# AFF EVIDENCE ROUND 6

## 2ac prolif

##### R and D directly ensures LFTR development

Lollis, 11 [October 10th, Ms. Tina, Funding for Liquid-Fluoride Thorium Reactor, Online Petition Request to the Obama Administration done via an independent third party, <http://www.thepetitionsite.com/2/Green-Energy/>]

We the undersigned petition you, the Obama Administration for a cleaner, more stable and sustainable energy source. During the years of the Johnson Administration they experimented with Molten-Salt Reactors using the natural element of Thorium, which we have have an abundance of buried in the Nevada desert. With use of the Liquid-Fluoride Thorium Reactors (LFTR), you will not only provide a cleaner, sustainable energy source to the United States, but to the world, as well. Using thorium has many advantages: -Research has already been conducted (reactor active from 1965-1969 Molten Salt Reactor Experiment). -One hundred grams of Thorium meets the current US citizen's lifetime energy needs. -LFTR 'burns' nearly all of its fuel. -Current Light Water Reactors burn only 3.4% of fuel, the rest is introduced into the waste stream. -LFTR generates much less waste. -LFTR burns existing nuclear waste as a fuel source. -The Thorium decay chain produces medical isotopes including Bi-213 (Distributed Cancers). -Thorium is abundant enough in the United States to achieve Energy Independence. -LFTR is passively safe, in a full power loss, LFTR cools naturally (No chance of meltdown via power-loss/natural disaster). -LFTR is perfect for Desalinization. -LFTR could completely replace fossil fuels as our grids energy source. -Thorium is 120x more abundant naturally than fissile uranium. -Known US Thorium reserves represent well over 500 years our current TOTAL power consumption. -Thorium fuel cycles does NOT produce weapons grade waste. -Kirk Sorenson has been invited to speak to Google about this tech multiple times. -Energy Independence has massive implications on our federal budget deficit. This, and many other benefits could be found by funding further research and development of a Thorium LFTR reactors. China, France, and other countries are currently working on this technology. It would be a great travesty to allow technology we developed 50 years ago, to be commercialized by the other great nations on this earth and fall behind with a 50 year head start. Thorium LFTR technology, is Green and Sustainable Technology. The resource is sufficiently large to be inexhaustible on a large scale time frame (500-5000 years in proven reserves per current energy usage). The resource is Green because of its lack of airborne greenhouse gasses, along with its ability to completely replace dirty fossil fuels. Kirk Sorenson projects 2-5 years for a prototype, 300-400million dollars, 5-10 years for commercial production.

##### And, the plan accelerates development

Barton, ‘9

[Charles, retired counselor, writes for Energy From Thorium, “The Liquid Fluoride Thorium Paradigm,” http://www.theoildrum.com/node/4971/]

The Obama campaign, properly in my opinion, opposed the Yucca Mountain nuclear repository. Indeed, there is a far more effective way to use the $25 billion collected from utilities over the past 40 years to deal with waste disposal. This fund should be used to develop fast reactors that consume nuclear waste, and thorium reactors to prevent the creation of new long-lived nuclear waste. By law the federal government must take responsibility for existing spent nuclear fuel, so inaction is not an option. Accelerated development of fast and thorium reactors will allow the US to fulfill its obligations to dispose of the nuclear waste, and open up a source of carbon-free energy that can last centuries, even millennia. It is commonly assumed that 4th generation nuclear power will not be ready before 2030. That is a safe assumption under "business-as-usual”. However, given high priority it is likely that it could be available sooner. It is specious to argue that R&D on 4th generation nuclear power does not deserve support because energy efficiency and renewable energies may be able to satisfy all United States electrical energy needs. Who stands ready to ensure that energy needs of China and India will be entirely met by efficiency and renewables?

**And, LFTR’s are impervious to prolif – shifting away from uranium is key**

**Martin, 12** [May 8th, Richard, A contributing editor for Wired since 2002, he has written about energy, for Time, Fortune, The Atlantic, and the Asian Wall Street Journal, editorial director for Pike Research, the leading cleantech research and analysis firm, former Technology Producer for ABCNews.com, Technology Editor for The Industry Standard (2000-2001), and Editor-at- Large for Information Week (2005-2008), recipient of the “Excellence in Feature Writing" Award from the Society for Professional Journalists and the White Award for Investigative Reporting, Educated at Yale and the University of Hong Kong, , “SuperFuel: Thorium, the Green Energy Source for the Future”, ISBN 978—0»230-116474]

IN REPORTING ON THE THORIUM POWER MOVEMENT, I heard plenty of reasons why it would never work. After a year or so I classified them into three categories: market barriers, challenges related to waste and proliferation, and what I came to call the traditionalist argument. The market-based argument is simple: the nuclear power industry has a fuel today that is abundant and inexpensive. Why should it switch to a new, relatively unproven fuel? These assumptions are faulty (uranium may well not be inexpensive and plentiful much longer—see the comments of Srikumar Banerjee, chair of India’s Atomic Energy Commission, from chapter 7). More important, this argument does not take into account the broader costs and risks of uranium-based nuclear power, which have been highlighted by the Fukushima-Daiichi accident. There’s little chance of nuclear power’s fulfilling its promise until those costs are driven down—by shifting to thorium power. The waste and proliferation issues are more complicated, and I will break them down into four elements.“ In distilled form they sum up the objections to thorium from both the nuclear establishment and antinuclear groups. 1. The use of enriched uranium or plutonium in thorium fuel to ignite the fission reaction carries proliferation risks, and U-233 is as useful as Pu-239 for making nuclear bombs. This is the central claim of those who dismiss thorium’s prospects for reducing the nuclear waste stream: Solid-fuel thorium reactors produce both U233 (the fissile daughter element of Th232) and plutonium, so what’s the difference? What’s more, thorium reactors require lowenriched uranium or plutonium to initiate the fission reaction, thus creating more material that can be refined into bombs. The kernel of truth here is that the U233 (and thus the plutonium as well) created in the transmutation of thorium is contaminated by U232, one of the nastiest isotopes in the universe. With a half-life of less than 70 years, U-232 decays into the radioisotopes bismuth-212 and thallium-208, which emit intense gamma rays that make it very, very hard to handle and transport (not to mention reprocess) and that would very likely destroy the electronics of any weapon into which they were built. Theoretically, it's possible to make a bomb with U-233, but plutonium is much easier to make and does not come with the problematic U-232. Militaries will always opt for plutonium and U235, because they can't afford to expose their personnel to the deadly risks of U232. As for terrorists, they'd be better off simply buying natural uranium on the open market and finding a way to enrich it. The United States reportedly tested bombs with U-233 cores in the late 1950s, but no country has ever included it as a material as a part of its nuclear weapons program. It's useless even for the most zealous of hypothetical suicide bombers, because they’d probably never reach their target. 2. Most proposed thorium reactors require reprocessing to separate out the U-233 for use in fresh fuel. As with conventional uranium power plants that include reprocessing, bomb-making material is separated out, making it vulnerable to theft or diversion. This is a tired canard. Never mind that every nuclear fuel cycle currently in production or contemplated generates “bomb-making material” -- this statement ignores the realities of weapons building. Most Gen IV designs described in this chapter involve fuel recycling; indeed, as the Peterson report stated, recycling is critical to the future of nuclear power. To be sure, reprocessing spent fuel rods from a solid fuel thorium reactor is not a simple matter, whether you’re making bombs or new fuel. But it’s important to note that, as with all these arguments, external reprocessing is necessary only for solid fuel reactors, not LFTRs. Alone among advanced reactor designs, LFTRs have the capacity to reprocess the fuel in the reactor building itself, while the reactor is operating. There’s no opportunity for diversion unless you raid the entire plant, shut down the reactor, and figure out a way to separate and abscond with the weaponizable isotopes. Good luck with that. 3. The claim that radioactive waste from thorium reactors creates waste that would have to be isolated from the environment for only 500 years, whereas irradiated uranium-only fuel remains dangerous for hundreds of thousands of years, is false. Thorium-based reactors create long-lived fission products like technetium-99 (its half-life is more than 200,000 years), and thorium- 232 is extremely long lived (its half-life is 14 billion years). This argument ignores the larger context. The volume of fission products from thorium-based solid fuel reactors is about a tenth of that from conventional reactors. What's more, in small amounts, many of these fission products have become common in modern life. Technetium-99, for example, is powerful stuff, worthy of respectful treatment; it’s also commonly used, in a slightly altered form, in medical imaging procedures. Millions of patients ingest it every day without significant risk. The amounts of technetium-99 produced in solid-fuel thorium reactors would be negligible; in LFTRs it would be processed off along with other fission products and largely recycled. Some geological storage will be required, but in general waste from LFTRs decays to safe, stable states within a few hundred years, far less than the millennia required for the by-products of uranium reactors. As for Th-232, it's long lived but safe. The longerlived a radioactive element is, the lower its radioactivity, with its very long half-life, Th-232 is an exceedingly weak producer of radiation. It is so common that it's found in small amounts in virtually all rock, soil, and water. You could sleep with it under your pillow and suffer no ill effects. 4. Reprocessing of thorium fuel cycles has not been successful because uranium-232 is created along with uranium-233. U-232, which has a halflife of about 70 years, is extremely radioactive and is therefore quite dangerous in small quantities. U-232 is indeed extremely radioactive, but its brief half-life means that in less than a century half of it will have decayed to a stable form. Because isotopes decay at a geometric rate (50 percent of half of the original material, or one-quarter of the original, is still radioactive after another 70 years, then one-eighth, one-sixteenth, and so on), the decrease in radioactivity drops off quickly. Many, many hazardous materials are put in storage for centuries. We do not object to them. To summarize, the most common objections to thorium power from the perspective of radioactive waste and the proliferation of nuclear weapons are inflated for solid fuel reactors, and they simply do not apply to LFTRs. That leaves the traditionalist argument, which essentially echoes Milton Shaw and the WASH-1222 report from 1972: It can’t be done because it has never been done before. When I heard this brand of defeatism, it always came from someone with a vested interest in the current nuclear power establishment. I’ll explore the traditionalist argument in more detail in the final pages of this book.

##### The plan sets an international proliferation standard – best data proves

Grae, 08 [Seth Grae, President and CEO, Thorium Power Ltd'Thorium Power can play a key role in India's nuclear industry', <http://www.ltbridge.com/assets/7.pdf>]

Why is efficient and modern nuclear fuel technology important? Modern fuel technology is vitally important because the future of nuclear power depends on the industry's ability to address the lingering concerns—proliferation, waste and operating economics. All across the world, there are hundreds of new reactors in planning or at different stages of development. But everyone acknowledges the concerns and almost everyone agrees that we can't deploy 20th century technology in order to build a 21st century industry. We need advanced nuclear fuel technology that is safe, viable and economical. The IAEA and World Nuclear Association agree that thorium is an optimal alternative to uranium fuel and there is a clear movement towards thorium fuel. Also, India has always been at the scientific and technological forefront, and India's experts understand the distinct advantages of using thorium in the nuclear fuel cycle. Thorium Power is uniquely positioned to establish a new standard in non-proliferation because we know that the promise of safe nuclear power will only be realised if and when we deploy advanced, non-proliferative fuel-based solutions.

## 2ac topicality

##### Counter interp – R&D is topical and the following laundry list

US Energy Information Administration, 1 (Renewable Energy 2000: Issues and Trends, Report prepared by the US Energy Information Administration, “Incentives, Mandates, and Government Programs for Promoting Renewable Energy”, http://tonto.eia.doe.gov/ftproot/renewables/06282000.pdf)

Over the years, incentives and mandates for renewable energy have been used to advance different energy policies, such as ensuring energy security or promoting environmentally benign energy sources. Renewable energy has beneficial attributes, such as low emissions and replenishable energy supply, that are not fully reflected in the market price. Accordingly, governments have used a variety of programs to promote renewable energy resources, technologies, and renewable-based transportation fuels.1 This paper discusses: (1) financial incentives and regulatory mandates used by Federal and State governments and Federal research and develop- ment (R&D),2, 3 and (2) their effectiveness in promoting renewables. A financial incentive is defined in this report as providing one or more of the following benefits: • A transfer of economic resources by the Government to the buyer or seller of a good or service that has the effect of reducing the price paid, or, increasing the price received, respectively; • Reducing the cost of production of the good or service; or, • Creating or expanding a market for producers. The intended effect of a financial incentive is to increase the production or consumption of the good or service over what it otherwise would have been without the incentive. Examples of financial incentives are: tax credits, production payments, trust funds, and low-cost loans. Research and development is included as a support program because its effect is to decrease cost, thus enhancing the commercial viability of the good(s) provided.4 Regulatory mandates include both actions required by legislation and regulatory agencies (Federal or State). Examples of regulatory mandates are: requiring utilities to purchase power from nonutilities and requiring the incorporation of environmental impacts and other social costs in energy planning (full cost pricing). Another example is a requirement for a minimum percentage of generation from renewable energy sources (viz., a “renewable portfolio standard,” or, RPS). Regulatory mandates and financial incentives can produce similar results, but regulatory mandates generally require no expenditures or loss of revenue by the Government.

## 2ac counterplan

##### Only congressional action solves – overcomes external resistance

Farley, 07 [Peter, “Cleaner Nuclear Power?”, <http://www.technologyreview.com/news/409099/cleaner-nuclear-power/>]

Nuclear watchdogs say that Thorium Power's technology has real potential. Moreover, they say that the legislation is needed. It would force the Department of Energy (DOE) and the Nuclear Regulatory Commission, which regulates the nuclear industry, to create new offices at the agencies to study thorium-fuel options and promote their use abroad. Advertisement http://sync.mathtag.com/sync/img?type=sync&mt_exid=20&redir=http%3a%2f%2fdis.criteo.com%2fpump%2fmatch.aspx%3fc%3d2%26uid%3d%5bMM_UUID%5d "It makes a lot of sense in my view," says Thomas Cochran, director of the nuclear program at the [Natural Resources Defense Council](http://www.nrdc.org/), in Washington. He says that congressional action is needed to overcome resistance within the DOE to exploring thorium.

##### Doesn’t solve the case – restrictions are codified in federal law – prevents the requisite licensing, means the cp fails to cause commercialization – that’s 1ac Martin

MIT, 10 [Massachusetts Institute of Technology, “Nuclear Energy Research and Development Roadmap: Report to Congress”, April 2010, http://ocw.mit.edu/courses/nuclear-engineering/22-033-nuclear-systems-design-project-fall-2011/readings/MIT22\_033F11\_read\_core\_doe.pdf]

In the United States, it is the responsibility of industry to design, construct, and operate commercial nuclear power plants. However, DOE has statutory authority under the Atomic Energy Act to promote and support nuclear energy technologies for commercial applications. In general, appropriate government roles include researching high-potential technologies beyond the investment horizon of industry and also reducing the technical risks of new technologies. In the case of new commercial reactor designs, potential areas of NE involvement could include: Enabling new technologies to be inserted into emerging and future designs by providing access to unique laboratory resources for new technology development and, where appropriate, demonstration. • Working through the laboratories and universities to provide unique expertise and facilities to industry for R&D in the areas of: o Innovative concepts and advanced technologies. o Fundamental phenomena and performance data. o Advanced modeling and simulation capabilities. APRIL 2010 22 34 NUCLEAR ENERGY RESEARCH AND DEVELOPMENT ROADMAP o New technology testing and, if appropriate, demonstration. o Advanced manufacturing methods. Representative R&D activities that support each of the roles stated above are presented below. The level of DOE investment relative to industry investment will vary across the spectrum of these activities, with a generally increasing trend in DOE investment for longer-term activities. Finally, there is potential to leverage and amplify effective U.S. R&D through collaborations with other nations through multilateral and bilateral agreements including the Generation IV International Forum, which is investigating multiple advanced reactor concepts. DOE is also a participant in OECD/NEA and IAEA initiatives that bear directly on the development and deployment of new reactor systems.

And, doesn’t solve prolif leadership - Hargraves and Wallace say only a national initiative sends a credible signal and creates barriers to use – NRC credibility is key that’s Bengelsdorf – only federal action solves nuclear cred

Fertel, 05 - Senior Vice President And Chief Nuclear Officer Nuclear Energy Institute (Marvin, CQ Congressional Testimony, “NUCLEAR POWER'S PLACE IN A NATIONAL ENERGY POLICY,” 4/28, lexis) //DH

Industry and government will be prepared to meet the demand for new emission-free baseload nuclear plants in the 2010 to 2020 time frame only through a sustained focus on the necessary programs and policies between now and then. As it has in the past, strong Congressional oversight will be necessary to ensure effective and efficient implementation of the federal government's nuclear energy programs, and to maintain America's leadership in nuclear technology development and its influence over important diplomatic initiatives like nonproliferation. Such efforts have provided a dramatic contribution to global security, as evidenced by the U.S.-Russian nonproliferation agreement to recycle weapons-grade material from Russia for use in American reactors. Currently, more than 50 percent of U.S. nuclear power plant fuel depends on converted Russian warhead material. Nowhere is continued congressional oversight more important than with DOE's program to manage the used nuclear fuel from our nuclear power plants. Continued progress toward a federal used nuclear fuel repository is necessary to support nuclear energy's vital role in a comprehensive national energy policy and to support the remediation of DOE defense sites. Since enactment of the 1982 Nuclear Waste Policy Act, DOE's federal repository program has repeatedly overcome challenges, and challenges remain before the Yucca Mountain facility can begin operation. But as we address these issues, it is important to keep the overall progress of the program in context. There is international scientific consensus that a deep geologic repository is the best solution for long-term disposition of used military and commercial nuclear power plant fuel and high-level radioactive byproducts. The Bush administration and Congress, with bipartisan support, affirmed the suitability of Yucca Mountain for a repository in 2002. Over the past three years, the Energy Department and its contractors have made considerable progress providing yet greater confirmation that this is the correct course of action and that Yucca Mountain is an appropriate site for a national repository. --During the past year, federal courts have rejected significant legal challenges by the state of Nevada and others to the Nuclear Waste Policy Act and the 2002 Yucca Mountain site suitability determination. These challenges questioned the constitutionality of the Yucca Mountain Development Act and DOE's repository system, which incorporates both natural and engineered barriers to contain radioactive material safely. In the coming year, Congress will play an essential role in keeping this program on schedule, by taking the steps necessary to provide increased funding for the project in fiscal 2006 and in future years. Meeting DOE's schedule for initial repository operation requires certainty in funding for the program. This is particularly critical in view of projected annual expenditures that will exceed $1 billion beginning in fiscal 2007. Meeting these budget requirements calls for a change in how Congress provides funds to the project from monies collected for the Nuclear Waste Fund. The history of Yucca Mountain funding is evidence that the current funding approach must be modified. Consumer fees (including interest) committed to the Nuclear Waste Fund since its f6rmation in 1983 total more than $24 billion. Consumers are projected to pay between $750 million to $800 million to the fund each year, based on electricity generated at the nation's 103 reactors. This is more than $2 million per day. Although about $8 billion has been used for the program, the balance in the fund is nearly $17 billion. In each of the past several years, there has been a gap between the annual fees paid by consumers of electricity from nuclear power plants and disbursements from the fund for use by DOE at Yucca Mountain. Since the fund was first established, billions of dollars paid by consumers of electricity from nuclear power plants to the Nuclear Waste Fund-intended solely for the federal government's used fuel program-in effect have been used to decrease budget deficits or increase surpluses. The industry believes that Congress should change the funding mechanism for Yucca Mountain so that payments to the Nuclear Waste Fund can be used only for the project and be excluded from traditional congressional budget caps. Although the program should remain subject to congressional oversight, Yucca Mountain appropriations should not compete each year for funding with unrelated programs when Congress directed a dedicated funding stream for the project. The industry also believes that it is appropriate and necessary to consider an alternative perspective on the Yucca Mountain project. This alternative would include an extended period for monitoring operation of the repository for up to 300 years after spent fuel is first placed underground. The industry believes that this approach would provide ongoing assurance and greater confidence that the repository is performing as designed, that public safety is assured, and that the environment is protected. It would also permit DOE to apply evolving innovative technologies at the repository. Through this approach, a scientific monitoring program would identify additional scientific information that can be used in repository performance models. The project then could update the models, and make modifications in design and operations as appropriate. Congressional committees like this one can help ensure that DOE does not lose sight of its responsibility for used nuclear fuel management and disposal, as stated by Congress in the Nuclear Waste Policy Act of 1982. The industry fully supports the fundamental need for a repository so that used nuclear fuel and the byproducts of the nation's nuclear weapons program are securely managed in an underground, specially designed facility. World-class science has demonstrated that Yucca Mountain is the best site for that facility. A public works project of this magnitude will inevitably face challenges. Yet, none is insurmountable. DOE and its contractors have made significant progress on the project and will continue to do so as the project enters the licensing phase. Congressional oversight also can play a key role in maintaining and encouraging the stability of the NRC's regulatory process. Such stability is essential for our 103 operating nuclear plants and equally critical in licensing new nuclear power plants. Congress played a key role several years ago in encouraging the NRC to move toward a new oversight process for the nation's nuclear plants, based on quantitative performance indicators and safety significance. Today's reactor oversight process is designed to focus industry and NRC resources on equipment, components and operational issues that have the greatest importance to, and impact on, safety. The NRC and the industry have worked hard to identify and implement realistic security requirements at nuclear power plants. In the three-and-a-half years since 9/11, the NRC has issued a series of requirements to increase security and enhance training for security programs. The industry complied-fully and rapidly. In the days and months following Sept. 11, quick action was required. Orders that implemented needed changes quickly were necessary. Now, we should return to the orderly process of regulating through regulations. The industry has spent more than $1 billion enhancing security since September 2001. We've identified and fixed vulnerabilities. Today, the industry is at the practical limit of what private industry can do to secure our facilities against the terrorist threat. NRC Chairman Nils Diaz and other commissioners have said that the industry has achieved just about everything that can be reasonably achieved by a civilian force. The industry now needs a transition period to stabilize the new security requirements. We need time to incorporate these dramatic changes into our operations and emergency planning programs and to train our employees to the high standards of our industry-and to the appropriately high expectations of the NRC. Both industry and the NRC need congressional oversight to support and encourage this kind of stability. CONCLUSION Electricity generated by America's nuclear power plants over the past half-century has played a key part in our nation's growth and prosperity. Nuclear power produces over 20 percent of the electricity used in the United States today without producing air pollution. As our energy demands continue to grow in years to come, nuclear power should play an even greater role in meeting our energy and environmental needs. The nuclear energy industry is operating its reactors safely and efficiently. The industry is striving to produce more electricity from existing plants. The industry is also developing more efficient, next-generation reactors and exploring ways to build them more cost-effectively. The public sector, including the oversight committees of the U.S. Congress, can help maintain the conditions that ensure Americans will continue to reap the benefits of our operating plants, and create the conditions that will spur investment in America's energy infrastructure, including new nuclear power plants. One important step is passage of comprehensive energy legislation that recognizes nuclear energy's contributions to meeting our growing energy demands, ensuring our nation's energy security and protecting our environment. Equally important, however, is the need to ensure effective and efficient implementation of existing laws, like the Nuclear Waste Policy Act, and to provide federal agencies with the resources and oversight necessary to discharge their statutory responsibilities in the most efficient way possible. The commercial nuclear power sector was born in the United States, and nations around the world continue to look to this nation for leadership in this technology and in the issues associated with nuclear power. Our ability to influence critical international policies in areas like nuclear nonproliferation, for example, depends on our ability to maintain a leadership role in prudent deployment, use and regulation of nuclear energy technologies here at home, in the United States, and on our ability to manage the technological and policy challenges-like waste management-that arise with all advanced technologies.

##### And, policy through the DOE is essential to create effective international norms and spur tech development

MIT, 10 [Massachusetts Institute of Technology, “Nuclear Energy Research and Development Roadmap: Report to Congress”, April 2010, http://ocw.mit.edu/courses/nuclear-engineering/22-033-nuclear-systems-design-project-fall-2011/readings/MIT22\_033F11\_read\_core\_doe.pdf]

A goal-driven, science-based approach is essential to achieving the stated objectives while exploring new technologies and seeking transformational advances. This science-based approach, depicted in Figure 1, combines theory, experimentation, and high-performance modeling and simulation to develop the fundamental understanding that will lead to new technologies. Advanced modeling and simulation tools will be used in conjunction with smaller-scale, phenomenon-specific experiments informed by theory to reduce the need for large, expensive integrated experiments. Insights gained by advanced modeling and simulation can lead to new theoretical understanding and, in turn, can improve models and experimental design. This R&D must be informed by the basic research capabilities in the DOE Office of Science (SC). NE maintains access to a broad range of facilities to support its research activities. Hot cells and test reactors are at the top of the hierarchy, followed by smaller-scale radiological facilities, specialty engineering facilities, and small non-radiological laboratories. NE employs a multi-pronged approach to having these capabilities available when needed. The core capabilities rely on DOE-owned irradiation, examination, chemical processing and waste form development facilities. These are supplemented by university capabilities ranging from research reactors to materials science laboratories. In the course of conducting this science-based R&D, viii APRIL 2010 10 NUCLEAR ENERGY RESEARCH AND DEVELOPMENT ROADMAP infrastructure needs will be evaluated and considered through the established planning and budget development processes. There is potential to leverage and amplify effective U.S. R&D through collaboration with other nations via multilateral and bilateral agreements, including the Generation IV International Forum. DOE is also a participant in Organization of Economic Cooperation and Development/Nuclear Energy Agency (OECD/NEA) and International Atomic Energy Agency (IAEA) initiatives that bear directly on the development and deployment of new reactor systems. In addition to these R&D activities, international interaction supported by NE and other government agencies will be essential in establishment of international norms and control regimes to address and mitigate proliferation concerns.

##### Only congressional r&d solves worker shortages

**Kammen, 03** - professor of nuclear engineering at Berkeley (Daniel, Federal News Service, Prepared Testimony before the House Committee on Science, 6/12, lexis) //DH

The federal government plays the pivotal role in the encouragement of innovation in the energy sector. Not only are federal funds critical, but as my work and that of others has demonstrated6, private funds generally follow areas of public sector support. One particularly useful metric although certainly not the only measure --. of the relationship between funding and innovation is based on patents. Total public sector funding and the number of patents - across all disciplines in the United States have both increased steadily over at least the past three decades (Figure 5). The situation depicted here, with steadily increasing trends for funding and results (measured imperfectly, but consistently, by patents) is not as rosy when energy R&D alone is considered. In that case the same close correlation exists, but the funding pattern has been one of decreasing resources (Figure 6A). Figure 6A shows energy funding levels (symbol: o) and patents held by the national laboratories (symbol: ). The situation need not be as bleak as it seems. During the 1980s a number of changes in U.S. patent law permitted the national laboratories to engage in patent partnerships with the private sector. This increased both the interest in developing patents, and increased the interest by the private sector in pursuing patents on energy technologies. The squares (l) in figure 6 show that overall patents in the energy sector derived. Figure 6B reveals that patent levels in the nuclear field have declined, but not only that, publicprivate partnerships have taken placed (shaded bars), but have not increased as dramatically as in energy field overall (Figure 6A). There are a number of issues here, so a simple comparison of nuclear R&D to that on for example, fuel cells, is not appropriate. But it is a valid to explore ways to increase both the diversity of the R&D. This is a particularly important message for **federal** policy. Novel approaches are needed to encourage new and innovative modes of research, teaching, and industrial innovation in the nuclear energy field. To spur innovation in nuclear science a concerted effort would be needed to increase the types and levels of cooperation by universities and industries in areas that depart significantly from the current 'Generation III+' and equally, away from the 'Generation IV' designs. Similar conclusions were reached by M. Granger Morgan, head of the Engineering and Public Policy Program at Carnegie Mellon University, in his evaluation of the need for innovative in the organization and sociology of the U. S. nuclear power industrys. A second important issue that this Committee might consider is the degree of **federal** support for nuclear fission relative to other nations. Funding levels in the U.S. are significantly lower than in both Japan and France. Far from recommending higher public sector funding, what is arguably a more successful strategy would be to increase the private sector support for nuclear R&D and student training fellowships. Importantly, this is precisely the sort of expanded publicprivate partnership that has been relatively successful in the energy sector generally. It is incorrect, however, to think that this is a process that can be left to the private sector. There are key issues that inhibit private sector innovation. As one example, many nuclear operating companies have large coal assets, and thus are unlikely to push overly hard, in areas that threaten another core business. This emphasis on industry resources used to support and expanded nuclear program - under careful public sector management - has been echoed by a variety of nuclear engineering faculty members: I believe that if you. were to survey nuclear engineering department heads, most would select a national policy to support new nuclear construction, over a policy to increase direct financial support to nuclear engineering departments. A firm commitment by the federal government, to create incentives sufficient to ensure the construction of a modest number of new nuclear plants, with the incentives reduced for subsequent plants, would be the best thing that could possibly be done for nuclear engineering education and revitalization of the national workforce for nuclear science and technology. - Professor Per Peterson, Chair, Department of Nuclear Engineering, University of California, Berkeley

##### The impact is the case

**BENGELSDORF, 07** – consultant and former director of both key State and Energy Department offices that are concerned with international nuclear and nonproliferation affair (HAROLD, “THE U.S. DOMESTIC CIVIL NUCLEAR INFRASTRUCTURE AND U.S. NONPROLIFERATION POLICY”, White Paper prepared for the American Council on Global Nuclear Competitiveness May, <http://www.nuclearcompetitiveness.org/images/COUNCIL_WHITE_PAPER_Final.pdf)//DH>

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.

##### Courts cant rule on energy production restrictions – violates ‘Political Question’ doctrine

Matthew Hall (JD, Loyola Law School, former associate attorney at a litigation firm, and was an Adjunct Professor of Law at Loyola Law School) Winter 2010 “ A Catastrophic Conundrum, But Not a Nuisance: Why the Judicial Branch is Ill-Suited to Set Emissions Restrictions on Domestic Energy Producers Through the Common Law Nuisance Doctrine” 13 Chap. L. Rev. 265, Lexis

However, the judicial branch cannot be the body which sets any sort of broad based policy on global warming. To begin with, it can be argued that Congress has already spoken on the appropriate timing for the implementation of any emissions restrictions on domestic energy producers. 13 Both houses of Congress separately urged that no emissions restrictions be agreed to absent a comprehensive global agreement by which other nations, including developing countries, agree to reduce their own emissions accordingly. 14 The theory behind such a policy would be that enacting domestic restrictions prior to completing negotiations on a global agreement would reduce the President's bargaining power in seeking emission reduction concessions from other nations. Congress likewise enacted legislation prohibiting domestic enforcement of the Kyoto Protocol on the grounds that it does not require developing nations to reduce their emissions. 15 If Congress has announced a policy of refraining from restricting domestic emissions absent a global agreement, any decision from the judiciary in contravention of this policy would be prohibited by the political question doctrine. 16 Even if Congress has yet to announce an official policy stance, the judicial branch would run afoul of the political [\*268] question doctrine should it attempt to set a broad based emissions reduction policy. The political question doctrine prohibits the judicial branch from issuing decisions which would require an "initial policy determination" of a kind not ordinarily made by the courts. 17 In order to create carbon dioxide emission restrictions, the judicial branch would be charged with making numerous value-based policy decisions. 18 These policy decisions would include whether the United States, as a nation, should commit to emissions restrictions for energy producers before a global accord is reached, and if so, the court would be required to weigh domestic economic interests against the need for emissions reductions to determine the appropriate schedule and degree of the required reductions. 19 In fact, the inordinate policy setting that would be required by a court in this context would exceed even those decisions made by courts widely accused of demonstrating unrestrained judicial activism - the New Deal era court and the Warren Court. 20 Through comparison to the "activist" decisions of these courts, it becomes apparent that judicial creation and implementation of emissions restrictions for domestic energy producers would be extraordinary action for the judicial branch to undertake. In short, the judicial branch is faced with a conundrum in its attempts to set emission standards: if it attempts to set widespread policy, it runs afoul of the political question doctrine, but it if tries to narrowly tailor emissions restrictions to a given defendant, the impact of the decision would be so slight on the consequences of global warming that the redressability prong of traditional Article III standing analysis cannot be met. As such, the only appropriate means by which to regulate carbon dioxide or other greenhouse gas emissions is through the other coordinate branches of government.

##### Court rulings link to elections – political backlash from Obama and congress overwhelms – dramatically swings popular opinion

Eric Hamilton (J.D. Candidate, Stanford Law School, 2013) August 30, 2012 “Politicizing the Supreme Court” http://www.stanfordlawreview.org/online/politicizing-supreme-court

To state the obvious, Americans do not trust the federal government, and that includes the Supreme Court. Americans believe politics played “too great a role” in the recent health care cases by a greater than two-to-one margin.[1] Only thirty-seven percent of Americans express more than some confidence in the Supreme Court.[2] Academics continue to debate how much politics actually influences the Court, but Americans are excessively skeptical. They do not know that almost half of the cases this Term were decided unanimously, and the Justices’ voting pattern split by the political party of the president to whom they owe their appointment in fewer than seven percent of cases.[3] Why the mistrust? When the Court is front-page, above-the-fold news after the rare landmark decision or during infrequent U.S. Senate confirmation proceedings, political rhetoric from the President and Congress drowns out the Court. Public perceptions of the Court are shaped by politicians’ arguments “for” or “against” the ruling or the nominee, which usually fall along partisan lines and sometimes are based on misleading premises that ignore the Court’s special, nonpolitical responsibilities.

## 2ac elections

**No spillover—otherwise Georgia would have ended the relationship**

**Blank 9** (Stephen J., Professor of Research – Strategic Studies Institute, “Prospects for US-Russian Security Cooperation”, March, http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB892.pdf)

Many might argue that this is a singularly inauspicious time to assess the prospects for U.S.- Russian security cooperation. Arguably, the prospects for bilateral cooperation lay buried under the wheels of Russia’s invasion of Georgia in August 2008. As Vice-President Richard Cheney has said to Georgian President Mikhail Saakashvili, “Russian aggression must not go unanswered,” and that “its continuation would have serious consequences for its relations with the United States.”1 Undoubtedly this invasion will have repercussions across the broad bilateral agenda, most of all insofar as regional security in the Caucasus is concerned. But ultimately, given their power, standing, and nuclear capability, dialogue and cooperation will be resumed at some point in the future. Therefore, an analysis of the prospects for and conditions favoring such cooperation is an urgent and important task that cries out for clarification precisely because current U.S.-Russian relations are so difficult. Russia, despite claims made for and against its importance, remains, by any objective standard, a key player in world affairs. It possesses this standing by virtue of its geographical location, Eurasia, its proximity to multiple centers of international tension and rivalry, its possession of a large conventional and nuclear force, its energy assets, and its seat on the UN Security Council. Beyond those attributes, it is an important barometer of trends in world politics, e.g., the course of democratization in the world. Furthermore, if Russia were so disposed, it could be the abettor and/or supporter of a host of negative trends in the world today. Indeed, some American elites might argue that it already is doing so. Even so, if U.S. policymakers and analysts see Russia more as a spoiler than as a constructive partner (whether rightly or wrongly), the fact remains that during the Cold War the Soviet Union was an active supporter of threats to world order such as international terrorism, and carried on a global arms race with the West. We negotiated productively with it on issues like arms control and proliferation.2 Today, no matter how bad Russo-American or East-West relations may be, no such threats are present or immediately discernible on the horizon.

**Give Russia war zero probability – politics, military superiority, economic concerns, and nuclear security**

**Graham 2007** (Thomas, Russia in Global Affairs, "The dialectics of strength and weakness", http://eng.globalaffairs.ru/numbers/20/1129.html, WEA)

An astute historian of Russia, Martin Malia, wrote several years ago that “Russia has at different times been demonized or divinized by Western opinion less because of her real role in Europe than because of the fears and frustrations, or hopes and aspirations, generated within European society by its own domestic problems.” Such is the case today. To be sure, mounting Western concerns about Russia are a consequence of Russian policies that appear to undermine Western interests, but they are also a reflection of declining confidence in our own abilities and the efficacy of our own policies. Ironically, this growing fear and distrust of Russia come at a time when Russia is arguably less threatening to the West, and the United States in particular, than it has been at any time since the end of the Second World War. Russia does not champion a totalitarian ideology intent on our destruction, its military poses no threat to sweep across Europe, its economic growth depends on constructive commercial relations with Europe, and its strategic arsenal – while still capable of annihilating the United States – is under more reliable control than it has been in the past fifteen years and the threat of a strategic strike approaches zero probability. Political gridlock in key Western countries, however, precludes the creativity, risk-taking, and subtlety needed to advance our interests on issues over which we are at odds with Russia while laying the basis for more constructive long-term relations with Russia.

##### Environmental issues don’t swing the election -- they’re a low priority for voters.

Bowman, 4-18-12 [Karlyn, American Enterprise Institute, “Polls on the environment, energy, global warming and nuclear power,” http://www.aei.org/papers/politics-and-public-opinion/polls/polls-on-the-environment-energy-global-warming-and-nuclear-power-april-2012/]

In this annual compilation of polling data includes six major sections on the environment, key issues and findings include: \* In most polls, President Obama is receiving positive marks on the environment. In the February 2012 AP-GfK/Roper poll, 57 percent approved but 40 percent disapproved of his handling of the issue. In the March 2012 Pew poll, ratings of his handling of energy policy were even lower: 42 percent approved and 45 percent disapproved. \* The environment is not an issue on the front burner for most Americans today. In Pew’s 2012 question about priorities for President Obama and Congress, 43 percent said “protecting the environment” should be a top priority. As a point of comparison, 86 percent said strengthening the nation’s economy should be a top priority. \* Global warming doesn’t rank at or near the top of issues people want the president and Congress to address. In January 2012, 25 percent said global warming should be a top priority, ranking at the bottom in terms of top priorities.

##### Public supports nuclear power expansion -- no safety concerns.

Bowman, 4-18-12 [Karlyn, American Enterprise Institute, “Polls on the environment, energy, global warming and nuclear power,” http://www.aei.org/papers/politics-and-public-opinion/polls/polls-on-the-environment-energy-global-warming-and-nuclear-power-april-2012/]

\* President Obama is getting low marks on his handling of gas prices. In a February 2012 AP/GfK-Roper poll, 39 percent approved of the job he is doing in this area. Significant majorities say rising gas prices have caused difficulties in their households. \* The majority of Americans still think nuclear power is safe. In a March 2012 Gallup poll, 57 percent favored using nuclear energy as one way to provide electricity for the United States. But people still wouldn’t want to build a nuclear plant in their backyard. Only 35 percent told CBS pollsters in March 2011 that they would approve of a nuclear power plant in their community, and 62 percent disapproved. \* Americans like an “all-of-the-above” energy strategy that includes more energy production, developing alternative energy sources, more conservation and nuclear power.

##### Fukashima was a blip – people forgot

Duffy 12 – MD of Ipsos MORI Social Research Institute (Bob, November 3rd, “After Fukushima Public Opinion is Still Unclear on Nuclear Power” <http://www.huffingtonpost.co.uk/bobby-duffy/fukushima-public-opinion-nuclear_b_1335016.html_>) Jacome

The tragedy at Fukushima one year ago has had a hugely varied impact on public opinion and energy policy around the world. In our polling immediately afterwards, the effect seemed likely to be significant: a quarter of those who opposed nuclear power in the 24 countries surveyed said they did so because of Fukushima.

One year on, sitting in London or New York, it's easy to think that was a blip. Our tracking surveys in the UK, for example, show that while support for nuclear power did fall in mid-2011, it has bounced back to pre-Fukushima levels, and has even been slightly strengthened.

##### Romney will win – Obama’s approval ratings are too low

**Talgo, 9/16/12 –** commentator for Neon Tommy, a Los Angeles-based news source sponsored by the Annenberg School for Communication and Journalism covering breaking news (Tyler, “Why Romney Will Win The Election” <http://www.neontommy.com/news/2012/09/why-romney-will-win-election>)

Given the post-convention polling bounces, some may give Obama the advantage at this stage of the race, although the bounces are subsiding. For example, new NBC/WSJ polls of three swing states have Obama leading Romney by 49 to 44 percent in Florida and Virginia, and by 50 to 43 percent in Ohio. However, when we take a closer look at the numbers, a different story is revealed. In the Florida and Virginia polls, Democrats were oversampled by 5 percent, and in Ohio they were oversampled by 10 percent. Not convinced? Here’s another fact: recent CBS/NYT/Quinnipiac polls oversampled Democrats by nine percent in Florida and by eight percent in Ohio. The Florida poll had Obama at 51 percent and Romney at 45 percent, and the Ohio poll had Obama at 50 percent and Romney at 44 percent; so, both leads were smaller than the oversampling gap. If you ask me, the advantage here clearly goes to Romney; and, believe me, these are not the only examples.

All of this is revealed in the context of a time in which Republicans are much more enthusiastic than Democrats. Last month the number of Americans who consider themselves Republicans was the highest ever recorded since 2002 at 37.6 percent, compared to only 33.3 percent who consider themselves Democrats.

So, assuming that all else is equal, what does it mean when a national poll says something like 47 percent for Obama and 44 percent for Romney, or vise versa? The nature of the missing 10 percent is one of the most important factors that come to play in all presidential reelection campaigns. Historically, the final results in an election are almost always worse than polling suggests for an incumbent president. If you took the undecided vote, according to Gallup, from every general election since 1964 that featured an incumbent president seeking reelection, 89 percent of it went to the president’s challenger. You can bet that the Obama camp understands that a 47-44 poll in its favor is not good news at all. This is why it’s virtually unheard-of for an incumbent president to win reelection when he's polling below 50 percent.

##### The debates and labor statistics will determine the election

**Lombardo, 9/12**/12 - Global CEO, StrategyOne (Steve, “Why This Election Comes Down to Two Days in October,” Huffington Post, http://www.huffingtonpost.com/steve-lombardo/election-monitor-why-this\_b\_1877815.html)

Several national polls released this week show that President Obama received a small but meaningful bounce after the conventions. The bounce -- in the 3-5 point range -- is within the median for convention bounces since 1964. The problem for Republicans is that Romney got no bounce from his convention. In fact, his vote share likely shrunk a point or two in the last two weeks. While the Republican convention may have strengthened Romney's position with the base, it did little to expand his coalition. The momentum from "You didn't build that" has been halted. ¶ However, we see nothing in the data yet to suggest this is anything but a dead heat. For all the hand wringing over the GOP convention and the Romney campaign they are in a dead heat with an incumbent President with 55 days to go. When you look at likely voters in key swing states, this thing is truly 50/50. ¶ Here is our take as of 12 a.m. EST: ¶ The murder of Ambassador Stevens and the unrest in Libya will thrust both candidates into the foreign policy fray. It will be very interesting to see how each handles the coming hours and days and how much the media -- and ultimately voters -- focuses on the issue.¶ Look for a higher level of advertising spend from the Romney campaign in key battleground states over the next two weeks. History has shown that the candidate who is clearly in the lead by mid to late September will likely be the winner in November. That doesn't mean things can't change in October -- they can. But sentiment will start to firm up in the next two weeks. The Romney campaign has a $60 million cash-on-hand advantage, and they should use it now. Team Obama defined Romney in the spring using their cash advantage; the Romney campaign should not wait until October. They need to change the dynamic before October 1.¶ The two biggest dates of the campaign are October 3rd and October 5th. The first debate will be held on Wednesday, October 3rd at the University of Denver at 9 p.m. EST. For three reasons this will be far and away the most important debate:¶ It is the first and therefore, unless there is a major blunder, is likely to be the one that sets the image of Romney in stone.¶ We really do not believe that the other two will matter if Romney has a poor debate performance here. Romney has to win this debate pure and simple.¶ This one is purely on domestic policy, i.e. the economy. If Romney can't win this one, he is unlikely to win the other two, barring a miscue by the President.¶ On October 5th at 8:30 a.m. EST the Bureau of Labor Statistics will release the September unemployment numbers. This will be the most impactful announcement of the campaign. If the unemployment rate goes up it could be devastating for the president's reelection chances. Similarly, if it goes down -- especially if it goes below 8 percent -- it may pretty much secure an Obama victory in November.¶

##### Gridlock inevitable with any election outcome

Curry, 9/11/12 - NBC News national affairs writer (Tom, NBC Politics, “Romney election could create new scenario for EPA and coal,” <http://nbcpolitics.nbcnews.com/_news/2012/09/11/13807749-romney-election-could-create-new-scenario-for-epa-and-coal?lite>)

Whether Mitt Romney or Barack Obama wins the presidential election, a congressional impasse in 2013 seems likely. That’s because under most conceivable election scenarios – with Romney or Obama in the White House, and with either Democrats maintaining their Senate majority, or the Republicans taking it – the minority party could use the filibuster threat to block proposals it opposed.

##### The plan is key to self-sufficient forward operating bases

Ackerman, 11 [Spencer, February 18th, Latest Pentagon Brainstorm: Nuke-Powered War Bases, Wired. Com. http://www.wired.com/dangerroom/2011/02/nuke-bases/]

Buried within Darpa’s 2012 budget request under the innocuous name of “Small Rugged Reactor Technologies” is a $10 million proposal to fuel wartime Forward Operating Bases with nuclear power. It springs from an admirable impulse: to reduce the need for troops or contractors to truck down roads littered with bombs to get power onto the base. It’s time, Darpa figures, for a “self-sufficient” FOB.¶ Only one problem. “The only known technology that has potential to address the power needs of the envisioned self-sufficient FOB,” the pitch reads, “is a nuclear-fuel reactor.” Now, bases could mitigate their energy consumption, like the [solar-powered Marine company](http://www.wired.com/dangerroom/2011/01/afghanistans-green-marines-cut-fuel-use-by-90-percent/) in Helmand Province, but that’s not enough of a game-changer for Darpa. Being self-sufficient is the goal; and that requires going nuclear; and that requires … other things.¶ To fit on a FOB, which can be anywhere from Bagram Air Field’s [eight square miles](http://www.wired.com/dangerroom/2010/08/u-s-afghan-mega-base/) to dusty collections of wooden shacks and concertina wire, the reactor would have to be “well below the scale of the smallest reactors that are being developed for domestic energy production,” Darpa acknowledges.¶ That’s not impossible, says Christine Parthemore, an energy expert at the Center for a New American Security. The Japanese and the South Africans have been working on miniature nuclear power plants for the better part of a decade; Bill Gates has [partnered with Toshiba](http://news.bbc.co.uk/2/hi/8582692.stm) to build mini-nuke sites. (Although it’s not the most auspicious sign that one prominent startup for modular reactors [suspended its operations](http://www.greentechmedia.com/articles/read/nuclear-startup-nuscale-suspends-operation/) after growing cash-light last month.) Those small sites typically use uranium enriched to about 2 percent. “It would be really, really difficult to divert the fuel” for a bomb “unless you really knew what you were doing,” Parthemore says.¶ But Darpa doesn’t want to take that chance. Only “non-proliferable fuels (i.e., fuels other than enriched uranium or plutonium) and reactor designs that are fundamentally safe will be required of reactors that may be deployed to regions where hos tile acts may compromise operations.”¶ Sensible, sure. But it limits your options: outside of uranium or plutonium, [thorium](http://www.wired.com/magazine/2009/12/ff_new_nukes/) is the only remaining source for generating nuclear fuel. The Indians and now the Chinese have experimented with thorium for their nuclear programs, but, alas, “no one has ever successfully found a way” to build a functioning thorium reactor, Parthemore says, “in a safe and economical manner.”

Solves effective peacekeeping

Mosher et al., 8 (David E., Senior Policy Analyst @ RAND, Green Warriors: Army Environmental Considerations for Contingency Operations from Planning Through Post-Conflict, RAND)

The environment may also be important during the post-conflict phase of an operation,9 or even before combat operations end. Providing clean water, managing sewage, or providing irrigation water can be important for convincing the local populace to support the U.S. mission **and not an insurgency**, according to some commanders.10 Although these are not traditional Army missions, they can have an important effect on the outcome of an operation, from both a military and a political perspective. Addressing legacy problems can also help **a new government develop legitimacy and can enable U.S. forces to withdraw from the country sooner.** Indeed, many of the goals of stability operations defined in the 2006 edition of JP 3.0, Joint Operations, can have environmental components. Operational effectiveness can be hampered by poor environmental practices or helped by good ones. Logistics requirements and costs can be reduced by good practices, for instance, applying technologies to **reduce operational requirements for petroleum, oil,** and lubricants (POL) or field water treatment systems, or reducing acute threats to soldier health. Good environmental practices can also reduce the resources that must be diverted to address environmental issues. Commanders may also want to reduce or prevent liabilities, either financial or diplomatic. Good environmental awareness and practices during contingency operations can reduce the financial liabilities the Army and the United States may face. On more than one occasion in recent operations, contractors have removed hazardous wastes from base camps and, without Army knowledge, dumped them along the side of a road or in other inappropriate locations, sometimes to avoid disposing of them properly or to sell the drums that hold the wastes. These actions have created cleanup costs for the Army that are many times higher than the original price of the contract. In other cases, the Army has had to spend large sums to remediate serious preexisting environmental contamination at base camps, expenses that could have been avoided if the base camps had been located elsewhere. Financial liabilities can also arise from claims brought by U.S. soldiers who believe they were exposed to hazardous substances, as the Army’s past experiences with Agent Orange and Gulf War Illness illustrate. 11 Members of the local populace may also bring claims against the Army for environmentally related damage, draining funds that could be more effectively used for reconstruction or stabilization activities. Inadequate attention to environmental issues can also create diplomatic liabilities. Illegal dumping by contractors and poor waste management practices by soldiers have caused immediate diplomatic problems with host nations whose support has been critical. Long-term diplomatic problems from environmental problems can also emerge years after an operation is over. Perhaps most important are the environmental issues that can affect U.S. national objectives, those strategic political and economic objectives that U.S. leaders established when they committed forces to the contingency operation in the first place. One such national objective may be winning and maintaining support of the local populace. Although environmental conditions may be poor and national environmental laws may be weak or nonexistent, our research indicates that locals often care deeply about the environment, which can be critical to their survival, livelihood, and well-being. Vital environmental issues can include access to clean drinking water, effective sewage systems, and viable farmland (see Box 1.1). Restoring or building these basic infrastructures is often essential for the economic and social development necessary for stability. To the extent that such projects improve cooperation with locals, they can lower security risks, improve intel- ligence, and speed reconstruction. National objectives that have environmental components also include preserving natural resources that have important economic value (such as oil fields or fisheries) and even preserving cultural resources that are a matter of national, regional, religious, or cultural pride. If long-term stability of a country is a mission objective, sustainability and the long-term health of nbatural systems, including watersheds, forests, ecosystems, biodiversity, and farmlands, are also important. Local customs and practices can take the place of laws, and therefore military leaders, when designing plans and conducting operations, should understand how the local people interact with their environment. The environmental components of national objectives are often seen as falling outside the normal conception of the military mission. Because they have little to do with combat operations or military objectives, they are often not taken into consideration during the Army’s planning, training, or operations. Yet ignoring these broader political objectives **can lead to failure**, as Prussian military writer Carl von Clausewitz warned.12 Thus, the environmental dimensions of national objectives should be carefully considered. The manner in which the military conducts its operations can affect environmental outcomes upon which the success of the overall mission may depend. There is some evidence that national objectives such as stabilizing societies after conflict are now being emphasized at the Army’s combat training centers, but the degree to which environmental considerations are included is unclear.

**Global nuclear war**

Dean 95 [Jonathan, former ambassador to NATO, The Bulletin of Atomic Scientists, p. google]

IN ANY EVENT, in a world of interconnecting COMMUNICATIONS AND ENVIRONMENTAL, TRADE, AND FINANCIAL LINKS, the United States, a leading industrial trading country that needs access to raw materials and markets, usually ends up paying in one way or another when a major regional conflict erupts. IN PRACTICAL TERMS, it is impossible for the United States to avoid some degree of involvement when major regional conflicts break out. FOR 200 YEARS, THE UNITED STATES HAS BEEN URGING LIBERTY, FREEDOM, DEMOCRACY, HUMAN RIGHTS, FREE MARKET VALUES, VOLUNTARY MUTUAL AID AND COLLECTIVE SECURITY ON THE OUTSIDE WORLD. THE UNITED STATES IS THE SOLE SURVIVING WORLD-CLASS POWER, WITH MILITARY STRENGTH AND GNP FAR LARGER THAN ANY OTHER COUNTRY. AS A RESULT, when large-scale conflict erupts, the United States cannot avoid being called on for help, as it was in Somalia, Bosnia, Rwanda, and Haiti. For the United States to seek to stand aside or to respond only weakly in such cases is to risk damage to its credibility AND WORLDWIDE INFLUENCE. PRESIDENT CLINTON JUSTIFIED THE NATO BOMBING OF SERBIAN POSITIONS IN BOSNIA AND THE U.S. INVASION OF HAITI BY SAYING THAT THE CREDIBILITY AND RELIABILITY OF THE U.S. WAS AT STAKE, AS IT WAS. IT IS TRUE THAT PAST ADMINISTRATIONS USED SIMILAR ARGUMENTS TO JUSTIFY CONTINUED U.S. INVOLVEMENT IN VIETNAM LONG AFTER IT WOULD HAVE BEEN WISE TO WITHDRAW. NONETHELESS, WHEN THE COLLECTIVE DISAPPOINTMENT OF WORLD OPINION OVER THE BEHAVIOR OF THE UNITED STATES (OR OF ANY MAJOR COUNTRY) BECOMES INTENSE AND ENDURING, IT BEGINS TO UNDERMINE THE INTERNATIONAL PRESTIGE AND STANDING OF THE ENTIRE NATION CONSIDERABLE DIMINUTION OF U.S. STATURE AND INFLUENCE HAS ALREADY TAKEN PLACE OVER THE PAST FOUR OR FIVE YEARS IN CONNECTION WITH FALTERING U.S. POLICIES TOWARD BOSNIA, SOMALIA, AND RWANDA. FORTUNATELY, AMERICANS ARE NOT SPARTANS, ROMANS OR PRUSSIANS-SELF-DISCIPLINED MILITARISTIC PEOPLES WHO CONSIDERED IT A MATTER OF NATIONAL PRIDE NOT TO RECOIL FROM CONFLICT BECAUSE OF CASUALTIES AMONG THEIR FORCES. HOWEVER, IF THE TRENDS CONTINUE THAT UNDERLIE THE PUBLIC OUTRAGE THAT FOLLOWED THE DEATH OF U.S. SERVICEMEN IN SOMALIA, AND U.S. ADMINISTRATIONS CONTINUE TO ABSTAIN FROM PEACEKEEPING ACTIVITIES BECAUSE THEY COULD ENTAIL CASUALTIES, THE UNITED STATES WILL NOT LONG REMAIN A WORLD POWER. If U.S. national prestige declines further under conditions like these, the U.S. capacity to constructively influence the course of events without the use of force will decrease. And when force must be used, the United States may have to use more of it to be effective. EXPERTS THROUGHOUT THE WORLD EXPECT GROWING POPULATION PRESSURES AND INCREASING ENVIRONMENTAL STRESS TO DEVELOP OVER THE COMING DECADES INTO INTENSE, FAR-REACHING SOCIAL UNREST AND REGIONAL CONFLICT. ECONOMIC DEVELOPMENT IS THE SOLUTION, HOWEVER SLOW AND UNCERTAIN IT MAY BE IN COMING. BUT the world also needs effective regional conflict-prevention procedures. Left on its own, regional violence can lead to **confrontation** and even **war between the great powers**, including the United States, AS MIGHT OCCUR, FOR EXAMPLE, in the event of conflict between Ukraine and Russia or between China and its neighbors. IN THE FINAL ANALYSIS, unchecked regional violence and the fear of further violence will lead **more states to develop nuclear weapons**. IN PAST DECADES, this process occurred in Israel, South Africa, India, Pakistan, IRAQ, and PRESUMABLY, IN North Korea. A world with 20 or 30 nuclear weapon states would not only make a more effective global security system impossible, it would lead the present nuclear weapon states to modernize and increase their weapons-and it would markedly increase the vulnerability of the United States to direct attack. Instead of SHRUGGING AT HUMAN FALLIBILITY, accepting war as inevitable, AND REACTING AFTER IT HAPPENS, U.S. policy should aim at establishing an international peacekeeping system that can head off an increasing number of conflicts. CONSEQUENCES IF THIS REASONING IS ACCEPTED, THE ADMINISTRATION SHOULD DECIDE ON AND PUBLICLY DECLARE AN EXPLICIT LONG-TERM POLICY OF JOINING WITH OTHER COUNTRIES IN SEEKING A GRADUAL LOWERING OF THE LEVEL OF ARMED CONFLICT IN THE WORLD THROUGH PREVENTING A GROWING PROPORTION OF POTENTIAL WARS AND CURTAILING WARS WHEN THEY DO OCCUR. This goal would be achieved by building an increasingly effective worldwide network of regional conflict-prevention and peacekeeping organizations headed by a more effective United Nations.

## 2ac critique

**Permute –**

##### Prefer util

Cumminsky 90 – Professor of Philosophy, Bates (David, Kantian Consequentialism, Ethics 100.3, p 601-2, p 606, jstor)

We must not obscure the issue by characterizing this type of case as the sacrifice of individuals for some abstract "social entity." It is not a question of some persons having to bear the cost for some elusive "overall social good." Instead, the question is whether some persons must bear the inescapable cost for the sake of other persons. Nozick, for example, argues that "to use a person in this way does not sufficiently respect and take account of the fact that he is a separate person, that his is the only life he has."30 Why, however, is this not equally true of all those that we do not save through our failure to act? By emphasizing solely the one who must bear the cost if we act, one fails to sufficiently respect and take account of the many other separate persons, each with only one life, who will bear the cost of our inaction. In such a situation, what would a conscientious Kantian agent, an agent motivated by the unconditional value of rational beings, choose? We have a duty to promote the conditions necessary for the existence of rational beings, but both choosing to act and choosing not to act will cost the life of a rational being. Since the basis of Kant's principle is "rational nature exists as an end-in-itself' (GMM, p. 429), the reasonable solution to such a dilemma involves promoting, insofar as one can, the conditions necessary for rational beings. If I sacrifice some for the sake of other rational beings, I do not use them arbitrarily and I do not deny the unconditional value of rational beings. **Persons** may **have "dignity**, an unconditional and incomparable value" that transcends any market value (GMM, p. 436), **but**, as rational beings, persons **also** have **a fundamental equality which dictates that some must** sometimes **give way for the sake of others.** The formula of the end-in-itself thus does not support the view that we may never force another to bear some cost in order to benefit others. If one focuses on the equal value of all rational beings, then equal consideration dictates that one sacrifice some to save many. [continues] According to Kant, the objective end of moral action is the existence of rational beings. Respect for rational beings requires that, in deciding what to do, one give appropriate practical consideration to the unconditional value of rational beings and to the conditional value of happiness. Since agent-centered constraints require a non-value-based rationale, the most natural interpretation of the demand that one give equal respect to all rational beings lead to a consequentialist normative theory. We have seen that there is no sound Kantian reason for abandoning this natural consequentialist interpretation. In particular, a consequentialist interpretation does not require sacrifices which a Kantian ought to consider unreasonable, and it does not involve doing evil so that good may come of it. It simply requires an uncompromising commitment to the equal value and equal claims of all rational beings and a recognition that, in the moral consideration of conduct, one's own subjective concerns do not have overriding importance.

##### No root cause– prefer proximate causes

**Moore, 04** [John Norton, Professor of Law at the University of Virginia He formerly served as the first Chairman of the Board of the United States Institute of Peace and as the Counselor on International Law to the Department of State, Winter, “Beyond the Democratic Peace: Solving the War Puzzle”, 44 Va. J. Int'l L. 341, Lexis Law]

If major interstate war is predominantly a product of a synergy between a potential nondemocratic aggressor and an absence of effective deterrence, what is the role of the many traditional "causes" of war? Past, and many contemporary, theories of war have focused on the role of specific disputes between nations, ethnic and religious differences, arms races, poverty and social injustice, competition for resources, incidents and accidents, greed, fear, perceptions of "honor," and many other factors. Such factors may well play a role in motivating aggression or generating fear and manipulating public opinion. The reality, however, is that while some of these factors may have more potential to contribute to war than others, there may well be an **infinite set of motivating factors**, or human wants, motivating aggression. It is not the independent existence of such motivating factors for war but rather the circumstances permitting or encouraging high-risk decisions leading to war that is the key to more effectively controlling armed conflict. And the same may also be true of democide. The early focus in the Rwanda slaughter on "ethnic conflict," as though Hutus and Tutsis had begun to slaughter each other through spontaneous combustion, distracted our attention from the reality that a nondemocratic Hutu regime had carefully planned and orchestrated a genocide against Rwandan Tutsis as well as its Hutu opponents. [n158](http://www.lexisnexis.com.proxy.lib.umich.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1329520437445&returnToKey=20_T13973620735&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.647208.6119287203#n158) Certainly if we were able to press a button and end poverty, racism, religious intolerance, injustice, and endless disputes, we would want to do so. Indeed, democratic governments must remain committed to policies that will produce a better world by all measures of human progress. The broader achievement of democracy and the rule of law will itself assist in this progress. No one, however, has yet been able to demonstrate the kind of robust correlation with any of these "traditional" causes of war that is reflected in the "democratic peace." Further, given the difficulties in overcoming many of these social problems, an approach to war exclusively dependent on their solution may **doom us to war for generations** to come.

##### Violence declining now – because of things consistent with the aff

**Pinker, 11** (11/24 Steven, Professor of Psychology at Harvard University, “Violence Vanquished: We believe our world is riddled with terror and war, but we may be living in the most peaceable era in human existence. Why brutality is declining and empathy is on the rise,” 9-24-2011, <http://online.ws> j.com/article/SB10001424053111904106704576583203589408180.html?mod=googlenews\_wsj)

On the day this article appears, you will read about a shocking act of violence. Somewhere in the world there will be a terrorist bombing, a senseless murder, a bloody insurrection. It's impossible to learn about these catastrophes without thinking, "What is the world coming to?" With all its wars, murder and genocide, history might suggest that the taste for blood is human nature. Not so, argues Harvard Prof. Steven Pinker. He talks to WSJ's Gary Rosen about the decline in violence in recent decades and his new book, "The Better Angels of Our Nature." But a better question may be, "How bad was the world in the past?" Believe it or not, the world of the past was much worse. **Violence has been in decline for thousands of years**, and today we may be living in **the most peaceable era in the existence of our species**. The decline, to be sure, has not been smooth. It has not brought violence down to zero, and it is not guaranteed to continue. But it is a persistent historical development, visible on scales from millennia to years, from the waging of wars to the spanking of children. This claim, I know, invites skepticism, incredulity, and sometimes anger. **We tend to estimate the probability of an event from the ease with which we can recall examples**, and scenes of carnage are more likely to be beamed into our homes and burned into our memories than footage of people dying of old age. There will always be enough violent deaths to fill the evening news, so **people's** **impressions of violence will be disconnected from its actual likelihood**. Evidence of our bloody history is not hard to find. Consider the genocides in the Old Testament and the crucifixions in the New, the gory mutilations in Shakespeare's tragedies and Grimm's fairy tales, the British monarchs who beheaded their relatives and the American founders who dueled with their rivals. Today the decline in these brutal practices can be quantified. A look at the numbers shows that over the course of our history, humankind has been blessed with six major declines of violence. The first was a process of pacification: the transition from the anarchy of the hunting, gathering and horticultural societies in which our species spent most of its evolutionary history to the first agricultural civilizations, with cities and governments, starting about 5,000 years ago. For centuries, social theorists like Hobbes and Rousseau speculated from their armchairs about what life was like in a "state of nature." Nowadays we can do better. Forensic archeology—a kind of "CSI: Paleolithic"—can estimate rates of violence from the proportion of skeletons in ancient sites with bashed-in skulls, decapitations or arrowheads embedded in bones. And ethnographers can tally the causes of death in tribal peoples that have recently lived outside of state control. These investigations show that, on average, about 15% of people in prestate eras died violently, compared to about 3% of the citizens of the earliest states. Tribal violence commonly subsides when a state or empire imposes control over a territory, leading to the various "paxes" (Romana, Islamica, Brittanica and so on) that are familiar to readers of history. It's not that the first kings had a benevolent interest in the welfare of their citizens. Just as a farmer tries to prevent his livestock from killing one another, so a ruler will try to keep his subjects from cycles of raiding and feuding. From his point of view, such squabbling is a dead loss—forgone opportunities to extract taxes, tributes, soldiers and slaves. The second decline of violence was a civilizing process that is best documented in Europe. Historical records show that between the late Middle Ages and the 20th century, European countries saw a 10- to 50-fold decline in their rates of homicide. The numbers are consistent with narrative histories of the brutality of life in the Middle Ages, when highwaymen made travel a risk to life and limb and dinners were commonly enlivened by dagger attacks. So many people had their noses cut off that medieval medical textbooks speculated about techniques for growing them back. Historians attribute this decline to the consolidation of a patchwork of feudal territories into large kingdoms with centralized authority and an infrastructure of commerce. Criminal justice was nationalized, and zero-sum plunder gave way to positive-sum trade. People increasingly controlled their impulses and sought to cooperate with their neighbors. The third transition, sometimes called the Humanitarian Revolution, took off with the Enlightenment. Governments and churches had long maintained order by punishing nonconformists with mutilation, torture and gruesome forms of execution, such as burning, breaking, disembowelment, impalement and sawing in half. The 18th century saw the widespread abolition of judicial torture, including the famous prohibition of "cruel and unusual punishment" in the eighth amendment of the U.S. Constitution. At the same time, many nations began to whittle down their list of capital crimes from the hundreds (including poaching, sodomy, witchcraft and counterfeiting) to just murder and treason. And a growing wave of countries abolished blood sports, dueling, witchhunts, religious persecution, absolute despotism and slavery. The fourth major transition is the respite from major interstate war that we have seen since the end of World War II. Historians sometimes refer to it as the Long Peace. Today we take it for granted that Italy and Austria will not come to blows, nor will Britain and Russia. But centuries ago, the great powers were almost always at war, and until quite recently, Western European countries tended to initiate two or three new wars every year. The cliché that the 20th century was "the most violent in history" ignores the second half of the century (and may not even be true of the first half, if one calculates violent deaths as a proportion of the world's population). Though it's tempting to attribute the Long Peace to nuclear deterrence, non-nuclear developed states have stopped fighting each other as well. Political scientists point instead to the **growth of democracy, trade and international organizations**—all of which, the **statistical evidence shows**, **reduce the likelihood of conflict**. They also credit the **rising valuation of human life** over national grandeur—a hard-won lesson of two world wars. The fifth trend, which I call the New Peace, involves war in the world as a whole, including developing nations. Since 1946, several organizations have tracked the number of armed conflicts and their human toll world-wide. The bad news is that for several decades, the decline of interstate wars was accompanied by a bulge of civil wars, as newly independent countries were led by inept governments, challenged by insurgencies and armed by the cold war superpowers. The less bad news is that civil wars tend to kill far fewer people than wars between states. And the best news is that, since the peak of the cold war in the 1970s and '80s, organized conflicts of all kinds—**civil wars, genocides, repression** by autocratic governments, terrorist attacks—**have declined throughout the world**, and their **death tolls have declined even more precipitously**. The rate of documented direct **deaths from political violence** (war, terrorism, genocide and warlord militias) **in the past decade is an unprecedented few hundredths of a percentage point**. Even if we multiplied that rate to account for unrecorded deaths and the victims of war-caused disease and famine, it would not exceed 1%. The most immediate cause of this New Peace was the demise of communism, which ended the proxy wars in the developing world stoked by the superpowers and also discredited genocidal ideologies that had justified the sacrifice of vast numbers of eggs to make a utopian omelet. Another contributor was the expansion of international peacekeeping forces, which really do keep the peace—not always, but far more often than when adversaries are left to fight to the bitter end. Finally, the postwar era has seen a cascade of "rights revolutions"—a growing revulsion against aggression on smaller scales. In the developed world, the civil rights movement obliterated lynchings and lethal pogroms, and the women's-rights movement has helped to shrink the incidence of rape and the beating and killing of wives and girlfriends. In recent decades, the movement for children's rights has significantly reduced rates of spanking, bullying, paddling in schools, and physical and sexual abuse. And the campaign for gay rights has forced governments in the developed world to repeal laws criminalizing homosexuality and has had some success in reducing hate crimes against gay people. \* \* \* \* Why has violence declined so dramatically for so long? Is it because violence has literally been bred out of us, leaving us more peaceful by nature? This seems unlikely. Evolution has a speed limit measured in generations, and many of these declines have unfolded over decades or even years. Toddlers continue to kick, bite and hit; little boys continue to play-fight; people of all ages continue to snipe and bicker, and most of them continue to harbor violent fantasies and to enjoy violent entertainment. It's more likely that human nature has always comprised inclinations toward violence and inclinations that counteract them—such as self-control, empathy, fairness and reason—what Abraham Lincoln called "the better angels of our nature." Violence has declined because historical circumstances have increasingly favored our better angels. **The most obvious of these pacifying forces has been the state, with its monopoly on the legitimate use of force**. A disinterested judiciary and police can defuse the temptation of exploitative attack, inhibit the impulse for revenge and circumvent the self-serving biases that make all parties to a dispute believe that they are on the side of the angels. We see evidence of the pacifying effects of government in the way that rates of killing declined following the expansion and consolidation of states in tribal societies and in medieval Europe. And we can watch the movie in reverse when violence erupts in zones of anarchy, such as the Wild West, failed states and neighborhoods controlled by mafias and street gangs, who can't call 911 or file a lawsuit to resolve their disputes but have to administer their own rough justice. **Another pacifying force has been commerce**, a game in which everybody can win. As technological progress allows the exchange of goods and ideas over longer distances and among larger groups of trading partners, **other people become more valuable alive than dead**. They switch from being targets of demonization and dehumanization to potential partners in reciprocal altruism. For example, though the relationship today between America and China is far from warm, we are unlikely to declare war on them or vice versa. Morality aside, they make too much of our stuff, and we owe them too much money. A third peacemaker has been cosmopolitanism—the expansion of people's parochial little worlds through literacy, mobility, education, science, history, journalism and mass media. These forms of virtual reality can prompt people to take the perspective of people unlike themselves and to expand their circle of sympathy to embrace them. These technologies have also powered an expansion of rationality and objectivity in human affairs. People are now less likely to privilege their own interests over those of others. They reflect more on the way they live and consider how they could be better off. Violence is often reframed as a problem to be solved rather than as a contest to be won. We devote ever more of our brainpower to guiding our better angels. It is probably no coincidence that the Humanitarian Revolution came on the heels of the Age of Reason and the Enlightenment, that the Long Peace and rights revolutions coincided with the electronic global village. Whatever its causes, the implications of the historical decline of violence are profound. So **much depends on** **whether we see our era as a nightmare of** crime, terrorism, **genocide and war or as a period that, in** **the light of the historical and statistical facts, is blessed by unprecedented levels of peaceful coexistence**. Bearers of good news are often advised to keep their mouths shut, lest they lull people into complacency. But this prescription may be backward. **The discovery that fewer people are victims of violence** **can thwart cynicism among compassion-fatigued news readers who might otherwise think that the dangerous parts of the world are irredeemable hell holes**. And **a better understanding of what drove the numbers down can steer us toward doing things that make people better off** rather than congratulating ourselves on how moral we are. As one becomes aware of the historical decline of violence, the world begins to look different. The past seems less innocent, the present less sinister. One starts to appreciate the small gifts of coexistence that would have seemed utopian to our ancestors: the interracial family playing in the park, the comedian who lands a zinger on the commander in chief, the countries that quietly back away from a crisis instead of escalating to war. For all the tribulations in our lives, for all the troubles that remain in the world, the decline of violence is an accomplishment that we can savor—and an impetus to cherish the forces of civilization and enlightenment that made it possible..

##### Globalized technological thought is good. Rejecting technological thought also rejects technological innovation and dooms us to extinction. This also defends our ontology

**Heaberlin, 4** – nuclear engineer, led the Nuclear Safety and Technology Applications Product Line at the Pacific Northwest National Laboratory (Scott, A Case for Nuclear-Generated Electricity, p. 31-40)

Well, then let's not do that, huh? Well, no, not hardly, because without that use of fertilizers we couldn't produce the food to feed the population. We just couldn't do it. Here are some comparisons."

If you used no fertilizers or pesticides you could get 500 kilograms of grain from a hectare in a dry climate and as much as 1000 kilograms in a humid cli­mate. If you got organic and used animal manure as fertilizer, assuming you could find enough, you might get as much as 2000 kilograms per hectare. For a sense of scale, the average in the United States, where recall we only get half the food value to hectare as the intensively farmed Chinese crop land, we get about 4500 kilograms per hectare on the average. In serious cornfields with fertilizer, irrigation, and pesticides, the value is 7000 kilograms per hectare.

Modern mechanized, chemically supported agriculture produces 7 to 14 times the food that you would get without those advantages. Even the best organic farming would produce only 30 to 45% of the food value you would get from the same sized chemically fertilized farm, and that is assuming you could get the manure you needed to make it work.

In very stark terms, without the chemically enhanced farming we would have probably something like one-fifth the food supply we have now. That means four-fifths the population would not be fed, at least as we are organized now. So, no, just giving up on fertilizers is not in the deal.

However, we could get the hydrogen and energy from sources other than natural gas. Nuclear energy could be used to provide electricity to extract hydrogen from water and produce the process heat required to combine the hydrogen and nitrogen from the air. That is just a thought to stick in your mind. While we are looking at energy use in agriculture, here are a few more numbers for you.10 If you look at the energy input into agriculture and the energy you get out, you see some interesting facts. By combining the energy used to make fertilizers and pesticides, power irrigation, and run the farm machinery in the United States, we use about 0.7 kcal of fossil fuel energy for each 1 kcal of food we make. This doesn't include the energy needed to process and transport the food. In Europe where they farm more intensely, the amount of energy out is just about the same as energy in. In Germany and Italy the numbers are 1.4 and 1.7 kcal energy input to each 1 kcal output respectively. The point is you need energy to feed people, well at least a lot of people.

Which gets us back to Cohen and his question. One of the studies he examined looked at a "self-sustaining solar energy system." For the United States, this would replace all fossil energy and provide one-fifth to one-half the current energy use. The conclusion of the study was that this would either produce" a significant reduction in our standard of living ... even if all the energy conservation measures known today were adopted" or if set at the current standard of living, "then the ideal U.S. population should be targeted at 40-100 million people." The authors of that study then cheerfully go on to point out that we do have enough fossil fuel to last a least a century, as long as we can work out the pesky environmental problems. So, you can go to a "self-sustaining" energy economy as long as you are willing to shoot between 2 out of 3 and 6 out of 7 of your neighbors.

And this is a real question. The massive use of fossil fuel driven agriculture to provide the fertilizers and pesticides, and power the farm equipment, is a) vitally important to feed everyone, and b) something we just can't keep up in a business-as-usual fashion. Sustainable means you can keep doing it. Fossil energy supplies are finite; you will run out some time. Massive use of fossil energy and the greenhouse gases they produce also may very well tip the planet into one of those extinction events in which a lot of very bad things happen to a lot of the life on the earth.

O.K. to Cohen's big question, how many people can the earth support? What it comes down to is that the "Well, it depends" answer depends on

• what quality of life you will accept,

• what level of technology you will use, and

• what level of social integration you will accept.

We have seen some of the numbers regarding quality of life. Clearly if you are willing to accept the Bangladesh diet, you can feed 1.8 times more people than if you chose the United States diet.

If you choose the back-to-nature, live like our hearty forefathers, level of technology, you can feed perhaps one-fifth as many people as you can with modern chemical fertilized agriculture. The rest have to go.

And here is the tough one. You can do a lot better, get a lot more people on the planet, if you just force a few things. Like, no more land wasted in growing grapes for wine or grains for whiskey and beer. No cropland used for tobacco. No more grain wasted on animals for meat, just grain for people. No more rich diets for the rich countries, share equally for everyone. No more trade barriers; too bad for the farmers in Japan and France, those countries would just have to accept their dependence on other countries for their food. It is easy to see that at least some of those might actually be a pretty good thing; however, the kicker is how do you get them to happen? After all, Mussolinill did make the trains run on time. How could you force these things without a totalitarian state? Are you willing to give up your ability to choose for yourself for the common good? It is not pretty, is it?

Cohen looked at all the various population estimates and concluded that most fell into the range of 4 to 16 billion. Taking the highest value when researchers offered a range, Cohen calculated a high median of 12 billion and taking the lower part of the range a low median of 7.7 billion. The good news in this is 12 billion is twice as many people as we have now. The bad news is that the projections for world population for 2050 are between 7.8 and 12.5 billion. That means we have got no more than 50 years before we exceed the nominal carrying capacity of the earth. Cohen also offers a qualifying observation by stating the "First Law of Information," which asserts that 97.6% of all statistics are made up. This helps us appreciate that application of these numbers to real life is subject to a lot of assumptions and insufficiencies in our understanding of the processes and data.

However, we can draw some insights from all of this. What it comes down to is that if you choose the fully sustainable, non-fossil fuel long-term options with only limited social integration, the various estimates Cohen looked at give you a number like 1 billion or less people that the earth can support. That means 5 out of 6 of us have got to go, plus no new babies without an offsetting death.

On the other hand, if you let technology continue to do its thing and perhaps get even better, the picture need not be so bleak. We haven't made all our farmland as productive as it can be. Remember, the Chinese get twice the food value per hectare as we do in the United States. There is also a lot of land that would become arable if we could get water to it. And, of course, in case you need to go back and check the title of this book, there are alternatives to fossil fuels to provide the energy to power that technology.

So given a positive and perhaps optimistic view of technology, we can look to some of the high technology assumption based studies from Cohen's review. From the semi-credible set of these, we can find estimates from 19 to 157 billion as the number of people the earth could support with a rough average coming in about 60 billion. This is a good time to be reminded of the First Law of Information. The middle to lower end of this range, however, might be done without wholesale social reprogramming. Hopefully we would see the improvement in the quality of life in the developing countries as they industrialize and increase their use of energy. Hopefully, also this would lead to a matching of the reduction in fertility rates that has been observed in the developed countries, which in turn would lead to an eventual balancing of the human population.

The point to all this is the near-term future of the human race depends on technology. If we turn away from technology, a very large fraction of the current and future human race will starve. If we just keep on as we are, with our current level of technology and dependence on fossil fuel resources, in the near term it will be a race between fertility decrease and our ability to feed ourselves, with, frankly, disaster the slight odds-on bet. In a slightly longer term, dependence on fossil fuels has got to lead to either social chaos or environmental disaster. There are no other end points to that road. It doesn't go anywhere else.

However, if we accept that it is technology that makes us human, that technology uniquely identifies us as the only animal that can choose its future, we can choose to live, choose to make it a better world for everyone and all life. This means more and better technology. It means more efficient technology that is kinder to the planet but also allows humans to support large numbers in a high quality of life. That road is not easy and has a number of ways to screw up. However, it is a road that can lead to a happier place, a better place.

Two Concluding Thoughts on the Case for Technology

Two more points and I will end my defense of technology. First, I want to bring you back from all the historical tour and all the numbers about population to something more directly personal. Let me ask you two questions.

What do you do for a living?

What did you have for breakfast?

Don't see any connection between these questions or of their connection to·the subject of technology? Don't worry, the point will come out shortly. I am just trying to bring the idea of technology back from this grand vision to its impact on your daily life.

Just as a wild guess, your answer to the first question was something that, say 500 years ago, didn't even exist. If we look 20,000 years ago, the only job was" get food." Even if you have a really directly socially valuable job like a medical doctor, 20,000 years ago you would have been extraneous. That is, the tribe couldn't afford you. What, no way! A doctor could save lives, surely a tribe would value such a skill. Well, sure, but the tribe could not afford taking one of their members out of the productive */I* getting the food" job for 20 years while that individual learned all those doctor skills.

If you examine the "what you do for a living" just a bit I think you will see a grand interconnectedness of all things. I personally find it pretty remarkable that we have a society that values nuclear engineers enough that I can make a living at it. Think about it. Somehow what I have done has been of enough value that, through various taxpayer and utility ratepayers, society has given me enough money for food and shelter. The tribe 20,000 years ago wouldn't have put up with me for a day.

You see, that is why we as humans are successful, wildly successful in fact. We work together. "Yeah, sure we do," you reply, " read a newspaper lately?" Well, *O.K.,* we fuss and fight a good deal and some of us do some pretty stupid and pretty mean things. But the degree of cooperation is amazing if you just step back a bit.

O.K., what did you have for breakfast: orange juice, coffee, toast, maybe some cereal and milk? Where do these things come from? Orange juice came from Florida or California. Coffee came from South America. Bread for the toast came perhaps from Kansas; cereal, from the Mid-West somewhere. The jam on the toast may have come from Oregon, or maybe Chile. Milk is probably the only thing that came from within a hundred miles of your breakfast table. Think about it. There were hundreds of people involved in your breakfast. Farmers, food-processing workers, packaging manufacturers, transportation people, energy producers, wholesale and retail people. Perhaps each one only spent a second on their personal contribution to your personal breakfast, but they touch thousands of other people's breakfasts as well. In turn, you buying the various components of your breakfast supported, in your part, all those people. They in turn, in some way or another, bought whatever you provide to society that allowed you to buy breakfast. Pretty amazing, don't you think?

Now when you look at all that, think about what ties all the planetwide interconnection, Yep, you guessed it: technology. Without technology, you get what is available within your personal reach, and what you produce is available only to those who are near enough that you can personally carry it to them on your own two feet. Technology makes our world work. It gives you personally a productive and socially valuable way to make both a living and to provide your contribution to the rest of us**.**

I want you to stop a minute and really think about that. What would your life be like without technology? Could you do what you currently do? Would anyone be able to use what you do? Would anyone pay you for that? "But I am a school teacher," you say, "of course, they would pay me!" Are you sure? Why do you need schools if there is no technology? All I need is to teach the kid how to farm and how to hunt. Sons and daughters can learn that by working in the fields along with their parents. See what I mean?

Now, I have hopefully reset your brain. Sure, you are still going to be hit with daily "technology is bad" messages. Hopefully, you are a bit more shielded against that din, and you have been given some perspective to balance that message and are prepared to see the true critical value of technology to human existence. The point is that technology is what makes us human. Without it, we are just slightly smarter monkeys.

You may feel that 6 billion of us are too many, and that may very well be. I personally don't know how to make that value decision. Which particular person does one select as being one of the excess ones?

However, the fact is that there are 6 billion of us, and it looks like we are headed for 10 to 12 billion in the next 50 years, Without not only the technology we have, but significantly better and more environmentally friendly technology, the world is going to get ugly as we approach these numbers,

On the other hand, with the right technologies we can not only support those numbers, we can do it while we close the gap between the haves and have-nots. We can make it a better place for everyone. It takes technology and the energy to drive it. Choosing technology is what we have to do to secure the evolutionary selection of us as a successful species, Remember, some pages back in discussing the unlikely evolutionary path to us, I said we are not the chosen, unless. Unless we choose us. This is what I meant. We are totally unique in all of evolutionary history. We humans have the unique ability and opportunity to choose either our evolutionary success or failure. A choice of technology gives us a chance. A choice rejecting technology dooms us as a species and gives the cockroaches the chance in our place. Nature doesn't care what survives, algae seas, dinosaurs, humans, cockroaches, or whatever is successful. If we care, we have to choose correctly.

As an aside, let me address a point of philosophy here. If any of this offends your personal theology, I offer this for your consideration. Genesis tells us God gave all the Earth to humanity and charged us with the stewardship thereof. So it is ours to use as well as we can. That insightful social philosopher Niccolo Machiavelli put it this way in 1501:

"What remains to be done must be done by you; since in order not to deprive us of our free will and such share of glory as belongs to us, God will not do everything Himself."

*O.K.,* you are saying, "I give." You have beaten the socks off me. Technology is good; technology is the identifying human trait and our only hope. But what is this stuff about choosing technology or not? Technology just happens doesn't it? I mean, technology always advances, it always has, so why the big deal?

Well, that is my last point on technology. It doesn't always just happen, and people have chosen to turn away from technology. In what might have seemed at the time to be a practical social decision, huge future implications were imposed on many generations to come. It has happened. Let me take you on one more trip through history. I think you will find it enlightening. In *Guns, Germs, and Steel,* Jared Diamond explores the question of why the European societies came to be dominate over all the other human cultures on earth. It is a fascinating story and provides a lot of insight into how modern societies evolved. In moving through history, he comes across a very odd discontinuity. He observes that if you came to earth from space in the year 1400 A.D., looked around, and went home to write your research paper on the probable future of the earth, you would clearly conclude the Chinese would run the entire planet shortly. Furthermore, you could conclude they would do it pretty darn well. If those same extraterrestrial researchers were to pop into their time machine and come back to earth in any year from say 1800 to now, they would be totally amazed to see China as a large, but relatively backward, country, struggling to catch up with their European and American peers.

To understand the significance of this, you have to go on that research trip with the extraterrestrials and look at China before 1400. In *The Lever af Riches,* Joel Mokyr dedicates one chapter looking at the comparisons of technology development in China to that in Europe. He lists the following as technology advantages China had in the centuries before 1400:

• Extensive water control projects, alternately draining and irrigating

land, significantly boosting agricultural production

• Sophisticated iron plow introduced sixth century B.C.

• Seed drills and other farm tools, introduced around 1000 *A.D.*

• Chemical and organic fertilizers and pesticides used

• Blast furnaces and casting of iron as early as 200 B.C., not known in Europe until fourteenth century

• Advanced use of power sources in textile production, not seen in Europe until the Industrial Revolution

• Invention of compass around 960 A.D.

• Major advances in maritime technology (more in a bit on this)

• Invention of paper around 100 A.D. (application as toilet paper by *590 A.D.).*

In the year 1400 AD., China was a world power, perhaps the only true world power. Their technology in agriculture, textiles, metallurgy, and maritime transportation were far in advance of any other country. They had a strong central government and a very healthy economy.

Their naval strength provides a real insight into the degree of this dominance. Dr. Diamond sends us to an extremely readable book *When China Ruled the Seas-The Treasure Fleet of the Dragon Throne 1405-1433* by Dr. Louise Levathes. Dr. Levathes takes us on an inside tour of the Chinese empire during these years. She focuses on the great treasure fleets that China set forth in these early years of the fifteenth century. In her book she has a wonderful graphic that overlays a Chinese vessel of the treasure fleet (-1410) with Columbus's *St. Maria* (1492). At 85 feet in length and three masts, the *St. Maria* is dwarfed by the nine-masted, 400-foot-long Chinese vessel.

The Chinese sailed fleets of these magnificent vessels throughout oceans of South Asia, to India, and even as far as the eastern coast of Africa. With this naval domination China claimed tribute from Japan, Korea, the nations of the Malay Archipelago, and various states within what is now India. Through both trade and the occasional application of military force, China provided an enlightened and progressive direction for all the nations within this sphere of influence. If two princes in India were fighting over a throne, it was the recognition, or lack thereof, from the Chinese emperor that decided who would rule. Setting a policy of religious inclusion and tolerance, the Chinese engaged the Arabian traders and calmed religious disputes within Asia.

With applications of power sources in textiles and advanced metallurgy, the Chinese were in the same position in 1400 as the British were in 1750, ready to launch into the Industrial Revolution. They traded with nations thousands of miles from home with vast, sophisticated shipping fleets. They were poised to extend this trade all the way to Europe and perhaps find the New World by going east instead of the European's going west in search of the rich Chinese markets.

But if we pop into that extraterrestrial time machine and drop into China in 1800, we find a technologically backward nation, humbled by a relatively small force of Europeans with "modern" military technology who wantonly imposed their will on the Chinese. The Chinese have been struggling to catch up with European and American technology ever since and so far not quite being able to do that. The domination of China by the Japanese during World War II shows how complete the turnaround was. In 1400 Japan was but one of many vassal states huddled about the feet of the Imperial Chinese throne. In 1940 the Japanese military crushed the Chinese government while marching on to control much of South Asia.

What could have happened to turn this clear champion of technology, trade, enlightened leadership with all its advantages over both its neighbors and yet-distant foreign competitors into such a weak, backward giant?

Mokyr goes through a pretty complete list of potential causes. He looks at diet, climate, and inherent philosophical mindset rejecting each as a credible actor mainly on the bases that all of these conditions were present during the period of technological and economic growth as well as the subsequent stagnation. Therefore, these were not determining factors in the turnabout. In the end he concludes, as does Diamond and Levathes, that it was just politics.

Yep, that is right. It was good, old human politics. Dr. Levathes gives us a delightful insider's view of the personalities and politics of Imperial progressions during this critical time period. To make a short story of it, the party that had been in control during the expansionist period supported the great treasure fleets, commerce with foreign nations, use and expansion of technology, and a rather harsh control of the rival party. The rival party was based on Confucian philosophy that preached a rigid, inward-looking, controlled existence.

When the Confucian party gained control of the throne, they had their opportunity to push back on the prior ruling party that had oppressed them so harshly for so long. And they did. They wanted nothing to do with foreigners; we have all we need at home, here in China, they said. The fleet was disbanded and the making of ocean-going vessels forbidden. Technology was no longer "encouraged." Again, their position was what we have is good enough, stop with all this new nonsense. Over a period of just a few years, the course of the entire nation was shifted from what would have appeared to be a bright future as the leading power in the world to a large, but relatively insignificant, backwater, rich in history and culture, but all backward looking to a former glory.

That was it. A shift in the political agenda. At the time, to the leaders in control, one that made sense. Focus at home, use what you have now, create order, discipline, control. In 50 years Japanese pirates controlled the coast of China, and the former ruler of the seas from Asia to Africa could not get out of their harbors safely.

So, you see **if the "technology is bad" message gets incorporated into too many of our daily decisions,** we can turn from our bright future into something else. The difference is that this time the stakes are much higher than they were in fifteenth century China. If we, in the developed nations, make the wrong choices, we doom all of humanity by our folly. It is not just that we miss the potential bright future, we miss the chance to avoid the combined human population growth and resources exhaustion disaster coming at us like a runaway train. Technology is the only way to prevent that train wreck. We can hear the siren's call of anti-technology, come back to nature and let the train run us down in a bloody mess, or we can try our best to use technology wisely and win free to make a better life for everyone.

##### Perm—do the plan and all non-mutually exclusive parts of the alt—if the alt solves the squo, the perm solves the link

##### Turn—only the neg forgets Being by abandoning empiricism

**Latour 2** – Professor, Paris Institute of Political Studies (Bruno, Environmentalism, ed Direk, p 303)

Who has forgotten Being? No one, no one ever has, otherwise Nature would be truly available as a pure 'stock'. Look around you: scientific objects are circulating simultaneously as subjects objects and discourse. Networks are full of Being. As for machines, they are laden with subjects and collectives. How could a being lose its difference, its incompleteness, its mark, its trace of Being? This is never in anyone's power; otherwise we should have to imagine that we have truly been modern, we should be taken in by the upper half of the modern Constitution. Has someone, however, actually forgotten Being? Yes: anyone who really thinks that Being has really been forgotten. As Levi-Strauss says, 'the barbarian is first and foremost the man who believe in barbarism.' (Levi-Strauss, [1952] 1987. p. 12). Those who have failed to undertake empirical studies of sciences, technologies, law, politics, economics, religion or fiction have lost the traces of Being that are distributed everywhere among beings. If, scorning empiricism, you opt out of the exact sciences, then the human sciences, then traditional philosophy, then the sciences of language, and you hunker down in your forest -- then you will indeed feel a tragic loss. But what is missing is you yourself, not the world! Heidegger's epigones have converted that glaring weakness into a strength. 'We don't know anything empirical, but that doesn't matter, since your world is empty of Being. We are keeping the little flame of Being safe from everything, and you, who have all the rest, have nothing.' On the contrary: we have everything, since we have Being, and beings, and we have never lost track of the difference between Being and beings. We are carrying out the impossible project undertaken by Heidegger, who believed what the modern Constitution said about itself without understanding that what is at issue there is only half of a larger mechanism which has never abandoned the old anthropological matrix. **No one can forget Being, since there has never been a modern world**, or, by the same token, metaphysics. We have always remained pre-Socratic, pre-Cartesian, pre-Kantian, pre-Nietzschean. No radical revolution can separate us from these pasts, so there is no need for reactionary counter-revolutions to lead us back to what has never been abandoned. Yes, Heraclitus is a surer guide than Heidegger: 'Einai gar kai entautha theous.'

##### External events—like natural catastrophes—that threaten our existence also threaten the being-ness of Dasein

**Svenaeus 10**—Centre for Studies in Practical Knowledge, Department of Philosophy, Södertörn University (Fredrik, 24 November 2010, “Illness as unhomelike being-in-the-world: Heidegger and the phenomenology of medicine,” *Medicine, Health Care and Philosophy*, Springer, RBatra) \*\*\*First paragraph is quoting Heidegger’s *Being and Time*

If we adhere to this interpretation of the concept of ‘meaning’, that is in principle ontological-existential [that is – phenomenological], all beings whose mode of being is unlike Dasein must be understood as unmeaningful (unsinnig), as essentially bare of meaning as such. ‘Unmeaningful’ does not mean here a value judgment, but expresses an ontological determination. And only what is unmeaningful (unsinnig) can be absurd (widersinnig). Objectively present things encountered through Dasein [in its being-in-the-world] can, so to speak, run against its being, for example, events of nature which break in on us **and destroy us**. (1996, pp. 151–152, translation altered)

What I would like to focus on here is the very meaninglessness suffered by human Dasein when it encounters something that is not only unmeaningful (unsinnig), but also absurd (widersinnig). The example given by Heidegger is the encountering of “events of nature which break in on us and destroy us”. I think what he has in mind here is something like a catastrophe of nature—an earthquake or a tornado—but would it not also hold for a disease? A disease, at least a severe one, is indeed something which breaks in on us and destroys us. Such phenomena, according to Heidegger, resist meaning; they are even an offense to our attempts to find a place for them in our life as a meaningful whole. They strike against us as something totally unfamiliar, which threatens our existence.

Now, it could be said that there is a way of making sense of diseases, namely, the explanation of their causes by science, which can also lead to ways of interfering with the disease and curing the person who has been affected by it. The same could possibly be said about tornados and earthquakes to the extent that it is possible to predict and guard oneself against them with the help of meteorology, geology, and construction technology. But this way of dealing with the absurd and strange, making the phenomena in question unmeaningful rather than absurd, in the terminology of Heidegger, does not mean that the phenomena in question easily find a place in the everyday world of Dasein. They are still **a source of meaninglessness** on the everyday level, since they are hard to incorporate into the totality of relevance that constitutes the meaningfulness of human being. **They are a threat to the homelike being-in-the-world of Dasein in their radical and dreadful otherness.**

##### No link—we’ve already conducted ontological examination and determined that realism is the best ontology to stop conflict

##### No internal link between their link evidence and their impact evidence—there is a logical gap between standing reserve and extinction

##### Extinction turns the alternative

**Reilly 8**—26 year career in politics during which he founded the nation’s largest political consulting firm of its time. Reilly managed winning campaigns for a wide variety of high-profile candidates, including current Pelosi(Clint, “From Heidegger to the Environment: Californians Are in the World,” 19 August 2008, http://www.californiaprogressreport.com/2008/08/from\_heidegger.html,)

Even in today’s age of cutting-edge science and technology, it is important to remember that history can still be shaped by big ideas. In the 18th century, a philosophy of knowledge emboldened the Founding Fathers to build our democracy – a system of government based on the meritocracy of ideas, rights of the individual and a free press. Capitalism itself is rooted in an innate belief in the power of individual initiative rather than the supremacy of group action – which inspired Marxism and Communism. Philosophy can be mind numbingly boring. But it can help us more clearly see the path to a better world. The mid-20th century German philosopher Martin Heidegger had a favorite term, “Dasein,” which cannot be translated precisely into a single English word. The rough meaning is “being-in-the-world,” Heidegger’s description of human existence. Heidegger’s most important point was that it is impossible to separate a person from the earth. Without the “world,” a human being could not know, grow or even live. A person is like a tree planted in the earth; without the earth, the tree could not exist. But there is a second implication to Heidegger’s “being-in-the-world” bumper sticker. To be in the world is also to be “in common with other beings.” Whether we like it or not, we live in a natural state of dependence upon one another. Put another way, it is impossible to accurately define existence without affirming our dependence not only upon the earth, but also upon our fellow human beings. Was the German philosopher, who lived through World War II without standing up to Nazism’s atrocities, a closet environmentalist and a globalist before his time? Why is this somewhat obvious definition of human existence important to our world today? Many theories of human progress are rooted in a moral imperative. The Christian practice of charity is premised on the religious conviction that we are all God’s children and equal members of the human family. Therefore we are obligated to donate, assist and help others in need. Christians are also challenged to respect nature as God’s creation. This implies that charity and environmentalism are a sacrifice rather than a reflection of our collective self-interest. The truth is exactly the opposite. Protecting the earth and uniting the planet is the only logical political agenda of Dasein. In Jeffrey Sachs’ 2008 book “Common Wealth,” he argues that “the defining challenge of the 21st century will be to face the reality that humanity shares a common fate on a crowded planet.” Sachs, director of Columbia University’s Earth Institute, cites four imperatives for world leaders to address: 1) Pressure on the earth’s ecosystems will produce climate change and species extinction. 2) Population growth will tax the earth. 3) The unequal distribution of wealth across the world is untenable. 4) Failed institutions impair vital global cooperation and problem solving. Last week, Russia invaded Georgia, sparking fears of a reconstituted cold war. The assault belied the presumption that the world was moving beyond nationalism. Fundamental conflicts between Islamic and Western cultures still dominate global politics. Despite a growing consensus on the need for international efforts to curb emissions and develop clean energy, the earth still reels from pollution. Poverty and sickness in sub-Saharan Africa contradict the image of a world that has conquered disease and hunger. And thousands of nuclear bombs still have the unthinkable power to destroy the earth and the entire human race. Those who thought that war and hunger would be easily conquered by science are slowly realizing that our toughest challenges are ahead. Perhaps we need to be reminded of Heidegger’s truth: **No “world,” no “being,”** no “we,” no “I.”

##### The alternative doesn’t solve

**Riis 11**—Carlsberg Research Fellow and Assistant Professor of Philosophy and Science Studies at Roskilde University, Ph.D. from Albert-Ludwigs-Universität Freiburg (Søren, 8 February 2011, “Towards the origin of modern technology: reconfiguring Martin Heidegger’s thinking,” RBatra)

Moreover, Heidegger maintains: ‘‘Readiness-to-hand is the way in which entities as they are ‘in themselves’ are defined ontologico-categorially.’’47 According to Heidegger’s fundamental phenomenology, which he unfolds in detail in Being and Time and reaffirms a decisive part of in ‘‘The Question Concerning Technology,’’ nature is ‘‘primally’’ revealed in its ‘‘usability’’ and ‘‘serviceability-for-;’’ that is to say, **‘‘**nature’’ is a resource long before the actual rise of modern and ancient technology, namely simultaneously with the very origin of human beings**.** That something is primordially revealed in its ‘‘usability’’ and ‘‘serviceability-for-’’ does not imply that it is actually used or serves accordingly, but that it is revealed as standing ready to be utilized in the corresponding context. As such, it is revealed as ‘‘standing-reserve.’’ This, for example, also corresponds to the empirical fact that prehistoric humans settled close to woods and rivers. In these areas they always had stockpiles of timber, power for transportation, and easy access to drinking water. Based on ‘‘The Question Concerning Technology’’ and completed through references to Being and Time, we now have an interpretation of the origin of the essence of modern technology, which traces back the characteristic revealing of das Gestell to the beginning of humankind.48 This does not imply that prehistoric technology is identical with contemporary technology; rather the third genealogy of the rule of das Gestell suggests that **when ‘‘we still more primally’’ try to consider the origin of the challenging revealing characterizing the rule of das Gestell, we in fact rediscover that it is connected to being human**. The rule of das Gestell has challenged humans as long as they have existed. In this sense, **humans** **first and foremost exist under the rule of das Gestell**.49 This also entails a revision and precision of Heidegger’s renowned formula characterizing the world-connectedness of human existence: being-in-the-world. Based on the comparison of ‘‘The Question Concerning Technology’’ and Being and Time, human existence is better described as being-under-the-spell-of-das-Gestell. Trying to understand the various more-or-less explicit accounts of the origin of the rule of das Gestell in ‘‘The Question Concerning Technology’’ and the resulting ambiguity is not just an exercise, nor only a way to criticize Heidegger. Rather, it is a way to better understand the nuances and layers in Heidegger’s thinking concerning technology and to warn against a short-sighted ‘‘saving’’ from an alleged danger. If the challenging revealing of nature, which characterizes the rule of das Gestell is taken seriously, then **we cannot avoid it just by revolutionizing our technology, instead, we must revise our very human existence.**

##### Preventing nuclear war precedes ontology

**Santoni** **85** - Maria Theresa Barney Chair Emeritus of Philosophy at Denison University (Ronald, “Nuclear War: Philosophical Perspectives” p 156-157)

To be sure, Fox sees the need for our undergoing “certain fundamental changes” in our “thinking, beliefs, attitudes, values” and Zimmerman calls for a “paradigm shift” in our thinking about ourselves, other, and the Earth. But it is not clear that what either offers as suggestions for what we can, must, or should do in the face of a runaway arms race are sufficient to “wind down” the arms race before it leads to omnicide. In spite of the importance of Fox’s analysis and reminders it is not clear that “admitting our (nuclear) fear and anxiety” to ourselves and “identifying the mechanisms that dull or mask our emotional and other responses” represent much more than examples of basic, often. stated principles of psychotherapy. Being aware of the psychological maneuvers that keep us numb to nuclear reality may well be the road to transcending them but it must only be a “first step” (as Fox acknowledges), during which we Simultaneously act to eliminate nuclear threats, break our complicity with the ams race, get rid of arsenals of genocidal weaponry, and create conditions for international goodwill, mutual trust, and creative interdependence. Similarly, in respect to Zimmerman: in spite of the challenging Heideggerian insights he brings out regarding what motivates the arms race, many questions may be raised about his prescribed “solutions.” Given our need for a paradigm shift in our (distorted) understanding of ourselves and the rest of being, are we merely left “to prepare for a possible shift in our self-understanding? (italics mine)? Is this all we can do? Is it necessarily the case that such a shift “cannot come as a result of our own will?” – and work – but only from “a destiny outside our control?” Does this mean we leave to God the matter of bringing about a paradigm shift? Granted our fears and the importance of not being controlled by fears, as well as our “anthropocentric leanings,” should we be as cautious as Zimmerman suggests about out disposition “to want to do something” or “to act decisively in the face of the current threat?” In spite of the importance of our taking on the anxiety of our finitude and our present limitation, does it follow that “we should be willing for the worst (i.e. an all-out nuclear war) to occur”? Zimmerman wrongly, I contend, equates “resistance” with “denial” when he says that “as long as we resist and deny the possibility of nuclear war, that possibility will persist and grow stronger.” He also wrongly perceives “resistance” as presupposing a clinging to the “order of things that now prevails.” Resistance connotes opposing, and striving to defeat a prevailing state of affairs that would allow or encourage the “worst to occur.” I submit, against Zimmerman, that we should not, in any sense, be willing for nuclear war or omnicide to occur. (This is not to suggest that we should be numb to the possibility of its occurrence.) Despite Zimmerman’s elaborations and refinements his Heideggerian notion of “letting beings be” continues to be too permissive in this regard. In my judgment, an individual’s decision not to act against and resist his or her government’s preparations for nuclear holocaust is, as I have argued elsewhere, to be an early accomplice to the most horrendous crime against life imaginable – its annihilation. The Nuremburg tradition calls not only for a new way of thinking, a “new internationalism” in which we all become co-nurturers of the whole planet, but for resolute actions that will sever our complicity with nuclear criminality and the genocidal arms race, and work to achieve a future which we can no longer assume. We must not only “come face to face with the unthinkable in image and thought” (Fox) but must act now - with a “new consciousness” and conscience - to prevent the unthinkable, by cleansing the earth of nuclear weaponry. Only when that is achieved will ultimate violence be removed as the final arbiter of our planet’s fate.

## 1ar case

**Trends prove hegemony is good – collapse is historically disastrous**

**Kagan, 12** [2/7/12, Robert, The World America Made, Master Harvard, Ph.D American U, Columnist for the Washington Post, listed a top 100 public intellectual, p. Amazon Kindle]

IN THE FRANK CAPRA classic It’s a Wonderful Life, George Bailey gets a chance to see what his world would have looked like had he never been born. It would be nice if we could do the same for the United States, to see what the world would have looked like had the United States not been the preeminent power shaping it for the past six decades, and to imagine what the world might look like if America were to decline, as so many nowadays predict. We take a lot for granted about the way the world looks today—the widespread freedom, the unprecedented global prosperity (even despite the current economic crisis), and the absence of war among great powers. In 1941 there were only a dozen democracies in the world. Today there are over a hundred. For four centuries prior to 1950, global gross domestic product (GDP) rose by less than 1 percent a year. Since 1950 it has risen by an average of 4 percent a year, and billions of people have been lifted out of poverty. The first half of the twentieth century saw the two most destructive wars in the history of mankind, and in prior centuries war among great powers was almost constant. But for the past sixty years no great powers have gone to war with one another. Our era is best known for the war that never happened, between the United States and the Soviet Union.1 There’s plenty wrong with our world, of course, but from the perspective of thousands of years of recorded history, in which war, despotism, and poverty have been the norm, and peace, democracy, and prosperity the rare exceptions, our own era has been a golden age. Some believe this is the inevitable result of human progress, a combination of advancing science and technology, an increasingly global economy, strengthening international institutions, evolving “norms” of international behavior, and the gradual but inevitable triumph of liberal democracy over other forms of government—forces of change that transcend the actions of men and nations. But there is also another possibility. Perhaps the progress we enjoy was not an inevitable evolution of the human species but rather the product of a unique and perhaps fleeting set of circumstances: a particular arrangement of power in the international system that favors a certain worldview over others. Maybe if those conditions were to change, if power were to shift, then the characteristics of the world order would change, too. Perhaps democracy has spread to over a hundred nations since 1950 not simply because democracy. Perhaps the stunning global economic growth of the past six decades reflects an economic order shaped by the world’s leading free-market economy. Perhaps the era of peace we have known has something to do with the enormous power wielded by one nation. History shows that world orders, including our own, are transient. They rise and fall. And the institutions they erected, the beliefs that guided them, and the “norms” that shaped the relations among nations within them—they fall, too. Every international order in history has reflected the beliefs and interests of its strongest powers, and every international order has changed when power shifted to others with different beliefs and interests. On some occasions, the prevailing world order has simply collapsed into disorder. When the Roman Empire fell, the order it supported fell, too. Not just Roman government and law but an entire economic system stretching from northern Europe to North Africa was disrupted and would take centuries to rebuild. Culture, the arts, even progress in science and technology, were set back for centuries. People lost the recipe for cement. We saw a similar collapse of world order in our own time. The world we know today was erected amid the chaos and destruction following World War II and the collapse of the European-dominated order that had evolved over four centuries. That order was far from perfect: it produced many wars, an aggressive imperialism, and the widespread oppression of nonwhite races, but it also produced the conditions for an era of great human advances. By the late nineteenth century British control of the seas and the balance of great powers on the European continent together had provided the relative security and stability to allow a growth in prosperity, a modest if tenuous expansion of personal freedoms, and a world knit closer by the revolutions in commerce and communication we today call globalization. It kept peace among the great powers for almost four decades after the Napoleonic Wars, and for another four decades after the wars of German unification. It was so successful that many concluded at the dawn of the twentieth century that mankind had reached a summit of evolution and that major war and tyranny had become obsolete. Yet with the outbreak of World War I, the age of settled peace and advancing liberalism—of European civilization approaching its pinnacle—collapsed into an age of hyper-nationalism, despotism, and economic calamity. The once promising spread of democracy and liberalism halted and then reversed course, leaving a handful of outnumbered and besieged democracies living nervously in the shadow of their newly fascist and totalitarian neighbors. Suddenly it was a world filled the end of the era of American preeminence need not mean the end of the present liberal international order. The expectation, if not assumption, is that the good qualities of that order—the democracy, the prosperity, the peace among great powers—can transcend the decline of American power and influence. Even with diminished American power, the political scientist G. John Ikenberry writes, “the underlying foundations of the liberal international order will survive and thrive.”2 And there is an accompanying view that American decline is in any case already a fact of life, so whether it is a good thing or a bad thing, there is nothing we can do about it. Against this backdrop, it is worth exploring to what degree the present world order depends on American power and its unique qualities. What would it mean for the future if the international order were no longer shaped primarily by the United States and like-minded allied nations? Who or what would take America’s place? And there is another set of questions, equally important: Is America really in decline? Or are Americans in danger of committing preemptive superpower suicide out of a misplaced fear of declining power?

**Primacy is the lynchpin of Asian stability—decline risks nuclear war, deterrence breakdowns, and prolif**

**Lieber 2005** – PhD from Harvard, Professor of Government and International Affairs at Georgetown, former consultant to the State Department and for National Intelligence Estimates (Robert, “The American Era”, page 158, WEA)

Parallels between America’s role in East Asia and its involvements in Europe might seem far-fetched. Asia’s geography and history are enormously different, there is no regional organization in any way comparable to the European Union, the area is not a zone of peace, conflict among its leading states remains a potential risk, and there is nothing remotely resembling NATO as a formal multilateral alliance binding the United States to the region’s security and the regional states to one another. Yet, as in Europe, **the United States plays a unique stabilizing role in Asia that no other country or organization is capable of playing**. Far from being a source of tension or instability, this presence tends to reduce competition among regional powers and to deter armed conflict. Disengagement, as urged by some critics of American primacy, would probably lead to more dangerous competition or power-balancing among the principal countries of Asia as well as to a more unstable security environment and the spread of nuclear weapons. As a consequence, even China acquiesces in America’s regional role despite the fact that it is the one country with the long-term potential to emerge as a true major power competitor.

**Heg key to solve India-Pakistan conflict**

**Goh** Chok, Senior Minister of Singapore, International Institute for Strategic Studies, June 4, **2004** (http://www.iiss.org/conferences/the-shangri-la-dialogue/shangri-la-dialogue-2005/2004-speech-archive/keynote-address-prime-minister-goh-chok-tong)

In Asia, as in Europe, unease with America’s overwhelming global dominance is high. But Asia is more keenly aware than Europe of the vital role that the US plays in maintaining global stability. No matter what their misgivings, only a few Asian countries, and certainly  no major US ally, opposed the US on Iraq. There is a clearer appreciation in Asia than in Europe that the fundamental issue in Iraq now is the credibility and resolve of the US. This is because Asia still faces many serious security challenges. Kashmir, North Korea and cross-strait relations between Beijing and Taipei are potential flashpoints. If things go terribly wrong, the conflicts could even turn nuclear. The US is **central** to the management of all three potential flashpoints. All three conflicts also have a direct impact on the global struggle against terrorism. Let me conclude therefore with a few words on each. Potential Flashpoints in Asia The India-Pakistan dispute over Kashmir is a longstanding one, difficult to resolve because of religion and history. If a conflict breaks out, it is not difficult to imagine Kashmir becoming a new theatre for jihad and a fertile ground for breeding terrorists. But India and Pakistan know that a conflict over Kashmir will have devastating consequences for each other and the entire South Asian region. **The US holds the ring**. The desire of both Islamabad and New Delhi to maintain good relations with the US gives Washington leverage that it exercised in 2001 to avert a possible nuclear war.

**The impact is extinction and is highly probable**

Ghulam **Fai**, PhD, Executive Director of the Kashmiri American Council, Business Recorder, 12-17-**2000**

India has suffered modest economic sanctions for its muscular nuclear and missile profiles. But the global worry over its domestically popular aspiration to big power status has rocketed because of the ongoing conflict in Kashmir. Pakistan has sought to match India bomb for bomb and missile for missile. And the greatest causes belli for warring between the two South Asian rivals is Kashmir, which has already sparked two such clashes. But they came before India and Pakistan could engage in nuclear volleys that could **menace the entire planet with nuclear winter** or a variation of that apocalypse. It is the potential for nuclear exchanges over Kashmir that has prompted President Bill Clinton and his national security advisers to characterise the disputed territory as the **most dangerous place on the earth**.

## 1ar disad

#### The plan creates jobs in key swing states -- boosts reelection probability.

Korte, 4-27-12

[Gregory, USA Today, “Politics stands in the way of nuclear plant's future,” http://www.usatoday.com/money/industries/energy/story/2012-04-13/usec-centrifuges-loan-guarantees/54560118/1]

. USEC estimates the project at its peak will generate 3,158 jobs in Ohio, and 4,284 elsewhere. Pike County, home to the centrifuges, has a 13% unemployment rate — the highest in Ohio. The median household income is about $40,000. The average job at USEC pays $77,316. Centrifuge parts are stacked up in Piketon. "It's as shovel-ready as they come," says spokeswoman Angela Duduit. Indeed, the project has enjoyed bipartisan support. A USA TODAY review of DOE records shows that no fewer than 46 members of Congress — 32 Republicans and 14 Democrats — have pressured the Obama administration to approve the loan guarantee for USEC. "Quick action is paramount," said one bipartisan letter. "It is imperative that this application move forward now," said another. The congressional support comes from states such as Ohio, Pennsylvania, Tennessee, Kentucky, West Virginia, Missouri, Alabama, Indiana, Maryland, North Carolina and South Carolina— an almost exact overlay of the states that would benefit from the 7,442 jobs the company says would be created.