic pressures that rapidly move the system back to multipolarity. I argued elsewhere (Wohlforth 1999) that this prediction derives from an unreflective and ultimately flawed application of neorealist balance-of-power theory to a novel unipolar setting. There was no theoretical basis for the prediction that unipolarity would spark balancing that would rapidly usher in multipolarity. And, as it turns out, there is no evidence that this has occurred or is about to occur. Layne is only able to imply otherwise by committing four serious analytical missteps.

Inconsistent Measures

A core problem is that the measurement approach in Layne’s essay runs afoul of widely accepted principles in the very literature of which Layne is a part—principles he endorsed in earlier work.

Is it wise to measure the distribution of capabilities exclusively by reference to economic variables? In the past, Layne himself (1993: notes 1 and 2) warned against doing just this, quoting Kenneth Waltz’s admonition that “the military, economic and other capabilities of nations cannot be sectored and separately weighed. States are not placed in the top rank because they excel in one way or another.” Is aggregate GDP measured in purchasing power parity terms really the best indicator of states’ relative economic position? Significantly, the International Monetary Fund (IMF), Layne’s data source, warns against using purchasing power parity (PPP) this way.1 Moreover, according to the data Layne presents, by that measure China far outstripped Britain in 1870, a period his 1993 article coded as unipolar with Britain as the unipole. Does it make sense to proclaim the end of unipolarity without presenting any data on military capabilities, without mentioning technology, without assessing innovative capacity, and without considering geography? Again, the answer that unambiguously emerges from Layne’s earlier highly regarded work on measuring power is “no.”2

Space constraints preclude a fulsome dissection of the complex issue of measuring the distribution of capabilities. But given the issue’s importance, Layne ought to have provided reasons for departing so significantly from the standard approach that has been used for decades in the literature.

Undefined Terms

“This Time It’s Real” provides no definitions of “unipolarity,”“pole,”“hegemony,” or “Pax Americana.” These terms do not have widely agreed-upon meanings. What, then, should I make of Layne’s headline claim that unipolarity has ended? Using my definitions or others that have emerged in the large literature on unipolarity (for example, Wilkinson 1999; Wohlforth 1999, 2002; Mowle and Sacko 2007; Brooks and Wohlforth 2008; Ikenberry, Mastanduno, and Wohlforth 2009; Hansen 2011; Monteiro 2012) risks one of those “talking past each other” pseudodebates. To avoid that, I went back to Layne’s earlier work, which defined unipolarity as a system containing one power whose “capabilities are formidable enough to preclude the formation of an overwhelming balancing coalition against it” (Layne 1993: note 2). There, as noted, Layne stressed that all relevant components of state capabilities need to be assessed. It is also clear that both he and Waltz thought the system was unipolar until quite recently. For his headline claim that unipolarity has ended to be consistent with these definitions, Layne would need to show that aggregate capabilities have shifted so as to make a counterbalance much more feasible than it was before the financial crisis and great recession.

“This Time It’s Real” does not even begin to make that case. Missing is any argument for how a 3% decline in the US share of global GDP amounts to a polarity shift according to Layne’s own definitions (according to IMF, World Bank, and UN estimates, over a 1993–2010 interval, the United States has declined from 26% to 23% of global GDP in nominal terms, and from 23% to just under 20% in PPP terms.) If Layne has some new definition that is consistent with this proclamation, it is incumbent upon him to state it. Otherwise, it is hard to see how this new claim can advance scholarship. The same goes for predictions about the imminent demise of US “hegemony” and the “Pax Americana.” Without clearer definitions of these things, there will be no way to evaluate these predictions empirically, which brings us to the third problem.

Unfalsifiable Arguments

For nearly 20 years, Layne, Kenneth Waltz, and other balance-of-power realists have proclaimed multipolarity’s imminent return. They have been crystal clear in identifying balancing as the chief causal mechanism that would produce this outcome. Their argument attracted so much attention in large part because it was simple and appeared to flow logically from their theory: “overwhelming power repels and leads others to try to balance against it” (Waltz 2000:28). As Layne (1993:92) stressed, “balancing has especially strong explanatory power in accounting for the [fact] that unipolarity tends to be short-lived …” He predicted that “Unipolarity will stimulate the emergence of eligible states as great powers, [and will] cause other states to balance against the United States” (Layne 1993:51). Waltz (1997:915) agreed: “Some of the weaker states in the system will … act to restore a balance and move the system back to bi- or multipolarity.” In all of the many papers they wrote on the subject, Layne and Waltz consistently claimed to see balancing processes already under way. “Multipolarity is developing before our eyes,”Waltz (1997:915) wrote. “To all but the myopic, it can already be seen on the horizon. Moreover, it is emerging in according with the balancing imperative” (Waltz 1997:915).

In my 1999 article, I argued that Layne, Waltz, and other realists were using a theory whose scope conditions did not obtain (Wohlforth 1999). Their theory predicts reactions to a rising power that might attain preponderance, not responses to a state whose preponderance is already firmly established. Even if one accepted the veracity of the whole Waltzian project, I argued, a properly specified theory predicted that unipolarity would be peaceful and durable: peaceful because two key causes for great-power war—systemic balancing and counterhegemonic rivalry—were absent (cf. Monteiro 2012) and durable because the speedy route to equilibrium—balancing—was for all practical purposes not in the cards. My arguments for why balancing was so unlikely came straight from standard realist theory. In a nutshell, the size and comprehensiveness of the capabilities gap meant contenders had a long way to go, and unipolarity’s geography (America’s offshore location, the contenders for peer status all clustered in or around Eurasia) meant that local balancing was likely to impede internal or external efforts to restore systemic equilibrium.

Now Layne claims that events verify his arguments. But his essay provides no evidence that balancing has played any causal role, for good reason. As Stephen Brooks and I have shown in detail (Brooks and Wohlforth 2005, 2008), there simply is no such evidence. It is not just that we see no real balancing: military spending by great powers is at historical lows as a percentage of GDP, and the main alliance formation since 1991 has been the expansion and tightening of US alliances, while China has continued to have only one reliable ally over this entire period: North Korea. Digging deeply into the strategic interactions of contemporary major powers, we found no evidence of more subtle observable implications of balancing dynamics and strong evidence that an important cause of their absence was indeed the high costs of balancing in a unipolar system.

What happened? This debate started out being tractable empirically because we all specified observable causal mechanisms, not just predicted outcomes. With time, however, the balance-of-power realists have placed decreasing emphasis on balancing as a cause of structural change to the point that it practically disappears, as in Layne’s current essay. The claim then appears to be that any shift toward a less concentrated distribution of capabilities, whatever the cause, validates the theory.

Campbell Craig (2011) puts the bottom line well:

The absence of traditional military balancing against the US since the end of the Cold War, a fact of international life that almost no one now denies, poses a major problem for balance-of-power Realists, who argue that major powers are destined to build up their own military forces, and/or create formal military alliances, in order to balance against a dominant state. Prominent structural realists have predicted . . . balancing behaviour since the early 1990s, but it hasn’t happened yet . . . [B]alance-of power Realists must show why major powers have not shown any indication of balancing so far over two decades, indisputably a long time in the context of modern international history… . Otherwise, [they] are forced simply to assert that a new polar system will emerge, someday, simply because that is how international politics operates. This, as any student of social science knows, is an unfalsifiable argument.

Unclear Mechanisms

International Relations (IR) scholars often cite complex events as bearing on the veracity of their theories without doing the careful work to establish the connection between the causes of the event and the causal mechanisms implied by the theory (Wohlforth 1998). The debate over unipolarity’s durability is a case in point. Needless to say, this is an important question and IR scholars should engage it. But we need to be clear about the mechanisms of systemic change that are exogenous to the international system, those that are somehow connected to the system but are unrelated to unipolarity, and those that might actually be linked to the unipolar distribution of capabilities.

Unless I missed something, Layne’s theory is about how unipolarity generates systemic forces that work for a rapid return of bi- or multipolarity. Much of Layne’s essay, by contrast, is about economics, primarily the shift in global GDP shares. As I noted earlier, Layne is certainly correct that the financial crisis and “great recession” accelerated China’s relative economic rise. But he provides no argument or evidence to show that the unipolar distribution of capabilities stimulated, prompted, influenced, or affected this change in any way. As William Thompson (2006:17) observed, Layne never explains “why uneven growth should be viewed as a function of unbalanced power.” The causes of economic growth are exogenous to the theories under discussion, so fast or slower-than-expected economic growth of China, the United States, or any other country has no bearing on the veracity of those theories. Even if we were to accept Layne’s claim that a new polar structure has emerged, it would have little to do with arguments he advanced about unipolarity.

Indeed, Layne provides no argument or evidence that clearly links the financial collapse, great recession, and consequent ballooning of the US budget deficit to the international system at all (at least, as scholars of international security construe it). I am not aware of any study that shows a connection between any US security commitment and the causes of the economic downturn. The downturn might affect the United States’ willingness to sustain defense spending at 4–5% of GDP and may even prompt Washington to reevaluate some of its security commitments (though Layne probably exaggerates the magnitude), but that does not mean that defense spending or security commitments caused the downturn in the first place. Exogenously generated economic changes do not validate the balance-of-power realists’ arguments.

The same goes for China’s rise. In 1999, I concluded that because balancing was not in the cards, “the fate of unipolarity depends on the relative rates of growth and innovation of the main powers.” I stressed that “Social science lacks a theory that can predict the rise and fall of great powers” (Wohlforth 1999:32). My best guess was that, because growth tends to slow as countries get rich, the rate at which China would close the gap would slow with time. I based this not on my theory or any other IR theory but on the standard Solow growth theory in economics, backed up by large-N statistical tests. I agree with Eichengreen, Park, and Shin (2011) that this theory and empirical law probably apply to China.

But this assessment concerns mechanisms that are exogenous to theoretical propositions about how a unipolar system works. If China violates the economists’ law of declining growth and continues to surge at 10% annually even as it approaches developed country levels of per capita GDP, then economic theory is implicated, not any proposition I or Layne advanced about unipolarity. If the economists are right, and China slows down, then this is another instance of their theory, not mine. The same goes for many other phenomena that might slow China’s rise, such domestic political instability. Their occurrence would prolong unipolarity, but would not make Layne’s arguments about how unipolarity works any less true or mine more true.

Theory evaluation is not the only reason to be clear about exogenous vs. endogenous mechanisms. There is a pragmatic side to this as well. Layne and I are scholars of international security, not experts in economic growth, international finance, or Chinese politics. When the debate begins to feature arguments about the US dollar as a reserve currency, for example, or highly detailed conjectures about the Chinese political economy or system of governance, we need to be aware that we have strayed a long way from the core propositions derived from the theories under discussion. These propositions concern states, the measurement of power, security, geopolitics, historical comparisons—the sorts of things IR scholars have been working on for decades and are best able to evaluate. I view these propositions as most central to the debate. And, as I have noted, the propositions of this type that I helped develop have **withstood rigorous empirical tests**, while those propounded by **the balance-of-power realists have not**.

Conclusion

Though I view Layne’s essay as hyperbolic, it, nonetheless, underscores important challenges to neorealist-style analyses of contemporary international politics (for example, Wagner 1993, 2007; Wendt 2000; Buzan 2004; Legro 2011). By how much does the United States have to decline for the system’s operating dynamics to shift fundamentally? To what degree are the properties attributed to unipolarity a function of the United States’ specific security commitments to Europe and Asia as opposed to its latent capacity to act? These challenges become more relevant the less self-evident a given polar structure is. Addressing them surely will require consistent measures, clear definitions, falsifiable arguments, and clarity about causal mechanisms. So, the very economic shifts Layne documents put a premium on the kind of analytical clarity his essay lacks.

### 2AC—Solvency

**Finally, energy policy advocacy is a tool not a trap --- we should build momentum and support for energy changes.**

**Shove & Walker 7** Elizabeth Sociology @ Lancaster Gordon Geography @ Lancaster “CAUTION! Transitions ahead: politics, practice, and sustainable transition management” *Environment and Planning C* 39 (4)

For academic readers, our commentary argues for loosening the intellectual grip of ‘innovation studies’, for backing off from the nested, hierarchical multi-level model as the only model in town, and for exploring other social scientific, but also systemic theories of change. The more we think about the politics and practicalities of reflexive transition management, the more complex the process appears: for a policy audience, our words of caution could be read as an invitation to abandon the whole endeavour. If agency, predictability and legitimacy are as limited as we’ve suggested, this might be the only sensible conclusion.However, we are with Rip (2006) in recognising the value, productivity and everyday necessity of an ‘**illusion of agency’**, and of the working expectation that a difference can be made even in the face of so much evidence to the contrary. The outcomes of actions are unknowable, the system unsteerable and the effects of deliberate intervention inherently unpredictable and, ironically, it is this that sustains concepts of agency and management. As Rip argues ‘**illusions are productive** because they **motivate action** and repair work, and thus something (whatever) is achieved’ (Rip 2006: 94). Situated inside the systems they seek to influence, governance actors – and actors of other kinds as well - are part of the **dynamics of change**: even if they cannot steer from the outside they are **necessary to processes within**. This is, of course, also true of academic life. Here we are, busy critiquing and analysing transition management in the expectation that somebody somewhere is listening and maybe even taking notice. If we removed that illusion would we bother writing anything at all? Maybe we need such fictions to keep us going, and maybe – fiction or no - somewhere along the line something really does happen, but not in ways that we can anticipate or know.

**No prior questions.**

**Owen 2** (David, Reader of Political Theory at the University of Southampton, Reader of Political Theory at the Univ. of Southampton, Millennium Vol 31 No 3 p. 655-657)

Commenting on the ‘philosophical turn’ in IR, Wæver remarks that ‘[a] frenzy for words like “epistemology” and “ontology” often signals this philosophical turn’, although he goes on to comment that these terms are often used loosely.4 However, loosely deployed or not, it is clear that debates concerning ontology and epistemology play a central role in the contemporary IR theory wars. In one respect, this is unsurprising since it is a characteristic feature of the social sciences that periods of disciplinary disorientation involve recourse to reflection on the philosophical commitments of different theoretical approaches, and there is no doubt that such reflection can play a valuable role in making explicit the commitments that characterise (and help individuate) diverse theoretical positions. Yet, such a philosophical turn is not without its dangers and I will briefly mention three before turning to consider a confusion that has, I will suggest, helped to promote the IR theory wars by motivating this philosophical turn. The first danger with the philosophical turn is that it has an inbuilt tendency to prioritize issues of ontology and epistemology over explanatory and/or interpretive power as if the latter two were merely a simple function of the former. But while the explanatory and/or interpretive power of a theoretical account is not wholly independent of its ontological and/or epistemological commitments (otherwise criticism of these features would not be a criticism that had any value), it is by no means clear that it is, in contrast, wholly dependent on these philosophical commitme

nts. Thus, for example, one need not be sympathetic to rational choice theory to recognise that it can provide powerful accounts of certain kinds of problems, such as the tragedy of the commons in which dilemmas of collective action are foregrounded. It may, of course, be the case that the advocates of rational choice theory cannot give a good account of why this type of theory is powerful in accounting for this class of problems (i.e., how it is that the relevant actors come to exhibit features in these circumstances that approximate the assumptions of rational choice theory) and, if this is the case, it is a philosophical weakness—but this does not undermine the point that, for a certain class of problems, rational choice theory may provide the best account available to us.In other words, while the critical judgement of theoretical accounts in terms of their ontological and/or epistemological sophistication is one kind of critical judgement, it is not the only or even necessarily the most important kind. The second danger run by the philosophical turn is that because prioritisation of ontology and epistemology promotes theory-construction from philosophical first principles, it cultivates a theory-driven rather than problem-driven approach to IR. Paraphrasing Ian Shapiro, the point can be put like this: since it is the case that there is always a plurality of possible true descriptions of a given action, event or phenomenon, the challenge is to decide which is the most apt in terms of getting a perspicuous grip ontheaction, event or phenomenon in question given the purposes of the inquiry; yet, from this standpoint, ‘theory-driven work is part of a reductionist program’ in that it ‘dictates always opting for the description that calls for the explanation that flows from the preferred model or theory’. 5 The justification offered for this strategy rests on the mistaken belief that it is necessary for social science because general explanations are required to characterise the classes of phenomena studied in similar terms. However, as Shapiro points out, this is to misunderstand the enterprise of science since ‘whether there are general explanations for classes of phenomena is a question for social-scientific inquiry, not to be prejudged before conducting that inquiry’.6 Moreover, this strategy easily slips into the promotion of the pursuit of generality overthat of empirical validity. The third danger is that the preceding two combine to encourage the formation of a particular image of disciplinary debate in IR—what might be called (only slightly tongue in cheek) ‘the Highlander view’—namely, an image of warring theoretical approaches with each, despite occasional temporary tactical alliances, dedicated to the strategic achievement of sovereignty over the disciplinary field. It encourages this view because the turn to, and prioritisation of, ontology and epistemology stimulates the idea that there can only be one theoretical approach which gets things right, namely, the theoretical approach that gets its ontology and epistemology right. This image feeds back into IR exacerbating the first and second dangers, and so a potentially vicious circle arises.

**Problem-solution impact is backwards—acting with a flawed epistemology allows us to change that epistemology.**

It is not a prerequisite to action—we do not need a correct understanding of being prior to action. We learn through being.

Graham **HARRIS** Adjunct Prf. @ Centre for Environment University of Tasmania ‘**7** *Seeking Sustainability in an age of complexity* p. 9-10

1 am not going to address the global 'litany' at length here. The arguments have been well made by others, especially and most elegantly by E. O. Wilson. What 1 wish to address here is the question: 'Can we grasp the complexity of it all and, if so, what do we do about it?' Given the fundamental nature of the problem the destruction of the biosphere and its ecosystem ser- vices together with the huge changes going on in human societies and cultures driven by globalisation and technological change the precautionary principle would suggest that even if the epistemology is flawed, the data are partial and the evidence is shaky, we should pay attention to the little we know and do whatever is possible to mitigate the situation even if we fundamentally disagree about the means and the ends. The only ethical course of action is, as John Ral- ston Saul writes," based on 'a sense of the other and of inclusive responsibility'. We know enough to act. Ethics is about uncertainty, doubt, system thinking and balancing difficult choices. It is about confronting the evidence**.** Over the past two or three decades, as there has been an increasing appre- ciation of the importance of good environmental management, and as western societies have become more open and the ICT revolution has made informa- tion much more widely available there has been a growing debate between the worlds of science, industry, government and the community around environ- mental ethics and environmental issues and their management. During this period new knowledge has been gained, ideas have changed (sometimes quite fundamentally) and there have been huge changes in government and social institutions and policies. We are all on a recursive journey together: we are lit- erally 'making it up as we go along'. This is not easy and there are no optimal solutions. This is an adaptive process requiring feedback from all parts of the system. Yes, there will be surprises. This is why it is so important that when we act we constantly reflect on what we know and what we are doing about it and where it is all going. As we reach the physical limits of the global biosphere the values we place on things are changing and must change further. A new environmental ethic is required, one that is less instrumental and more embracing. Traditionally there has tended to be a schism between those who take an anthropocentric view (that the world is there for us to use) and those who take the non-anthropocentric view (those who value nature in its own right). Orthodox anthropocentrisni dictates that non-human value is instrumental to human needs and interests. In contrast, non-anthropocentrics take an objectivist view and value nature intrinsically; some may consider the source of value in non-human nature to be independent of human consciousness.45 What is required is a more complex and systems view of ethics which finds a middle ground between the instrumentalist and objectivist views. Norton '46 for example, proposes an alternative and more complex theory of value - a universal Earth ethic - which values processes and dynamics as well as entities and takes an adaptive management view of changing system properties. For sustainable development to occur, choices about values will remain within the human sphere but we should no longer regard human preferences as the only criterion of moral significance. 'Humans and the planet have entwined destinies"' and this will be increasingly true in many and complex ways as we move forward. There are calls for an Earth ethic beyond the land ethic of Aldo Leopold.45 The science of ecology is being drawn into the web .49 Ecologists are becoming more socially and culturally aware and engaged" and the 'very doing' of ecology is becoming more ethical.tm' Some scientists are beginning to see themselves more as agents in relationships with society and less as observers.

### 2AC—Framework

**Policy focus is necessary to prevent destruction.**

**Crist 4** (Eileen, Professor at Virginia Tech in the Department of Science and Technology, “Against the social construction of nature and wilderness”, Environmental Ethics 26;1, p 13-6, http://www.sts.vt.edu/faculty/crist/againstsocialconstruction.pdf)

Yet, constructivist analyses of "nature" favor remaining in the comfort zone of zestless agnosticism and noncommittal meta-discourse. As David Kidner suggests, this intellectual stance may function as a mechanism against facing the devastation of the biosphere—an undertaking long underway but gathering momentum with the imminent bottlenecking of a triumphant global consumerism and unprecedented population levels. Human-driven extinction—in the ballpark of Wilson's estimated 27,000 species per year—is so unthinkable a fact that choosing to ignore it may well be the psychologically risk-free option. Nevertheless, this is the **opportune** historical **moment** for **intellectuals** in the humanities and social sciences to join forces with conservation scientists in order to help create the consciousness shift and **policy changes** to stop this irreversible destruction. Given this outlook, how **students** in the human sciences are **trained** to regard scientific knowledge, and what kind of **messages percolate to the public from the academy** about the nature of scientific findings, **matter** immensely. The "agnostic stance" of constructivism toward "scientific claims" about the environment—a stance supposedly mandatory for discerning how scientific knowledge is "socially assembled"[32]—is, to borrow a legendary one-liner, striving to interpret the world at an hour that is pressingly calling us to change it.

**Prioritize environmental existence over framing and ontology.**

**Wapner 3** (Paul, Professor and Director of the Global Environmental Policy Program @ American, “Leftist Criticism of ‘Nature’” Dissent Winter p. 74-75)

The third response to eco-criticism would require critics to acknowledge the ways in which they themselves silence nature and then to respect the sheer otherness of the nonhuman world. Postmodernism prides itself on criticizing the urge toward mastery that characterizes modernity. But isn’t mastery exactly what postmodernism is exerting as it captures the nonhuman world within its own conceptual domain? Doesn’t postmodern cultural criticism deepen the modernist urge toward mastery by eliminating the ontological weight of the nonhuman world? What else could it mean to assert that there is no such thing as nature? I have already suggested the postmodernist response: yes, recognizing the social construction of “nature” *does* deny the self-expression of the nonhuman world, but how would we know what such self-expression means? Indeed, nature doesn’t speak; rather, some person always speaks on nature’s behalf, and whatever that person says is, as we all know, a social construction. All attempts to listen to nature are social constructions—***except one***. Even the most radical postmodernist must acknowledge the distinction between physical existence and nonexistence. As I have said, postmodernists accept that there is a physical substratum to the phenomenal world even if they argue about the different meanings we ascribe to it. This acknowledgment of physical existence is crucial. We can’t ascribe meaning to that which doesn’t appear. What doesn’t exist can manifest no character. Put differently, yes, the postmodernist should rightly worry about interpreting nature’s expressions. And all of us should be wary of those who claim to speak on nature’s behalf (including environmentalists who do that). But we need not doubt the simple idea that a prerequisite of expression is existence. This in turn suggests that preserving the nonhuman world—in all its diverse embodiments—must be seen by eco-critics as a fundamental good. Eco-critics must be supporters, in some fashion, of environmental preservation. Postmodernists reject the idea of a universal good. They rightly acknowledge the difficulty of identifying a common value given the multiple contexts of our value-producing activity. In fact, if there is one thing they vehemently scorn, it is the idea that there can be a value that stands above the individual contexts of human experience. Such a value would present itself as a metanarrative and, as Jean- François Lyotard has explained, postmodernism is characterized fundamentally by its “incredulity toward meta-narratives.” Nonetheless, I can’t see how postmodern critics can do otherwise than accept the value of preserving the nonhuman world. The nonhuman is the extreme “other”; it stands in contradistinction to humans as a species. In understanding the constructed quality of human experience and the dangers of reification, postmodernism inherently advances an ethic of respecting the “other.” At the very least, respect must involve ensuring that the “other” actually continues to exist. In our day and age, this requires us to take responsibility for protecting the actuality of the nonhuman. Instead, however, we are running roughshod over the earth’s diversity of plants, animals, and ecosystems. Postmodern critics should find this particularly disturbing. If they don’t, they deny their own intellectual insights and compromise their fundamental moral commitment. Now, what does this mean for politics and policy, and the future of the environmental movement? Society is constantly being asked to address questions of environmental quality for which there are no easy answers. As we wrestle with challenges of global climate change, ozone depletion, loss of biological diversity, and so forth, we need to consider the economic, political, cultural, and aesthetic values at stake. These considerations have traditionally marked the politics of environmental protection. A sensitivity to eco-criticism requires that we go further and include an ethic of otherness in our deliberations. That is, we need to be moved by our concern to make room for the “other” and hence fold a commitment to the nonhuman world into our policy discussions. I don’t mean that this argument should drive all our actions or that respect for the “other” should always carry the day. But it must be a central part of our reflections and calculations. For example, as we estimate the number of people that a certain area can sustain, consider what to do about climate change, debate restrictions on ocean fishing, or otherwise assess the effects of a particular course of action, we must think about the lives of other creatures on the earth—and also the continued existence of the nonliving physical world. We must do so not because we wish to maintain what is “natural” but because we wish to act in a morally respectable manner. I have been using postmodern cultural criticism against itself. Yes, the postmodernists are right: we can do what we want with the nonhuman world. There is nothing essential about the realm of rocks, trees, fish, and climate that calls for a certain type of action. But postmodernists are also right that the only ethical way to act in a world that is socially constructed is to respect the voices of the others— of those with whom we share the planet but with whom we may not share a common language or outlook. There is, in other words, a limit or guiding principle to our actions. As political theorist Leslie Thiele puts it, “One can’t argue for the diversity of views of ‘nature’ without taking a stand for the diversity of nature.”

**Our predictions are different from past failures.**

**Voß 9** (Jan-Peter, Innovation in Governance Research Group, Institute of Sociology/Center for Technology and Society Technische Universita¨t Berlin, “Designing long-term policy: rethinking transition Management” *Policy Sci* 42 p. 276-277)

Long-term policy design is politically **salient again**. Substantive policy goals and policy processes are re-emerging that seek to restructure radically key social systems in response to a variety of social challenges. In the context of debates about sustainable development there is growing policy interest in stepping away from incremental developments along ‘business-as-usual’ trajectories. Policy-makers **increasingly consider** how conventional measures (such as environmental taxes and regulations aimed at reforming collective behaviours, economic sectors and technologies) can be overlaid with a more integrated package that delivers a ‘sustainability transition’ to radically more sustainable societal systems over the long-term. Take our energy systems as a case in point. A commitment taken by governments of the G8 in 2008 is an indication that a consensus is emerging on a global target to cut greenhouse gas emissions by 50% by 2050. Current energy systems based in fossil fuels are currently responsible for a majority of these emissions. Given that these energy systems underpin economic activity in other areas too, then meeting climate change targets implies transforming our energy systems into radically decarbonised forms. There is a growing body of academic work on the implications of such long-term challenges for the concepts and practices of governance.1 A notable example of a new generation of long-term policy design is the ‘transition management’ approach instituted by the Dutch government since 2001 (see the article by Kemp and Rotmans 2009). The development and implementation of this design are the focus of this special issue. This interest contrasts sharply with the disrepute into which long-term policies had fallen after the 1970s. Modernist conceptions of societal planning had reached a crisis point. The not unconnected combination of an increasingly tarnished track record, an apparent inability to rise to macro-economic problems and welfare crises, and the rise of neo-liberal ideology, all contributed to a decline in long-range planning ambitions in OECD governments and elsewhere. The collapse of the planned economies a decade later confirmed this newly received wisdom. Long-term policy had become linked with longrange, wide-scale and highly interventionist public planning. And that kind of planning no longer had a good reputation. This historical context prompts an intriguing question: whether interest in ‘transitions towards sustainable development’ signals a return to long-range policy design? Does this open space for more ambitious initiatives in sustainable development? The collective urge to reflect, anticipate and intervene in societal development is a recurring theme in the policy science literature (e.g. Mill 1862; Dewey 1927; Lindblom 1959/1969; Vickers 1965; and more recently, Elmore 1985; Fischer 1995, 2003; Schon and Rein 1994; Bobrow and Dryzek 1987). Recent long-range policy ideas try to incorporate some of the **painful lessons** from past planning failures; failures which fed the neo-liberal reaction. The current generation of long-term policy approaches appears more ‘**reflexive’**, it avoids the **notion of planning** and is well aware of the **limits to full knowledge** in advance and steering the course of history (Meadowcroft 1999). We consider how this reflexive revival is panning out in the case of TM. Transition management combines an orientation toward a long-term vision of ‘sustainable development’ with short-term experimental learning to probe options and find pathways to realise the vision. Its time horizon is 25–50 years. Over the course of the process the vision may be adapted as learning about options proceeds. This, in turn, may shift criteria for designing and evaluating experiments. This recursive cycle for meeting substantive goals (e.g. reductions in carbon emissions, increases in resource efficiency, enhancements in biodiversity) is a key characteristic of transition management. Another characteristic is the mobilisation of ‘forerunners’ to become involved in ‘transition arenas’, where visions are formulated and experiments are carried out. The concept envisages procedural arrangements that catalyse innovation and societal learning for the sustainable development of sectors like energy, mobility or agriculture. Whilst substantial goals drive the process, transition management refrains from fixing specific measures and strategies too early and too rigidly. At the core is the idea to modulate co-evolutionary dynamics that already drive socio-technical change, and to bend them in ways that facilitate transformative innovation (articulating guiding visions and experimenting with options and pathways). The general approach is one of nurturing and growing rather than planning and controlling long-term societal change.

**Yes VTL.**

**Bernstein ‘2** (Richard J., Vera List Prof. Phil. – New School for Social Research, “Radical Evil: A Philosophical Interrogation”, p. 188-192)

This is precisely what Jonas does in The Phenomenon of Life, his rethinking of the meaning of organic life. He tealizes that his philosophical project goes against many of the deeply embedded prejudices and dogmas of contemporary philosophy. He challenges two well-entrenched dogmas: that there is no metaphysical truth, and that there is no path from the "is" to the "ought". To escape from ethical nihilism, we must show that there is a metaphysical ground of ethics, an objective basis for value and purpose in being itself. These are strong claims; and, needless to say, they are extremely controversial. In defense of Jonas, it should be said that he approaches this task with both boldness and intellectual modesty. He frequently acknowledges that he cannot "prove" his claims, but he certainly believes that his "premises" do "more justice to the total phenomenon of man and Being in general" than the prevailing dualist or reductionist alternatives. "But in the last analysis my argument can do no more than give a rational grounding to an option it presents as a choice for a thoughtful person — an option that of course has its own inner power of persuasion. Unfortunately I have nothing better to offer. Perhaps a future metaphysics will be able to do more." 8 To appreciate how Jonas's philosophical project unfolds, we need to examine his philosophical interpretation of life. This is the starting point of his grounding of a new imperative of responsibility. It also provides the context for his speculations concerning evil. In the foreword to The Phenomenon of Life, Jonas gives a succinct statement of his aim. Put at its briefest, this volume offers an "existential" interpretation of biological facts. Contemporary existentialism, obsessed with man alone, is in the habit of claiming as his unique privilege and predicament much of what is rooted in organic existence as such: in so doing, it withholds from the organic world the insights to be learned from the awareness of self. On its part, scientific biology, by its rules confined to the physical, outward facts, must ignore the dimension of inwardness that belongs to life: in so doing, it submerges the distinction of "animate" and "inanimate." A new reading of the biological record may recover the inner dimension — that which we know best -- for the understanding of things organic and so reclaim for psycho-physical unity of life that place in the theoretical scheme which it had lost through the divorce of the material and the mental since Descartes. p. ix) Jonas, in his existential interpretation of bios, pursues "this underlying theme of all of life in its development through the ascending order of organic powers and functions: metabolism, moving and desiring, sensing and perceiving, imagination, art, and mind — a progressive scale of freedom and peril, culminating in man, who may understand his uniqueness anew when he no longer sees himself in metaphysical isolation" (PL, p. ix). The way in which Jonas phrases this theme recalls the Aristotelian approach to bios, and it is clear that Aristotle is a major influence on Jonas. There is an even closer affinity with the philosophy of nature that Schelling sought to elaborate in the nineteenth century. Schelling (like many post- Kantian German thinkers) was troubled by the same fundamental dichotomy that underlies the problem for Jonas. The dichotomy that Kant introduced between the realm of "disenchanted" nature and the realm of freedom leads to untenable antinomies. Jonas differs from both Aristotle and Schelling in taking into account Darwin and contemporary scientific biology. A proper philosophical understanding of biology must always be compatible with the scientific facts. But at the same time, it must also root out misguided materialistic and reductionist interpretations of those biological facts. In this respect, Jonas's naturalism bears a strong affinity with the evolutionary naturalism of Peirce and Dewey. At the same time, Jonas is deeply skeptical of any theory of evolutionary biology that introduces mysterious "vital forces" or neglects the contingencies and perils of evolutionary development.' Jonas seeks to show "that it is in the dark stirrings of primeval organic substance that a principle of freedom shines forth for the first time within the vast necessity of the physical universe" (PL 3). Freedom, in this broad sense, is not identified exclusively with human freedom; it reaches down to the first glimmerings of organic life, and up to the type of freedom manifested by human beings. " 'Freedom' must denote an objectively discernible mode of being, i.e., a manner of executing existence, distinctive of the organic per se and thus shared by all members but by no nonmembers of the class: an ontologically descriptive term which can apply to mere physical evidence at first" (PL 3). This coming into being of freedom is not just a success story. "The privilege of freedom carries the burden of need and means precarious being" (PL 4). It is with biological metabolism that this principle of freedom first arises. Jonas goes "so far as to maintain that metabolism, the basic stratum of all organic existence, already displays freedom — indeed that it is the first form freedom takes." 1 ° With "metabolism — its power and its need — not-being made its appearance in the world as an alternative embodied in being itself; and thereby being itself first assumes an emphatic sense: intrinsically qualified by the threat of its negative it must affirm itself, and existence affirmed is existence as a concern" (PL 4). This broad, ontological understanding of freedom as a characteristic of all organic life serves Jonas as "an Ariadne's thread through the interpretation of Life" (PL 3). The way in which Jonas enlarges our understanding of freedom is indicative of his primary argumentative strategy. He expands and reinterprets categories that are normally applied exclusively to human beings so that we can see that they identify objectively discernible modes of being characteristic of everything animate. Even inwardness, and incipient forms of self; reach down to the simplest forms of organic life. 11 Now it may seem as if Jonas is guilty of anthropomorphism, of projecting what is distinctively human onto the entire domain of living beings. He is acutely aware of this sort of objection, but he argues that even the idea of anthropomorphism must be rethought. 12 We distort Jonas's philosophy of life if we think that he is projecting human characteristics onto the nonhuman animate world. Earlier I quoted the passage in which Jonas speaks of a "third way" — "one by which the dualistic rift can be avoided and yet enough of the dualistic insight saved to uphold the humanity of man" (GEN 234). We avoid the "dualistic rift" by showing that there is genuine continuity of organic life, and that such categories as freedom, inwardness, and selfhood apply to everything that is animate. These categories designate objective modes of being. But we preserve "enough dualistic insight" when we recognize that freedom, inwardness, and selfhood manifest themselves in human beings in a distinctive manner. I do not want to suggest that Jonas is successful in carrying out this ambitious program. He is aware of the tentativeness and fallibility of his claims, but he presents us with an understanding of animate beings such that we can discern both continuity and difference.' 3 It should now be clear that Jonas is not limiting himself to a regional philosophy of the organism or a new "existential" interpretation of biological facts. His goal is nothing less than to provide a new metaphysical understanding of being, a new ontology. And he is quite explicit about this. Our reflections [are] intended to show in what sense the problem of life, and with it that of the body, ought to stand in the center of ontology and, to some extent, also of epistemology. . . The central position of the problem of life means not only that it must be accorded a decisive voice in judging any given ontology but also that any treatment of itself must summon the whole of ontology. (PL 25) The philosophical divide between Levinas and Jonas appears to be enormous. For Levinas, as long as we restrict ourselves to the horizon of Being and to ontology (no matter how broadly these are conceived), there is no place for ethics, and no answer to ethical nihilism. For Jonas, by contrast, unless we can enlarge our understanding of ontology in such a manner as would provide an objective grounding for value and purpose within nature, there is no way to answer the challenge of ethical nihilism. But despite this initial appearance of extreme opposition, there is a way of interpreting Jonas and Levinas that lessens the gap between them. In Levinasian terminology, we can say that Jonas shows that there is a way of understanding ontology and the living body that does justice to the nonreducible alterity of the other (l'autrui). 14 Still, we might ask how Jonas's "existential" interpretation of biological facts and the new ontology he is proposing can provide a metaphysical grounding for a new ethics. Jonas criticizes the philosophical prejudice that there is no place in nature for values, purposes, and ends. Just as he maintains that freedom, inwardness, and selfhood are objective modes of being, so he argues that values and ends are objective modes of being. **There is a basic value inherent in organic being, a basic affirmation, "The Yes' of Life**" (IR 81). 15 "**The self-affirmation of being becomes emphatic in the opposition of life to death. Life is the explicit confrontation of being with not-being**. . . . The 'yes' of all striving is here sharpened by the active `no' to not-being" (IR 81-2). Furthermore — and this is the crucial point for Jonas — **this affirmation of life that is in all organic being has a binding obligatory force upon human beings**. This blindly self-enacting "yes" gains obligating force in the seeing freedom of man, who as the supreme outcome of nature's purposive labor is no longer its automatic executor but, with the power obtained from knowledge, can become its destroyer as well. He must adopt the "yes" into his will and impose the "no" to not-being on his power. But precisely this transition from willing to obligation is the critical point of moral theory at which attempts at laying a foundation for it come so easily to grief. Why does now, in man, that become a duty which hitherto "being" itself took care of through all individual willings? (IR 82). We discover here the transition from is to "ought" — from the self-affirmation of life to the binding obligation of human beings to preserve life not only for the present but also for the future. But why do we need a new ethics? The subtitle of The Imperative of Responsibility — In Search of an Ethics for the Technological Age — indicates why we need a new ethics. Modern technology has transformed the nature and consequences of human ac-tion so radically that the underlying premises of traditional ethics are no longer valid. For the first time in history human beings possess the knowledge and the power to destroy life on this planet, including human life. Not only is there the new possibility of total nuclear disaster; there are the even more invidious and threatening possibilities that result from the unconstrained use of technologies that can destroy the environment required for life. The major transformation brought about by modern technology is that the consequences of our actions frequently exceed by far anything we can envision. Jonas was one of the first philosophers to warn us about the unprecedented ethical and political problems that arise with the rapid development of biotechnology. He claimed that this was happening at a time when there was an "ethical vacuum," when there did not seem to be any effective ethical principles to limit ot guide our ethical decisions. In the name of scientific and technological "progress," there is a relentless pressure to adopt a stance where virtually anything is permissible, includ-ing transforming the genetic structure of human beings, as long as it is "freely chosen." We need, Jonas argued, a new categorical imperative that might be formulated as follows: "Act so that the effects of your action are compatible with the permanence of genuine human life"; or expressed negatively: "Act so that the effects of your action are not destructive of the future possibility of such a life"; or simply: "**Do not compromise the conditions for an indefinite continuation of humanity on earth**"; or again turned positive: "In your present choices, include the future wholeness of Man among the objects of your will." (IR 11)

**Markets are key to value to life --- think brooks brothers.**

**Saunders, 08** - Social Research Director at the Centre for Independent Studies, Australasia’s leading free-market think tank. (Peter, “Why Capitalism Is Good for the Soul,” http://www.insideronline.org/archives/2008/spring/chap3.pdf)

If we want to know if capitalism is bad (or good) for the “soul,” it probably makes more sense to approach the question metaphorically rather than theologically. Approached in this way, saying something is “good for the soul” implies simply that it enhances our capacity to live a good life. On this less literal and more secular interpretation of the “soul,” capitalism fares rather well.¶ We have known since the time of Adam Smith that capitalism harnesses self-interest to generate outcomes that benefit others. This is obvious in the relationship between producers and consumers, for profits generally flow to those who anticipate what other people want and then deliver it at the least cost. But it also holds in the relationship between employers and employees. One of Karl Marx’s most mischievous legacies was to suggest that this relationship is inherently antagonistic: that for employers to make profit, they must drive wages down. In reality, workers in the advanced capitalist countries thrive when their companies increase profits. The pursuit of profit thus results in higher living standards for workers, as well as cheaper and more plen- tiful goods and services for consumers.¶ The way this has enhanced people’s capacity to lead a good life can be seen in the spectacular reduction in levels of global poverty, brought about by the spread of capitalism on a world scale. In 1820, 85 percent of the world’s population lived on today’s equivalent of less than a dollar per day. By 1950, this proportion had fallen to 50 percent. Today it is down to 20 percent. World poverty has fallen more in the last 50 years than it did in the previous 500. This dramatic reduction in human misery and despair owes nothing to aging rock stars demanding that we “make poverty history.” It is due to the spread of global capitalism.¶ Capitalism has also made it possible for many more people to live on Earth and to survive for longer than ever before. In 1900,the average life expectancy in the “less devel-oped countries” was just 30 years. By 1960,this had risen to 46 years. By 1998, it was 65years. To put this extraordinary achievement into perspective, the average life expectancy in the poorest countries at the end of the 20th century was 15 years longer than the average life expectancy in the richest country in the world—Britain—at the start of that century.¶ By perpetually raising productivity, capital-ism has not only driven down poverty rates and raised life expectancy, it has also released much of humanity from the crushing burden of physical labor, freeing us to pursue “higher” objectives instead. What Clive Hamilton airilydismisses as a “growth fetish” has resulted inone hour of work today delivering 25 times more value than it did in 1850. This has freed huge chunks of our time for leisure, art, sport, learning, and other “soul-enriching” pursuits. Despite all the exaggerated talk of an “imbalance” between work and family life, the aver-age Australian today spends a much greater¶ proportion of his or her lifetime free of work than he would had he belonged to any previous generation in history.¶ There is another sense, too, in which capitalism has freed individuals so they can pursue worthwhile lives, and that lies in its record of undermining tyrannies and dictatorships. As examples like Pinochet’s Chile and Putin’s Russia vividly demonstrate, a free economy does not guarantee a democratic polity or a society governed by the rule of law. But as Mil- ton Friedman once pointed out, these latter conditions are never found in the absence of a free economy. Historically, it was capitalism that delivered humanity from the “soul- destroying” weight of feudalism. Later, it freed millions from the dead hand of totalitarian socialism. While capitalism may not be a sufficient condition of human freedom, it is almost certainly a necessary one.

**Their epistemology is bad.**

Arthur **MOL** Environmental Sociology @ Wageningen ‘**2K** “The Environmental Movement in an Era of Ecological Modernisation” *Geoforum* 31 p. EBSCO

At the same time – and this is the concluding point I want to make – the relation between environmental victims and economic classes is far from one-sided and this should give us a cautious attitude towards generalising environmental justice ideas (both in an American and a European context). Arguing in a similar line ecological modernisation theory claims that, in contrast to earlier neo-Marxist analyses, environmental conflicts can no longer be interpreted as following predictable paths with static opposing parties and interests, and class or race biased distributional effects. Environmental struggles cross traditional (economic and other) interest lines and divisions in society and should be analysed increasingly as an independent – that is non-reducible – category. In that sense the neo-Marxist schemes claiming rather fixed parallels between conventional class inequalities and struggles and more recent environmental inequalities and struggles, might prove fruitful in individual empirical cases (such as the environmental justice movement shows us), but have increasingly lost their overall theoretical and analytical value. This is in fact the outcome of a growing number of empirical studies on environmental inequality: although on the average the poor and minorities are confronted with disproportionately high levels of local environmental risks (and even more so in the USA where segregation of class and race is more far reaching and thus the spreading of local environmental problems potentially more ‘unjust’), there exists no one-to-one relation between high environmental risks and economic categories.

### 2AC—Permutation

**Proposing alternative non-capitalist economics out of nowhere is of *zero value*. Environmental reform of capitalism is key.**

John **BARRY** Reader in Politics @ Belfast ‘**7** “Towards a model of green political economy: from ecological modernisation to economic security” Int. J. Green Economics, Vol. 1, Nos. 3/4, 2007 p. 447-448

Economic analysis has been one of the weakest and least developed areas of broadly green/sustainable development thinking. For example, whatever analysis there is within the green political canon is largely utopian – usually based on an argument for the complete transformation of modern society and economy as the only way to deal with ecological catastrophe, an often linked to a critique of the socioeconomic failings of capitalism that echoed a broadly radical Marxist/socialist or anarchist analysis; or underdeveloped – due, in part, to the need to outline and develop other aspects of green political theory. However, this gap within green thinking has recently been filled by a number of scholars, activists, think tanks, and environmental NGOs who have outlined various models of green political economy to underpin sustainable development political aims, principles and objectives. The aim of this article is to offer a draft of a realistic, but critical, version of green political economy to underpin the economic dimensions of radical views about sustainable development. It is written explicitly with a view to encouraging others to think through this aspect of sustainable development in a collaborative manner. Combined realism and radicalism marks this article, which starts with the point that we cannot build or seek to create a sustainable economy ab nihlo, but must begin from where we are, with the structures, institutions, modes of production, laws and regulations that we already have. Of course, this does not mean simply accepting these as immutable or set in stone; after all, some of the current institutions, principles and structures underpinning the dominant economic model are the very causes of unsustainable development. We do need to recognise, however, that we must work with (and ‘through’ – in the terms of the original German Green Party’s slogan of ‘marching through the institutions’) these existing structures, as well as change and reform and in some cases, abandon them as either unnecessary or positively harmful to the creation and maintenance of a sustainable economy and society. Equally, this article also recognises that an alternative economy and society must be based in the reality that most people (in the West) will not democratically vote for a completely different type of society and economy. That reality must also accept that a ‘green economy’ is one that is recognisable to most people and that indeed safeguards and guarantees not just their basic needs but also aspirations (within limits). The realistic character of the thinking behind this article accepts that consumption and materialistic lifestyles are here to stay (so long as they do not transgress any of the critical thresholds of the triple bottom line) and indeed there is little to be gained by proposing alternative economic systems, which start from a complete rejection of consumption and materialism. The appeal to realism is in part an attempt to correct the common misperception (and self-perception) of green politics and economics requiring an excessive degree of self-denial and a puritanical asceticism (Goodin, 1992, p.18; Allison, 1991, p.170–178). While rejecting the claim that green political theory calls for the complete disavowal of materialistic lifestyles, it is true that green politics does require the collective reassessment of such lifestyles, and does require a degree of shared sacrifice. It does not mean, however, that we necessarily require the complete and across-the-board rejection of materialistic lifestyles. There must be room and tolerance in a green economy for people to live ‘ungreen lives’ so long as they do not ‘harm’ others, threaten long-term ecological sustainability or create unjust levels of socioeconomic inequalities. Thus, realism in this context is in part another name for the acceptance of a broadly ‘liberal’ or ‘post-liberal’ (but certainly not anti-liberal) green perspective.1

### 2AC—Psychoanalysis

**Its non-falsifiable.**

**Samuels ’93** (Andrew, Training Analyst – Society of Analytical Psychology and Science Associate – American Academy of Psychoanalysis, Free Associtions, “The mirror and the hammer: depth psychology and political transformation”, Vol. 3D, Psychoanalytic Electronic Publishing)

The paper is about the depth psychology of political processes, focusing on processes of political change. It is a contribution to the longstanding ambition of depth psychology to develop a form of political and cultural analysis that will, in Freud's words, ‘understand the riddles of the world’. It has to be admitted that there is an equally longstanding reluctance in the non-psychological community to accept the many and varied ideas and suggestions concerning political matters that have been offered by analysts of all persuasions. I do not believe this can all be put down to resistance. **There is something offensive above reductive interpretations of complex socio-political problems in exclusively psychological terms**. The tendency to panpsychism on the part of some depth psychologists has led me to wonder if an adequate methodology and ethos actually exists with which to make an engagement of depth psychology with the public sphere possible. By ‘politics’ I mean the arrangements within a culture for the organization and distribution of power, especially economic power, and the way in which power is deployed to maintain the survival and enhance the quality of human life. Economic and political power includes control of processes of information and representation as well as the use of physical force and possession of vital resources such as land, food and water. On a more personal level, political power reflects the ability to choose freely whether to act and what action to take in a given situation. ‘Politics’ refers to the interplay between the personal and public dimensions of power. That is, there is an articulation between public, economic power and power as expressed on the personal, private level. This articulation is demonstrated in family organization, gender and race relations, and in religious and artistic assumptions as they affect the life of individuals. (I have also tried to be consistent in my use of the terms ‘culture’, ‘society’ and ‘collective’.)1 Here is an example of the difficulty with psychological reductionism to which I am referring. At a conference I attended in London in 1990, a distinguished psychoanalyst referred to the revolutionary students in Paris in 1968 as ‘functioning as a regressive group’. Now, for a large group of students to be said to regress, there must be, in the speaker's mind, some sort of normative developmental starting point for them to regress to. The social group is supposed to have a babyhood, as it were. Similarly, the speaker must have had in mind the possibility of a healthier, progressive group process — what a more mature group of revolutionary students would have looked like. **But complex social and political phenomena do not conform to the individualistic,**

**chronological, moralistic, pathologizing framework that is often imported**. The problem stems from treating the entire culture, or large chunks of it, as if it were an individual or, worse, as if it were a baby. Psychoanalysts project a version of personality development couched in judgemental terms onto a collective cultural and political process. **If we look in this manner for pathology in the culture, we will surely find it. As we are looking with a psychological theory in mind, then, lo and behold, the theory will explain the pathology.** But this is a retrospective prophecy (to use a phrase of Freud's), twenty—twenty hindsight. In this psychoanalytic **tautologizing** there is really nothing much to get excited about. Too much psychological writing on the culture, my own included, has suffered from this kind of smug ‘correctness’ when the ‘material’ proves the theoretical point. Of course it does! If we are interested in envy or greed, then we will find envy or greed in capitalistic organization. **If we set out to demonstrate the presence of archetypal patterns**, such as projection of the shadow, in geopolitical relations, then, without a doubt, **they will seem to leap out at us**. We influence what we analyse and so psychological reflection on culture and politics needs to be muted; there is not so much ‘aha!’ as one hoped.

### 2AC—Sustainability

**The alt fails---forces us to abandon the familiar for leaps of faith that are illogical.**

**Humphrey 1** (Dr. Mathew Humphrey, Reader in Political Philosophy and Deputy Director of the Center for the Study of Social and Global Justice at the University of Nottingham, Political Theory and the Environment, 2001, p. 98-100)

This is. of course, a caricature, and a fairly crude one at that. And yet. like any caricature, it does contain a grain of truth. One might even profess a certain perverse sympathy with its redescription of, and prescriptions for. our present predicament. Bui at the same time, one is bound to have grave doubts as to whether the entire human species, or a substantial portion thereof, can create and learn an entirely new moral language within the ever-diminishing time available to them. Some few might effect a Nictzschian transvaluation of values. But as Nietzsche rightly recognized, many - perhaps most - lack the resources or the will to transvalue. We might then be in the paradoxical position described long ago by the Roman historian Livy. 'In our times', Livy lamented, 'we can neither endure our faults nor the means of correcting them\* (quoted in Connolly [1988: I]). One can acknowledge that our faults are evident and legion - as I certainly do - while doubling that the means of their correction can only come through arriving at and applying a radically new ethic with a concern for nature and future generations of humans and other species at its centre. To pose my main question crudely and bluntly: What are the prospects for devising or arriving at a radically new ethic - an environmentally sensitive, earth-centred, post-humanist 'planetary' ethic? To answer it in equally blunt terms: **Not very likely**. If the fate of the earth and of future generations requires that most of us must abandon the familiar and become Buddhists or Deep Ecologists or Ecofeminists or indigenous earth-worshippers, then the earth and its future inhabitants are in very grave peril indeed. The condemnation of 'individualism' (or 'Western individualism') that is the stock-in-trade of much radical environmental discourse does of course have a point. But it also seems to me to be both self-defeating and dangerous. It is certainly true that, as Clifford Gecrtz observes, 'The Western conception of the person as a bounded, unique, more or less integrated motivational and cognitive universe, a dynamic center of awareness, emotion, judgment and action organized into a distinctive whole |is| ... a rather peculiar idea within the context of the world's cultures" [Geeriz. 1979: 229). Yet the peculiarity of this idea is hardly sufficient reason for discarding it. On the contrary, we have good reason to retain the idea of 'the individual' and sec it for what it is - a unique and morally noteworthy evolutionary achievement deserving of recognition and respect and, of course, rational criticism. Individualism, like any idea, can of course be perverted and put to destructive uses, as Tocqueville and many modern ecologically minded writers rightly remind us. But we must not forget the destruction wrought earlier during the last century by anti-individualist ideologies which gave pride of place to race, Volk, nation and other such supra-individual and collective entities - and which professed to identify with, if not worship, 'the soil' and 'nature' [Pais, J987). We had best beware of being too ready to reject 'humanism' or 'individualism' in the name of some supra-individual or post-humanist ethic. We should also beware of modeling our actions, institutions and practices on the animal kingdom or taking 'nature' as the standard or measure of value or right, or of merging ourselves into or 'identifying' with nature.3 It is one thing to respect or to 'get along with' nature [Bern; 1987], and quite another - and more insidious - thing to somehow identify with nature. The naive and too-often unargued assertions of romantic nature-worshippers notwithstanding, nature's standard would appear to be that might makes right. When 'nature takes its course', the weak perish and the strong survive. Nature is indifferent to tyranny. Justice and fairness are unknown among non-human animals (although some among the higher primates are arguably a possible if perhaps doubtful exception); they arc human inventions and achievements (albeit too often honoured in the breach). Lest we forget: there was at the turn of the last century a political perspective that purported to take its norms from 'nature'. It was called Social Darwinism. It viewed human life as a struggle for existence in which the 'fittest' survived and the 'unfit\* did not [Hawkins, 1997]. As one of its American champions proclaimed. Nature's remedies against vice are terrible. She removes the victims without pity. A drunkard in the gutter is just where he ought to be, according to the fitness and tendency of things. Nature has set up on him the process of decline and dissolution by which she removes things which have survived their usefulness [Sumner. 1883: 114]. We had therefore best beware of a too-ready recourse to 'nature' as an alternative to, or antidote for, our 'humanism\* or 'anthropoccntrism\*.Having said that, however, it is clear that we cannot continue to live as we have, without regard to the rights and interests of generations yet unborn. The fate of future people hangs upon our ability and willingness to expand and enlarge our ethical universe so as to include them as members of our moral community. But how might we gel there from here?One cannot simply create moral codes or concepts, much less an entirely 'new ethic\*, ex nlhilo. Modem conceptual historians who study the processes and mechanisms of 'conceptual change\* arc pretty much agreed on this point. If a conceptual innovation has any hope of succeeding, its proponents must satisfy two desiderata: intelligibility and legitimacy. In order to beintelligible to others, a would-be innovator must draw upon the ideas and idioms that are already available to her fellow citizens. She must practice what Walzer aptly calls 'connected social criticism\* [1987; I988\. These must, moreover, be invoked in ways that will legitimize new ways of speaking, thinking, and acting. As Qucntin Skinner notes.however revolutionary the [innovating] ideologist ... he will nevertheless be committed, once he has accepted the need to legitimate his behaviour, to attempting to show that some of the existing range of favourable evaluative-descriptive terms can somehow be applied as apt descriptions of his own apparently untoward actions. Every revolutionary is to this extent obliged to march backward into battle [Skinner. 1988: U2\.And this, of course, is precisely what Deep Ecologists and other radical environmentalists have so signally failed to do. As innovating ideologists they have been singularly inept and unsuccessful. They have engaged in a kind of disconnected social criticism that is largely unintelligible to most of their fellow citizens. And this is why Anna Bramwcll [I994\ and other critics may well be correct, if perhaps a bit premature, in announcing 'the fading of the greens' and the demise of green politics, or at any rate its more radical variants.If the greens - amongst whom I count myself - are to succeed politically, some way must be found to connect with, to use, and perchance to alter the dominant discourses, and particularly that of liberal individualism, from within. What is needed, then, is (in an older philosophical idiom) an immanent critique. Only through such a critique can conceptual innovation come about and succeed in reshaping the way we think and therefore act. Absent that, the greens arc foredoomed to fail. And the failure of the green movement will not be due to its unimportance, but to the unintelligibility and thus the perceived illegitimacy of its discourse. At or near the top of any green agenda or political programme is the need to pay conscious and articulate attention to the rights and interests of posterity and to the grounds and extent of our obligation to recognise, respect and protect them. What follows is not a systematic inquiry into what Brian Barry calls the 'mind-bending topic' of intergenerational justice [1989: 9], but a list of queries and concerns that would surely be central to such an inquiry.

**Sustainability is impossible and causes extinction. Market incentives are key.**

**Barnhizer 6** (David, Professor of Law, Cleveland State University, Waking from Sustainability's "Impossible Dream": The Decisionmaking Realities of Business and Government, 18 Geo. Int'l Envtl. L. Rev. 595, Lexis)

Medieval alchemists sought unsuccessfully to discover the process that would enable them to turn base metal into gold--assigning the name "Philosopher's Stone" to what they sought. The quest was doomed to failure. Just as a "sow's ear" cannot become a "silk purse," a base metal cannot become gold. Sustainability is impossible for the same reasons. It asks us to be something we are not, both individually and as a political and economic community. It is impossible to convert humans into the wise, selfless, and nearly omniscient creatures required to build and operate a system that incorporates sustainability. Even if it were ultimately possible (and it is not), it would take many generations to achieve and we are running out of time.¶ There is an enormous gap among what we claim we want to do, what we actually want to do, and our ability to achieve our professed goals. I admit to an absolute distrust of cheap and **easy** **proclamations of lofty ideals** and commitments to voluntary or unenforceable codes of practice. The only thing that counts is the actor's actual behavior. For most people, that behavior is shaped by self-interest determined by the opportunity to benefit or to avoid harm. In the economic arena this means that if a substantial return can be had without a high risk of significant negative consequences, the decision will be made to seek the benefit. It is the reinvention of Hardin's Tragedy of the Commons. n1¶ This essay explores the nature of human decisionmaking and motivation within critical systems. These systems include business and governmental decisionmaking with a focus on environmental and social areas of emerging crisis where the consequence of acting unwisely or failing to act wisely produces large-scale harms for both human and natural systems. The analysis begins by suggesting that nothing humans create is "sustainable." Change is inevitable and [\*597] irresistible whether styled as systemic entropy, Joseph Schumpeter's idea of a regenerative "creative destruction," or Nikolai Kondratieff's "waves" of economic and social transformation. n2¶ Business entities and governmental decisionmakers play critical roles in both causing environmental and social harms and avoiding those consequences. Some have thought that the path to avoiding harm and achieving positive benefits is to develop codes of practice that by their language promise that decisionmakers will behave in ways consistent with the principles that have come to be referred to as "sustainability." That belief is a delusion--an "impossible dream." Daniel Boorstin once asked: "Have we been doomed to make our dreams into illusions?" n3 He adds: "An illusion . . . is an image we have mistaken for reality. . . . [W]e cannot see it is not fact." n4 Albert Camus warns of the inevitability of failing to achieve unrealistic goals and the need to become more aware of the limited extent of our power to effect fundamental change. He urges that we concentrate on devising realistic strategies and behaviors that allow us to be effective in our actions. n5¶ As companies are expected to implement global codes of conduct such as the U.N. Global Compact and the Organisation for Economic Co-operation and Development's (OECD) Guidelines for Multinational Enterprises, n6 and governments [\*598] and multilateral institutions supposedly become more concerned about limiting the environmental and social impacts of business decisionmaking, it may be useful to consider actual behavior related to corporate and governmental responses to codes of practice, treaties, and even national laws. Unfortunately, business, government, and multilateral institutions have poor track records vis-a-vis conformity to such codes of practice and treaties.¶ Despite good intentions, empty dreams and platitudes may be counterproductive. This essay argues that the ideal of sustainability as introduced in the 1987 report of the Brundtland Commission and institutionalized in the form of Agenda 21 at the 1992 Rio Earth Summit is false and counterproductive. The ideal of sustainability assumes that we are almost god-like, capable of perceiving, integrating, monitoring, organizing, and controlling our world. These assumptions create an "impossible" character to the "dream" of sustainability in business and governmental decisionmaking.¶ Sustainability of the Agenda 21 kind is a utopian vision that is the enemy of the possible and the good. The problem is that while on paper we can always sketch elegant solutions that appear to have the ability to achieve a desired utopia, such solutions work "if only" everyone will come together and behave in the way laid out in the "blueprint." n7 Humans should have learned from such grand misperceptions as the French Enlightenment's failure to accurately comprehend the quality and limits of human nature or Marxism's flawed view of altruistic human motivation that the "if only" is an impossibly **utopian reordering of human nature** we will never achieve. n8¶ [\*599] A critical defect in the idea of sustainable development is that it continues the flawed assumptions about human nature and motivation that provided the foundational premises of Marxist collectivism and centralized planning authorities. n9 Such perspectives inject rigidity and bureaucracy into a system that requires monitoring, flexibility, adaptation, and accountability. But, in criticizing the failed Marxist-Leninist form of organization, my argument should not be seen as a defense of supposed free market capitalism. Like Marxism, a true free market capitalism does not really exist.¶ The factors of greed and self interest, limited human capacity, inordinate systemic complexity, and the power of large-scale driving forces beyond our ability to control lead to the unsustainability of human systems. Human self-interest is an **insurmountable barrier** that can be affected to a degree only by effective laws, the promise of significant financial or career returns, or fear of consequences. The only way to change the behavior of business and governmental decisionmakers is through the use of the "carrot" and the "stick." n10 Yet even this approach can only be achieved incrementally with limited positive effects.