# Round 2 – Aff vs Weber MS

## 1AC

### Plan

#### The United States federal government should substantially reduce restrictions on offshore natural gas production in the United States.

### Prices

#### Gas supply crunch coming now – shale production ceilings and economics

Nelder, 12 [Chris, Smart Planet, February, Everything you know about shale gas is wrong, <http://www.smartplanet.com/blog/energy-futurist/everything-you-know-about-shale-gas-is-wrong/341>]

But now there’s even more bad news: U.S. gas production appears to have hit a production ceiling, and is actually declining in major areas. The startling revelation comes from a new [paper](http://www.theoildrum.com/node/8914) published today by Houston-based petroleum geologist and energy sector consultant Arthur Berman. Berman reached this conclusion by compiling his own production history of U.S. shale gas from a massive data set licensed from data provider HPDI. His well-by-well analysis found that total U.S. gas production has been on an “undulating plateau” since the beginning of 2009, and showed declines in some areas in 2011. This stands in stark contrast to recent data provided by the EIA, which shows shale gas production rising steadily for the past two years, and well into the future. The EIA’s forecast is bullish because it’s **mainly a view of demand**, **without great regard for supply limits**. But their historical supply data differs for a reason that will be no surprise to experienced observers: the data is bad. The EIA gets its data on shale gas production by sampling the reports of major operators, then applying a formula to estimate how much gas is actually being produced, according to Berman. This may explain why they only have official monthly historical production data for the [two years](http://www.eia.gov/dnav/ng/hist/ngm_epg0_fgs_nus_mmcfm.htm) (unofficially, [three](http://www.eia.gov/dnav/ng/ng_prod_shalegas_s1_a.htm)) of 2008 and 2009, and only annual data for 2010 and 2011. This has been a big red flag to me in my recent work on shale gas, accustomed as I am to EIA’s far more detailed and up-to-date monthly and weekly data on oil, and has made it nearly impossible to verify the claim that we’ve had “booming” gas production over the past two years. Data is also available directly from the states, but some **states have flawed reporting processes,** the granularity and reporting frequency varies (as low as every six months, in the case of Pennsylvania), and ultimately the data **isn’t available in a usable format**. It’s also inaccurate and incomplete, as one Pittsburgh newspaper recently [found out](http://www.post-gazette.com/pg/12008/1202172-503-0.stm). Berman reached the same conclusion, noting in his paper that “the data that EIA makes available does not have sufficient resolution to evaluate individual plays or states.” So he had to build his own database. An unprofitable treadmill One reason for the recent slowdown in production growth is that “unconventional” shale gas wells have to make up for the decline of conventional gas wells, which has accelerated from 23 percent per year in 2001 to 32 percent per year today. The U.S. now needs to replace 22 billion cubic feet per day (Bcf/d) of production each year just to maintain flat supply. Currently, all shale gas plays together produce around 19 Bcf/d. The shift to unconventional gas has put us on a production treadmill: We have to keep drilling like mad to maintain output because unconventional wells are far less productive and shorter-lived than conventional gas wells. Berman observes that an average gas well in Texas in 2010 produces one-fifth as much gas as an average conventional gas well did in 1972. In 1972, 23,000 gas wells produced 7.5 trillion cubic feet in Texas; in 2010, it took 102,000 wells to produce 6.4 trillion cubic feet. Another reason was that the spurt of production created a gas glut and drove prices far below the level of profitability. Data from a January, 2012 [presentation](http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NDUxNzk4fENoaWxkSUQ9NDc2OTUwfFR5cGU9MQ==&t=1) by the CEO of gas operator Range Resources showed that gas needs to sell for at least $4 per million BTU in order for operators to turn a profit. Source: Jonathan Callahan, [The Oil Drum](http://www.theoildrum.com/node/8900). Data from Range Resources. Berman is certain that the $4 threshold applies to new drilling on existing plays only; after accounting for land leasing, overhead and debt service, the threshold would be much higher. In any case, we can see that production flattened out when prices fell below $4 at the beginning of 2009. Source: Arthur Berman. Data from Natural Gas Intelligence. A gas price below $3 spells real trouble for operators, and flagging production is but the first effect. The next is debt: According to analysis by ARC Financial Research, the 34 top U.S. publicly traded shale gas producers are currently carrying a combined $10 billion quarterly cash flow deficit. And finally, **there will the destruction of forward supply, as new development grinds down.** Financing further development with debt in this environment will be extremely difficult, and eventually even the joint-venture sugar daddies that have sustained operators over the past few months will get cold feet. Without a reversal in price, gas production is guaranteed to decline. The gas gold rush is over Indeed, Berman concludes that “the gold rush is over at least for now with the less commercial shale plays.” Within the major producing areas of the U.S., which account for 75 percent of production, all except Louisiana have been either flat or declining in recent years. Overall, he sees evidence that 80 percent of existing U.S. shale gas plays are already approaching peak production. Rig counts have been falling, and major operators such as Chesapeake Energy and ConocoPhilips have announced slowdowns in drilling in the last month. The two major plays that do not show evidence of peaking yet are the newer ones: the Marcellus Shale in Pennsylvania and the Haynesville Shale in Louisiana. To see the influence of these two plays on overall production, compare the first chart below, which shows production from all shale plays, to the second, which removes production from those two plays: Source: Arthur Berman Source: Chart by Chris Nelder, from Arthur Berman’s worksheets The Haynesville surpassed the Barnett Shale in Texas last year as the top-producing shale play in the U.S., but it may be reaching a production plateau now. Worse, Berman’s analysis finds that despite its impressive production, the Haynesville is among the least economic of the shale plays, requiring gas prices above $7.00 per thousand cubic feet to sustain new drilling profitably, and nearly $9.00 per thousand cubic feet after accounting for leasing and other costs. (One thousand cubic feet is roughly equivalent to one million BTU.) A word of caution is in order here: A one-year decline in production in an unprofitable environment is not proof that shale gas has “peaked.” It’s certainly possible that renewed drilling could bring higher production when gas prices rise again. The operative question in that case is when. If gas prices recover within the next year or two, it will be relatively easy to bring new wells online rapidly. But if gas prices languish for longer than that, the most productive “core” areas of the plays could become exhausted because the wells deplete so quickly. Without sustained new drilling to replace their production, by the time producers begin drilling again in the remaining, less productive prospects, an air pocket could form in the supply line. Disinformation and diffusion theory Berman admits that it’s strange for his bottom-up analysis to produce results that are so wildly divergent from the claims of the operators and the data offered by the EIA. “I ask myself: Where could we be wrong?” he explained. “We’ve looked at the individual wells and it looks like they’ll produce less gas than the operators say, so where could we be wrong? Likewise on cost: There are no retained earnings, so how could they be saying they’re profitable?” Having scrutinized the financial reports of operators, Berman concludes that operators are being honest with the SEC, because if they aren’t, somebody will go to jail. But then they’re telling a very different story to the public, and to investors, particularly regarding their costs. This isn’t necessarily nefarious; it’s really just a way of working around the natural risks associated with new resource development. They’re playing for the future, not for immediate profitability. Early wildcatters gambled on debt-fueled drilling with the hope that they’d be able to hold the leases long enough to see prices rise again and put them nicely in the black, or flip them at a profit to someone who could. And the profit picture is substantial: according to the Range Resources presentation, when gas is $6, they’ll be realizing a 135 percent internal rate of return. “I think these companies realize—clearly—that the U.S. is moving toward a gas economy,” Berman observes. “The natural gas industry has been very successful at screwing up the coal industry. . . a huge part of the demand is from the power generation business. The President now thinks, incorrectly, that we’ve got 100 years of natural gas. [Op’erators think] ‘If we can just get all this land held, drilled, etc., then in a couple of years when the price recovers we’re going to make a fortune’. . . and they’re right!” I am inclined to agree. My own analysis suggests that [gas is trouncing coal](http://www.smartplanet.com/blog/energy-futurist/regulation-and-the-decline-of-coal-power/275) in the power generation sector. I am also strongly [against exporting LNG](http://www.smartplanet.com/blog/energy-futurist/the-siren-song-of-lng-exports/313), because it will increase domestic costs across the board, another point on which Berman and I agree. “If they go through with the permits to export LNG, then that’s gonna seal it,” he remarked. “All you have to do is commit to 20-year contracts to ship a few bcf per day. . . I fear what’s really going to happen is that we’re going to have to start importing LNG.” Ultimately, we have to ask why there seems to be such an enormous disconnect between the reality of the production and reserve data, and the wild-eyed claims of operators and politicians. Berman’s answer is blunt: “We’re in a weird place where it’s not in anybody’s vested interest to say that things aren’t wonderful,” he said, and went on to relate a few stories of his encounters with politicians. They admitted to him, straight-up, that they can’t tell the public the truth about energy issues like gas reserves and peak oil because nobody wants to hear it, and they’ll just wind up getting voted out of office. “This gets back to basic diffusion theory,” Berman muses, “where only 5 percent of people base their decisions on information, while the other 95 percent make decisions on what everybody else thinks.” That sounds right to me. It benefits everyone involved to tell happy lies, and benefits no one to own up to the current reality. That is true for everyone from the operators right on up to the President. Perhaps in the end—like government—we’ll simply get the energy policy we deserve.

#### Natural gas prices will keep increasing despite flat consumption—that impacts sectors throughout the economy

Schwartzel, 13 [Erich Schwartzel, Pittsburgh Post-Gazette, Expert on Fracking, visited Pappas’ Public Policy Class and was part of a round table discussion that consisted of Barry Rabe, professor at UM and others, really funny too, “U.S. report predicts rising natural gas prices in 2013-14”, <http://www.post-gazette.com/stories/business/news/us-report-predicts-rising-natural-gas-prices-in-2013-14-669602/>]

The average price of natural gas is expected to increase by almost a dollar in 2013, hitting $3.74 per million British thermal units. That's a significant jump from the $2.75 average seen last year, when accelerated drilling created a glut in supply that caused prices to drop and made drilling in many places unprofitable. **Increases are expected to** continueinto2014, when prices are predicted to hit $3.90. The EIA report released Tuesday is the first look into 2014 for the domestic and international energy scene, and it includes projections that could affect gas and coal activity in Pennsylvania and surrounding states. Higher gas prices would send reverberationsacross multiple sectors, helping coal become competitive with natural gas again as an electricity source and allowing drillers to broaden their focus beyond shale formations that are rich in oil. In addition, the federal energy agency projects increased domestic oil production will break new records over the next couple of years and eventually lead to lower prices at the gasoline station. The report is the latest set of tea leaves for an industry that's been in flux: Enthusiasm for drilling was tempered in recent years by economic realities that made it risky for every rig to turn a profit. The low prices made natural gas an easy sell to large, industrial customers who consume a lot of energy, but slowed lease activity as companies waited for prices to rebound. If natural gas prices continue an upward trend toward $4 per mcf, companies that had drilled wells but weren't bringing the gas to market could decide it is worth hooking those wells up to pipelines and selling the gas, said Adam Sieminski, the EIA administrator. Natural gas consumption, meanwhile, is expected to be relatively flat in 2013, though the EIA forecasts an increase in its use to heat homes and offices over the next two years. Consumption in 2012 was low due to an unnaturally warm winter. Over the next several years, **the EIA's projections** call for a steady rise in natural gas prices, said Mr. Sieminski, "continuing to go up to $5 or $6 in the longer term." That would be welcome news to drillers who found the bargain-basement prices unsustainable for rapid-fire drilling in the Marcellus region, which includes much of Pennsylvania, and in other shale formations around the country. Companies in recent years have concentrated on shale regions where more lucrative oil and natural gas liquids are housed, and a rise in regular natural gas prices "might turn the drift from natural gas to oil around," said Mr. Sieminski. Pennsylvania gets one shout-out in the administration's Short-Term Energy Outlook, with researchers saying Marcellus production "continues at a strong pace as producers target oil-and-gas wells." Nationwide, the natural gas rig count was at 431 at the end of 2012 -- almost half of the 811 rigs seen in the beginning of the year. But domestic gas production is expected to remain relatively steady despite the drop in rig count, which the EIA said suggests greater rig efficiency in extracting more gas from a single location.

#### And, shale gas is physically and economically unsustainable—continued reliance dashes expectations of future supply

Heinberg, 10/22/12 [Richard, He is Senior Fellow-in-Residence of the Institute and is widely regarded as one of the world’s foremost Peak Oil educators, He has authored scores of essays and articles that have appeared in such journals as Nature, The Ecologist, The American Prospect, Public Policy Research, Quarterly Review, Z Magazine, Resurgence, The Futurist, European Business Review, Earth Island Journal, Yes!, Pacific Ecologist, and The Sun; and on web sites such as Alternet.org, EnergyBulletin.net, TheOilDrum.com, ProjectCensored.com, and Counterpunch.com.¶ He has appeared in many film and television documentaries, including Leonardo DiCaprio’s 11th Hour, is a recipient of the M. King Hubbert Award for Excellence in Energy Education, and in 2012 was appointed to His Majesty the King of Bhutan's International Expert Working Group for the New Development Paradigm initiative, “Gas Bubble Leaking, About to Burst”, <http://www.postcarbon.org/blog-post/1262435-gas-bubble-leaking-about-to-burst>]

In those early days almost no one wanted to hear about problems with the shale gas boom—the need for enormous amounts of water for fracking, the high climate impacts from fugitive methane, the threats to groundwater from bad well casings or leaking containment ponds, as well as the unrealistic supply and price forecasts being issued by the industry. I recall attempting to describe the situation at the 2010 Aspen Environment Forum, in a session on the future of natural gas. I might as well have been claiming that Martians speak to me via my tooth fillings. After all, the Authorities were all in agreement: The game has changed! Natural gas will be cheap and abundant from now on! Gas is better than coal! End of story! These truisms were echoed in numberless press articles—none more emblematic than Clifford Krauss’s *New York* *Times* piece, “[There Will Be Fuel](http://www.nytimes.com/2010/11/17/business/energy-environment/17FUEL.html?pagewanted=all),” published November 16, 2010. Now Krauss and the *Times* are singing a somewhat different tune. “[After the Boom in Natural Gas](http://www.nytimes.com/2012/10/21/business/energy-environment/in-a-natural-gas-glut-big-winners-and-losers.html?pagewanted=1&tntemail1=y&_r=1&emc=tnt),” co-authored with Eric Lipton and published October 21, notes that “. . . the gas rush has . . . been a money loser so far for many of the gas exploration companies and their tens of thousands of investors.” Krauss and Lipton go on to quote Rex Tillerson, CEO of ExxonMobil: “We are all losing our shirts today. . . . We’re making no money. It’s all in the red.” It seems gas producers drilled too many wells too quickly, causing gas prices to fall below the actual cost of production. Sound familiar? The obvious implication is that one way or another **the market will balance itself out**. Drilling and production will decline (drilling rates have already started doing so) **and** prices will rise until production is once again profitable. So we will have less gas than we currently do, and gas will be more expensive*.* Gosh, whoda thunk? The current Times article doesn’t drill very far into the data that make Berman and Hughes pessimistic about future unconventional gas production prospects—the high per-well decline rates, and the tendency of the drillers to go after “sweet spots” first so that future production will come from ever-lower quality sites. For recent analysis that does look beyond the cash flow problems of Chesapeake and the other frackers, see “[Gas Boom Goes Bust](http://www.theoildrum.com/node/8900)” by Jonathan Callahan, and Gail Tverberg’s latest essay, “[Why Natural Gas isn’t Likely to be the World’s Energy Savior](http://ourfiniteworld.com/2012/10/17/why-natural-gas-isnt-likely-to-be-the-worlds-energy-savior/)”. David Hughes is working on a follow-up report, due to be published in January 2013, which looks at unconventional oil and gas of all types in North America. As part of this effort, he has undertaken **an** exhaustive analysis of 30 different shale gas plays and 21 shale/tight oil plays—over 65,000 wells altogether. It appears that the pattern of rapid declines and the over-stated ability of shale to radically grow production is true across the U.S., for both gas and oil. In the effort to maintain and grow oil and gas supply, Americans will effectively be chained to drilling rigs to offset production declines and meet demand growth, and will have to endure collateral environmental impacts of escalating drilling and fracking. No, shale gas **won’t entirely go away** anytime **soon. But** expectations of continuing low prices (which drive business plans in the power generation industry and climate strategies in mainstream environmental organizations) are about to be dashed. And notions that the U.S. will become a major gas exporter, or that we will convert millions of cars and trucks to run on gas, now ring hollow.

#### And, that ensures catastrophic price spikes

Maize, 12/1/12 [“Is Shale Gas Shallow or the Real Deal?”, Kennedy, Veteran Journalist Kennedy Maize has spent the past 40 years working as a journalist, analyst, and manager in the private sector and federal government, with over 35 years of that focused on energy and environmental topics. Over that time, he has seen myriad examples of how group think, policy fads, and bad judgment can result in colossal failures, particularly in the field of atomic energy. Maize has seen, up close and personal, the demise of the U.S. Atomic Energy Commission, the arrival of the U.S. Nuclear Regulatory Commission, the birth of the U.S. Department of Energy, the failures of nuclear flight, the hubris of atomic earthmoving, the boom and bust uranium market, the birth and death of breeder reactors, and the 60-year wandering in the wilderness of nuclear waste policy. After graduating from Penn State and graduate study at the University of Maryland, Kennedy Maize worked for newspapers in Pennsylvania, New York, and Virginia and the Associated Press in Baltimore. He then spent five years in management at the National Institute of Health and the U.S. Nuclear Regulatory Commission before taking a job covering energy, environment, and business topics for Editorial Research Reports, a division of Congressional Quarterly, where his work appeared in over 1,000 daily newspapers in the U.S. during the mid-to-late 1970s. Maize became a staff writer and editor at The Energy Daily, a preeminent energy trade paper, on March 28, 1979, the day the Three Mile Island accident began outside Harrisburg, Pa. Over more than 10 years at The Energy Daily, he covered the nuclear and coal industries, including stories involving the Clinch River Breeder Reactor, the U.S. Synthetic Fuels Corp., the Powder River Basin coal leasing scandal, and the Chernobyl explosion. In 1993, he founded The Electricity Daily, where he was the editor for 14 years, writing about changes in the electricity business, the rise and fall of Enron, the stagnation of the nuclear power business, and the arrival of market forces in the utility field. Since 2006, he has been an editor at POWER magazine, and the founder of MANAGING POWER magazine, where he has written about the Fukushima catastrophe, the emergence of shale gas and decline of coal, and the often ill-advised push for renewable electricity technologies <http://www.powermag.com/gas/Is-Shale-Gas-Shallow-or-the-Real-Deal_5188.html>]

In an interview with POWER, Berman argued that the boom in drilling shale gas wells has obscured a long-term decline in conventional gas supply. But **a coming rapid decline in shale production**, he said, will soon reveal the overall limits to the gas boom, and volatility and upward pressure could return to natural gas prices. “It’s not a problem for today or tomorrow,” Berman said, “but it is coming. Once we work through the current oversupply, if capital is not forthcoming,” prices will spike. The gas supply bubble will burst. Because of the current gas glut, with long prices in the range of $3 per million cubic feet (mcf), drilling shale gas wells has tanked, noted Berman. Chesapeake Energy, the most bullish of the shale gas players, is selling assets and shifting rigs to drilling for oil because the company just can’t make money on $3 gas. “I can see a time not too many months away when we could see gas supply in rather serious decline,” Berman said, noting that “there is plenty of gas, but it takes a long time to shift momentum back” to gas drilling. At a 2010 meeting in Washington, as low gas prices were resulting in a decline in new drilling, Berman commented, “Shale plays are marginally commercial at best.” Greatly complicating the supply equation, said Berman, is the nature of shale gas wells. “Shale wells decline 30 to 40% per year,” he said. “Conventional wells decline 20 to 25%. What most don’t grasp is how many wells it takes just to keep supply flat.” In the Barnett Shale in Texas, where Berman is most familiar with the geology, he calculates that the annual decline in the gas resource is 1.7 bcf/day. In order to add to the net Barnett production, Berman says, companies would have to drill 3,880 wells, at a cost of $12 billion. “We are setting ourselves up for a potential reduction in supply and price will go up,” said Berman. “I don’t know how much it will go up, and there is a check-and-balance with coal. There will be gas-coal switching if prices do go much higher than now.”

#### Price shock inevitable – four independent reasons – supply increase is key

Moors, 12/14/12 [Dr. Kent, Dr. Kent F. Moors is an internationally recognized expert in global risk management, oil/natural gas policy and finance, cross-border capital flows, emerging market economic and fiscal development, political, financial and market risk assessment. He is the executive managing partner of Risk Management Associates International LLP (RMAI), a full-service, global-management-consulting and executive training firm. Moors has been an advisor to the highest levels of the U.S., Russian, Kazakh, Bahamian, Iraqi and Kurdish governments, to the governors of several U.S. states, and to the premiers of two Canadian provinces. He’s served as a consultant to private companies, financial institutions and law firms in 25 countries and has appeared more than 1,400 times as a featured radio-and-television commentator in North America, Europe and Russia, appearing on ABC, BBC, Bloomberg TV, CBS, CNN, NBC, Russian RTV and regularly on Fox Business Network. A professor in the Graduate Center for Social and Public Policy at Duquesne University, where he also directs the Energy Policy Research Group, Moors has developed international educational programs and he runs training sessions for multiple U.S. government agencies. And until recent revisions in U.S. policy, Dr. Moors was slated to be the deputy director of the Iraq Reconstruction Management Office (IRMO) in Baghdad,

[http://moneymorning.com/2012/12/14/2013-natural-gas-forecast-six-bullish-reasons-why-now-is-the-time-to-buy/\](http://moneymorning.com/2012/12/14/2013-natural-gas-forecast-six-bullish-reasons-why-now-is-the-time-to-buy/%5C)]

A rise on the supply side would generally reduce prices, especially if the number of operators continues to increase. More gas moving on the market from more suppliers results in a downward pressure on prices. The second dynamic, however, is moving in the other direction, enticing the increase in drilling and expansion of infrastructure. This factor considers the demand side, and there are at least six major trends colliding to increase the prospects for gas usage as we move through 2013. As a result, I expect natural gas prices to see a 25% increase from current levels... here's why. 2013 Natural Gas Forecast 1) Winter Chill Increases Natural Gas Demand The first factor driving price increases will come from a colder winter throughout the United States. Traditionally, gas prices have been quite sensitive to seasonal shifts. The overly mild winter in the East last winter was enough to depress gas prices across the board. In 2011, NYMEX futures contracts declined to less than $2 per 1,000 cubic feet (or million BTUs). The price has recovered to as much as $3.90 recently, although it is currently down to about $3.50. Nonetheless, the recovery (largely a result of companies pulling drilling rigs out of service and reducing the number of new wells) combined with a colder winter, will provide a base pushing the price to $4 as we start the new year. The other five elements are more directly affecting demand increases moving forward. These will have primary effects on the gas balance between anticipated needs and drilling volume. 2/3) Industrial and Petrochemical Usage on the Rise The second and third elements are increasing industrial and petrochemical uses for gas. Industrial use has been building for a while, but it is one of the last demand factors to emerge during an economic recovery. That is now beginning to kick in. However, petrochemical usage is resulting in an appreciating demand situation. Gas, natural gas liquids, and byproducts are replacing crude oil and oil products as feeder stock for an entire range of petrochemicals - from solvents and polymers, to plastics and fibers. The intense competition over where the next "crackers" will be located in the U.S. is clear testimony to the added demand coming from petrochemicals. These facilities will break down gas flows, making the feeder stock ingredients more accessible. This development is also putting some additional weight on the processing of "wet" gas, raw material containing value-added byproducts. 4) Natural Gas Fleets Expand Across the U.S. The fourth demand factor is the increasing use of natural gas as a vehicle fuel. We have been witnessing a rise in interest here for several years, but the move to using liquefied natural gas (LNG) and compressed natural gas (CNG) to replace gasoline and diesel has been gaining strength. Entire fleets of heavy-duty trucks have been retrofitted across Canada, while refueling terminals have been popping up near interstates in the U.S. to service company-designated vehicles. The cost savings in fuel is significant, usually representing more than two dollars per gallon. The downside is on the infrastructure side. It will take several years of heavy capital investment to provide the network of transport pipelines, storage and terminal facilities, filling stations, and related requirements. And we must consider the cost of retrofitting engines. At an average of $35,000 per vehicle, it will remain an obstruction for some. I expect to see an increase in natural gas-as-fuel usage continuing, but remaining on the truck side for 2013. Personal autos will stay a niche market in the near-term. Still, this will comprise an improving demand area for natural gas. 5) Electricity Consumption from Gas Set to Spike Fifth is the massive transfer underway from coal to gas as the preferred fuel for generating electricity. Coal will remain a fuel of choice in several sectors of the world and will still be cost effective in certain regions in the U.S. But the days of "King Coal" in the generation of electricity are drawing to a close. The figures here are massive. The American market is replacing more than 90 gigawatts (GW) of generating capacity by 2020, virtually all of this coal-fired. In addition, the phasing in of non-carbon regulations (cutting mercury, sulfurous, and nitrous oxide emissions) will add another 20 GW to the retirement agenda, once again coming almost exclusively from coal. Each 10 GW transferred to natural gas will require an additional 1.2 billion cubic feet of gas per day. If only 50% of the expected transition from coal to gas occurs, the added demand will eliminate three times the current total gas in storage nationwide.

#### And, expanded supply locks in a manufacturing renaissance

Pirog and Ratner, 12 [November, Congressional Research Service, Natural Gas in the U.S. Economy: Opportunities for Growth Robert Pirog Specialist in Energy Economics Michael Ratner Specialist in Energy Policy, <http://www.fas.org/sgp/crs/misc/R42814.pdf>]

Expanded supply, coupled with low natural gas prices, has the potential to contribute to a transformation of important sectors of the U.S. economy. Increased output and employment, expanded investment, income growth, improved competitiveness, and a reduction in the foreign trade deficit are likely outcomes. These conditions in the natural gas markets are likely to benefit certain key industries directly, while many other industries could experience indirect benefits. direct beneficiaries are those industries that use natural gas as a raw material or as an important input in a production process. Industries whose output is directly related to the expansion of natural gas exploration, development and production are also direct beneficiaries. Examples of industries that use natural gas directly are petrochemicals and fertilizers. The steel industry is an example of an industry whose output is linked to the pace of natural gas resource development. Industries experiencing indirect benefits might include construction and capital goods producers that contribute to the supply chain for the investment projects undertaken by expanding natural gas consumers. In addition, more spending by workers in all of these industries could increase the growth of a wide variety of consumer goods and retail firms. The economic benefits of shale gas development and production will also open areas not recently accustomed to natural gas production, for example, the Marcellus field in parts of Pennsylvania, Ohio, West Virginia, Maryland, Virginia, and New York. In the international economy, those U.S. industries directly affected by expanded supply and low natural gas prices are likely to experience a competitive advantage over the producers of similar goods in other countries, resulting in increased exports from, and decreased imports to the United States. These effects would likely improve the U.S. trade deficit position. This advantage is likely to be maintained over time if the U.S. price of natural gas remains below those observed in other world regional markets (see Figure 5).13 U.S. industry’s advantage could be reduced through a process of world natural gas price convergence, especially in the three leading regional markets. However, for this to occur, traditional long-run contract terms, specifically linking natural gas prices to oil prices, would need to be changed to a more market-oriented method.

#### And, expectations of continued supply prevents economic collapse via a collapse of manufacturing

Carey, 12/13/12 [Julie M, Julie M. Carey is an energy economist with Navigant Economics who provides consulting and testifying services Navigant’s [unconventional oil and gas offerings](http://www.forbes.com/sites/energysource/2012/12/07/surprise-side-effect-of-shale-gas-boom-a-plunge-in-u-s-greenhouse-gas-emissions/www.navigant.com/shale) include advisory services for strategic business decision analysis, construction risk management, economic and antitrust analyses, investment banking and restructuring advisory services, and expert services for disputes and investigations, “How Unconventional Oil And Gas Is Supercharging The U.S. Economy”, <http://www.forbes.com/sites/energysource/2012/12/13/how-unconventional-oil-and-gas-is-transforming-the-u-s-economy/>]

It’s an exciting time to be in the energy industry in America. The impact of unconventional oil and gas development on the U.S. economy is considerable, with potentially hundreds of billions of dollars in investments, millions of new jobs, and a renaissance of American ingenuity and innovation. In thinking about what is to come, looking back five years helps set the stage. January 2008: The energy sector was facing the great recession, high current and future expected natural gas prices, and job losses to [China](http://www.forbes.com/places/china/). There was **a generally poor outlook for the energy industry** and the economy. Few could have predicted the changes that were to come. Unforeseen happenings include the [North Dakota](http://www.forbes.com/places/nd/) oil rush, liquefied natural gas facilities being used as export facilities (instead of as import facilities as originally planned), railroads hauling crude oil, and jobs coming back from China. And, this is just the beginning. The commencement of the crude oil and natural gas revolution can be boiled down to one simple equation: [Surprise Side Effect Of Shale Gas Boom: A Plunge In U.S. Greenhouse Gas Emissions](http://www.forbes.com/sites/energysource/2012/12/07/surprise-side-effect-of-shale-gas-boom-a-plunge-in-u-s-greenhouse-gas-emissions/) [Forbes Staff Contributor](http://blogs.forbes.com/velocity/)  Abundant resources + cost effective extraction = high production levels of unconventional oil and gas. The net effect is a reshaping of the U.S. energy industry and our economy. Additionally, the country’s increased reliance on natural gas (displacing coal) has already benefited the environment, and will continue to do so in the future. [Carbon emissions hit a 20-year low](http://www.forbes.com/sites/energysource/2012/12/07/surprise-side-effect-of-shale-gas-boom-a-plunge-in-u-s-greenhouse-gas-emissions/) (in the first quarter 2012 according to EIA) and some industry observers believe that the U.S. could meet the Kyoto agreement standards by 2020 (even though the U.S. did not sign it). The emergence of unconventional oil and gas will have tremendous impacts on both the energy industry and the economy. The outlook for unconventional gas is exceptionally bright—with expectations for relatively low future natural gas prices, enough supply to meet domestic needs, and surplus enough to export to other countries. While the unconventional oil story continues to unfold and evolve, an abundance of domestic crude oil is expected. And, thus, an opportunity to not only significantly reduce the country’s dependence on oil imports, but to also increase energy security. Currently, crude oil prices are out of balance as new supply regions are isolated, making it difficult to get crude oil to market. That is expected to change once the necessary infrastructure is built to handle the new-found supply. As a result of these infrastructure needs, and the tremendous opportunities associated with unconventional oil and gas, U**.S. economic activity is rising.** Rising levels of economic activity can be divided into three distinct but overlapping waves of capital investment. The first wave of capital investment targets new and expanding oil and gas production areas. Sustained investment in the upstream sector – including wellheads, drilling and production – will be required to keep pace with increases in demand for the foreseeable future. The second wave of investment will focus on infrastructure to address new supply locations, delivering the product to market, and capitalizing on the near term opportunities arising from lower energy costs. [Billions](http://blogs.forbes.com/billions/) of dollars of investments specifically targeting capital projects in this wave are being announced weekly. Substantial investment in crude oil, natural gas and natural gas liquids pipelines will be required in order to build, expand, and reverse pipelines to address the new supply source locations. Natural gas processing plants that separate natural gas liquids (NGL) from natural gas will be required to address the growing production levels and new supply regions. In addition, LNG facilities will begin to export natural gas, and there is a potential opportunity for natural gas-to-diesel plants. In addition to these traditional areas of investment, creative market solutions are also emerging, such as rail transportation of crude oil. While railroads may serve primarily as a near to mid-term solution in the wake of long-lead time pipeline solutions, they are nimble competitors with small capital requirements that can be quickly deployed to utilize the country’s far-reaching rail networks. With only a few years needed to recover capital costs on investment, the competitive landscape changes and rail transportation rates could be reduced after pipelines enter the market to keep railroads competitive and still profitable. These factors suggest that railroads could be in the crude oil transportation business for the long haul. During this second wave, there will be a manufacturing resurgence, in part because of lower expected energy costs. Other macroeconomic factors will also be at work—including relative improvement in U.S. labor rates as labor markets tighten in China and other countries. Petrochemical plants will become cost effective competitors in the worldwide market and will be a significant component of the manufacturing investment story. Manufacturing facilities will be built to manufacture pipes, drill bits, valves and other required infrastructure materials. In addition, other manufacturing plants will likely be built solely as a play on the expectation of relatively low energy costs into the future. Such suspects could include those whose energy costs are large portion of production costs: semiconductors, plastics, and LCD televisions. The trend includes linking production and energy resources in an efficient manner, and moving production closer to market demand in order to minimize transportation related costs. The last wave of investment – which won’t begin to heat up for a few years – focuses on the consumers segment. In this wave, additional natural gas-fired power plants will be built to replace retiring coal plants and meet future increases in demand. Of course, new gas fired power plants will initially be built in regions with less excess capacity (post coal plant retirement). Another impact of U.S. unconventional oil and gas development will be increased in electricity demand (occurring more dramatically in various localized pockets), directly resulting from investment in waves one and two. New production areas and locations for processing and manufacturing plants will observe higher load growth. For example, localized areas within the Bakken region expect energy demand to double in the next five years. As a result of very specific changes to the economic activity and corresponding energy consumption levels, a more granular analyses will be required than is previously provided by traditional load forecasting methods. This third wave will also see a significant number of new heavy-duty natural gas vehicles, including bus and truck fleets. Greater reliance on natural gas-fueled light duty vehicles is possible but will require more time due to greater infrastructure requirements and technological innovation. Other creative opportunities being explored include natural gas pumps (hooked up to the home) to fuel natural gas vehicles, and light duty vehicles relying on fuel cells (which manufacturers hope to begin building by 2015). While it’s not currently clear who the winners will be, it’s safe to say that positive market forces and ample opportunity will lead to innovative solutions. The near-term outlook for total capital investment (from primarily first and second wave projects) is immense. The table below provides a snapshot analysis of the short term outlook (through 2020) for domestic (lower 48 state) based capital investment. These estimates are conservative and based largely on publicly reported company business plans. For example, Table 1 includes only a portion of expected U.S. LNG projects going forward, as compared to the full list of DOE applications. The estimate also excludes the massive $65 billion proposed [Alaska](http://www.forbes.com/places/ak/) pipeline/export facility project and third wave investments targeting natural gas fired power plants and natural gas vehicles. Even with just a portion of total investment included, the conservative estimate of short term investment reaches more than $300 billion. **Estimate of U.S. Unconventional Oil and Gas Capital Expenditures and Job Creation**  **(Through 2020)** These investments have a huge economic impact on the U.S. economy—impacting jobs, economic growth and energy security. Some studies indicate that the U.S. has avoided retreating into an economic recession as a result of activity in the unconventional oil and gas sector. Production areas for unconventional oil and gas have observed very low unemployment and stronger GDP and tax revenues as compared to the rest of the U.S. As a result of the significant near term investments associated with unconventional oil and gas, it’s possible that up to 3.5 million jobs will be created from the infrastructure build out and related opportunities (including both direct and indirect jobs).

#### Robust domestic gas production is key to sustain manufacturing

Duesterberg, 12 [Tom is Executive Director of the Manufacturing and Society in the 21st Century program at the Aspen Institute. He recently retired as President and CEO of The Manufacturers Alliance/MAPI, an economic research and executive education organization based in Arlington, Virginia with more than 500 manufacturing firms as members. Previous positions include:  Director of the Washington Office of The Hudson Institute, Assistant Secretary for International Economic Policy at the U.S. Department of Commerce, chief of staff to two members of Congress, and associate instructor at Stanford University. His commentary and analysis on manufacturing, economic performance, globalization, and related policy issues can be found in major news outlets. He holds a B.A. degree from Princeton and M. A. and Ph.D. degrees from Indiana University, “Impact of the Energy Boom on US Manufacturing”,

<http://www.aspeninstitute.org/about/blog/impact-energy-boom-us-manufacturing>]

The manufacturing sector has been leading the US economic recovery since the end of the Great Recession in 2009. One of the key drivers in the manufacturing recovery is the renaissance in domestic production of natural gas and, to a lesser extent, oil. On November 28, the Institute’s program on [Manufacturing and Society in the 21st Century](http://www.aspeninstitute.org/policy-work/manufacturing) will host an [event](http://www.aspeninstitute.org/events/2012/11/28/impact-energy-renaissance-us-manufacturing) exploring the ramifications of recent developments in energy and manufacturing, and the sustainability of the production boom for the future.¶ Growth in domestic energy production, driven by the deployment of new exploration and drilling technologies, has been aneconomic turning pointin the US for a number of reasons. Not the least of these is the possibility of reaching the US’ long-term goal of energy independence, a goal which arguably has already been reached, if North America is considered the proper unit for determining independence. The substitution of natural gas for coal in electricity production and process heat in manufacturing, as well as the growing use of natural gas in transportation, also contribute to lowering greenhouse gas emissions. The Department of Energy’s estimates of future carbon emissions show a 69 percent drop in expected emissions from 2002 to 2030 compared to projections from 1990. Finally, overall economic growth is strengthened considerably by the energy boom. Not only is the United States producing more energy, it will also be building more petrochemical refineries, will supply the equipment needed to build the exploration and refining infrastructure, and almost every energy user—from households to large manufacturers—will benefit from more secure supplies and lower costs.¶ Manufacturing is at a pivotal point in this emerging energy economy. It uses about one-third of all energy produced in the United States, so lower prices and more secure supply give almost all firms in the sector a competitive advantage overfirms in other nations. Relative to the United States, the spot price of natural gas is nearly three times more expensive in Europe and four times more expensive in most of Asia. This advantage is especially important in the chemicals industry, which is the second largest subsector of US manufacturing. Natural gas and associated liquids represent over 80 percent of the feedstock for US refineries, whereas in Europe and Asia the ratios are roughly two-thirds oil and one-third natural gas. When the price differential between natural gas and oil is taken into account, the advantage to the American chemicals sector comes into much sharper relief. The US manufacturing sector benefits in many other ways: lower process heat costs, a globally competitive advantage in building the energy and refinery infrastructure driving the renaissance, and the stability of supply which will help attract long-term investment in subsectors like steel, glass, aluminum, and metal working. Finally, a larger share of GDP for a growing manufacturing sector helps to improve living standards, since productivity growth is so strong in this sector. Since 1998, manufacturing productivity has grown at an annual rate of 3.5 percent, over twice as much as the 1.4 percent in the services sector.¶ In the last few decades, manufacturing -- which faces steadily growing foreign competition and must innovate to protect its market share -- has steadily improved the energy efficiency of production. Total carbon emissions in this sector have fallen by nearly one-fourth since 1998, even though total output has increased by about a third. As a result, carbon emissions per dollar of output in manufacturing have fallen by 36 percent since 1998, compared to only 20 percent in the overall economy. This is due in part to the substitution of natural gas, in part due to productivity increases, and in part due to higher use of renewable energy—manufacturing uses 90 percent more renewables than the transportation sector.

#### Scenario 1 – Economy

#### And, strong manufacturing ensures economic resilience – prevents disruptions from inevitable economic shocks

Ettlinger, 11 [Michael, Vice President for Economic Policy at the Center for American Progress Prior to joining the Center, he spent six years at the Economic Policy Institute directing the Economic Analysis and Research Network. Previously, he was tax policy director for Citizens for Tax Justice and the Institute on Taxation and Economic Policy for 11 years. He has also served on the staff of the New York State Assembly. “The Importance and Promise of American Manufacturing Why It Matters if We Make It in America and Where We Stand Today”, <http://www.americanprogress.org/wp-content/uploads/issues/2011/04/pdf/manufacturing.pdf>]

Manufacturing is critically important to the American economy. For generations, the strength of our country rested on the power of our factory floors—both the machines and the men and women who worked them. We need manufacturing to continue to be a bedrock of strength for generations to come. Manufacturing is woven into the structure of our economy: Its importance goes far beyond what happens behind the factory gates. The strength or weakness of American manufacturing carries implications for the entire economy, our national security, and the well-being of all Americans. Manufacturing today accounts for 12 percent of the U.S. economy and about 11 percent of the private-sector workforce. But its significance is even greater than these numbers would suggest. The direct impact of manufacturing is only a part of the picture. First, jobs in the manufacturing sector are good middle-class jobs for millions of Americans. Those jobs serve an important role, offering economic opportunity to hard-working, middle-skill workers. This creates upward mobility and broadens and strengthens the middle class to the benefit of the entire economy. What’s more, U.S.-based manufacturing underpins a broad range of jobs that are quite different from the usual image of manufacturing. These are higher-skill service jobs that include the accountants, bankers, and lawyers that are associated with any industry, as well as a broad range of other jobs including basic research and technology development, product and process engineering and design, operations and maintenance, transportation, testing, and lab work. Many of these jobs are critical to American technology and innovation leadership. The problem today is this: Many multinational corporations may for a period keep these higher-skill jobs here at home while they move basic manufacturing elsewhere in response to other countries’ subsidies, the search for cheaper labor costs, and the desire for more direct access to overseas markets, but eventually many of these service jobs will follow. When the basic manufacturing leaves, the feedback loop from the manufacturing floor to the rest of a manufacturing operation—a critical element in the innovative process—is eventually broken. To maintain that feedback loop, companies need to move higher-skill jobs to where they do their manufacturing. And with those jobs goes American leadership in technology and innovation. This is why having a critical mass of both manufacturing and associated service jobs in the United States matters. The “industrial commons” that comes from the crossfertilization and engagement of a community of experts in industry, academia, and government is vital to our nation’s economic competitiveness. Manufacturing also is important for the nation’s economic stability. The experience of the Great Recession exemplifies this point. Although manufacturing plunged in 2008 and early 2009 along with the rest of the economy, it is on the rebound today while other key economic sectors, such as construction, still languish. Diversity in the economy is important—and manufacturing is a particularly important part of the mix. Although manufacturing is certainly affected by broader economic events, the sector’s internal diversity—supplying consumer goods as well as industrial goods, serving both domestic and external markets— gives it great potential resiliency. Finally, supplying our own needs through a strong domestic manufacturing sector protects us from international economic and political disruptions. This is most obviously important in the realm of national security, even narrowly defined as matters related to military strength, where the risk of a weak manufacturing capability is obvious. But overreliance on imports and substantial manufacturing trade deficits weaken us in many ways, making us vulnerable to everything from exchange rate fluctuations to trade embargoes to natural disasters.

#### The plan independently acts as an immediate stimulus

Mason, 09 [The Economic Contribution of Increased Offshore Oil Exploration and Production to Regional and National Economies by J oseph R. Mason\*, Hermann Moyse Jr./Louisiana Bankers Association Endowed Chair of Banking, Louisiana State University, E. J. Ourso College of Business, <http://www.americanenergyalliance.org/images/aea_offshore_updated_final.pdf>]

The estimates suggest that permanently lifting the OCS moratoria would produce broad economic benefits. Those benefits are analyzed on both short- and long-term bases. Short-run effects are represented as expected annual effects during the first years of the investment (pre-production) phase; Long-run effects are represented as expected annual effects during the production phase. A summary of the estimated shortand long-run effects is presented in Table 1. Summarizing the results, increased offshore investment and production would support hundreds of thousands of new careers and provide billions of dollars in new wages and tax revenues. By the present estimates, increased production is likely to contribute an additional 0.5 percent of GDP in immediate new economic activity each year and will ultimately contribute more than 2 percent of GDP each year for thirty or more years of production. That magnitude of economic growth is expected to contribute federal and state and local tax revenue from production equivalent to approximately $350 per person over the age of eighteen per year over a similar time horizon. The total incremental contribution of increased OCS Planning Area production to GDP is more than $8 trillion (in current dollars), and total tax benefits amount to some $2.2 trillion. Total royalty revenues amount to over $400 billion. Importantly, those benefits would be realized without any increase in direct government spending. Rather, increased OCS output would refill national, state, and local government coffers—currently depleted by the real estate and credit crises—without additional government outlays. The effects of such a stimulus are particularly attractive in the face of a severe economic downturn.

#### \*econ impact

#### Economic decline causes worldwide conflict – none of your defense applies

Harris and Burrows 9 Mathew, PhD European History @ Cambridge, counselor in the National Intelligence Council (NIC) and Jennifer is a member of the NIC’s Long Range Analysis Unit “Revisiting the Future: Geopolitical Effects of the Financial Crisis” <http://www.ciaonet.org/journals/twq/v32i2/f_0016178_13952.pdf> Increased Potential for Global Conflict

Of course, the report encompasses more than economics and indeed believes the future is likely to be the result of a number of intersecting and interlocking forces. With so many possible permutations of outcomes, each with ample Revisiting the Future opportunity for unintended consequences, there is a growing sense of insecurity. Even so, history may be more instructive than ever. While we continue to believe that the Great Depression is not likely to be repeated, the lessons to be drawn from that period include the harmful effects on fledgling democracies and multiethnic societies (think Central Europe in 1920s and 1930s) and on the sustainability of multilateral institutions (think League of Nations in the same period). There is no reason to think that this would not be true in the twenty-first as much as in the twentieth century. For that reason, the ways in which the potential for greater conflict could grow would seem to be even more apt in a constantly volatile economic environment as they would be if change would be steadier. In surveying those risks, the report stressed the likelihood that terrorism and nonproliferation will remain priorities even as resource issues move up on the international agenda. Terrorism’s appeal will decline if economic growth continues in the Middle East and youth unemployment is reduced. For those terrorist groups that remain active in 2025, however, the diffusion of technologies and scientific knowledge will place some of the world’s most dangerous capabilities within their reach. Terrorist groups in 2025 will likely be a combination of descendants of long established groups\_inheriting organizational structures, command and control processes, and training procedures necessary to conduct sophisticated attacks\_and newly emergent collections of the angry and disenfranchised that become self-radicalized, particularly in the absence of economic outlets that would become narrower in an economic downturn. The most dangerous casualty of any economically-induced drawdown of U.S. military presence would almost certainly be the Middle East. Although Iran’s acquisition of nuclear weapons is not inevitable, worries about a nuclear-armed Iran could lead states in the region to develop new security arrangements with external powers, acquire additional weapons, and consider pursuing their own nuclear ambitions**.** It is not clear that the type of stable deterrent relationship that existed between the great powers for most of the Cold War would emerge naturally in the Middle East with a nuclear Iran. Episodes of low intensity conflict and terrorism taking place under a nuclear umbrella could lead to an unintended escalation and broader conflict if clear red lines between those states involved are not well established. The close proximity of potential nuclear rivals combined with underdeveloped surveillance capabilities and mobile dual-capable Iranian missile systems also will produce inherent difficulties in achieving reliable indications and warning of an impending nuclear attack. The lack of strategic depth in neighboring states like Israel, short warning and missile flight times, and uncertainty of Iranian intentions may place more focus on preemption rather than defense, potentially leading to escalating crises. 36 Types of conflict that the world continues to experience, such as over resources, could reemerge, particularly if protectionism grows and there is a resort to neo-mercantilist practices. Perceptions of renewed energy scarcity will drive countries to take actions to assure their future access to energy supplies. In the worst case, this could result in interstate conflicts if government leaders deem assured access to energy resources, for example, to be essential for maintaining domestic stability and the survival of their regime. Even actions short of war, however, will have important geopolitical implications. Maritime security concerns are providing a rationale for naval buildups and modernization efforts, such as China’s and India’s development of blue water naval capabilities. If the fiscal stimulus focus for these countries indeed turns inward, one of the most obvious funding targets may be military. Buildup of regional naval capabilities could lead to increased tensions, rivalries, and counterbalancing moves, but it also will create opportunities for multinational cooperation in protecting critical sea lanes. With water also becoming scarcer in Asia and the Middle East, cooperation to manage changing water resources is likely to be increasingly difficult both within and between states in a more dog-eat-dog world.

#### Studies prove our impact

**Royal**, Director Cooperative Threat Reduction DOD, **’10** (Jedediah, “Economic Integration, Economic Signaling and the Problem of Economic Crises” in ‘Economics of War and Peace: Economic, Legal and Political Perspectives’ ed. Goldsmith and Brauer, p. 213-215)

Less intuitive is how periods of economic decline may increase the likelihood of extern conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defense behavior of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow. First, on the systemic level, Pollins (2008) advances Modelski and Thompson’s (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of a pre-eminent power and the often bloody transition from one pre-eminent leader to the next. As such, exogenous shocks such as economic crisis could usher in a redistribution of relative power (see also Gilpin, 1981) that leads to uncertainty about power balances, increasing the risk of miscalculation (Fearon, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner, 1999). Seperately, Pollins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown. Second, on a dyadic level, Copeland’s (1996, 2000) theory of trade expectations suggests that ‘future expectation of trade’ is a significant variable in understanding economic conditions and security behavious of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations, However, if the expectations of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases, as states will be inclined to use force to gain access to those resources. Crisis could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states. Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write, The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favor. Moreover, the presence of a recession tends to amplify the extent to which international and external conflict self-reinforce each other. (Blomberg & Hess, 2002. P. 89) Economic decline has been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. ‘Diversionary theory’ suggests that, when facing unpopularity arising from economic decline, sitting governments have increase incentives to fabricate external military conflicts to create a ‘rally around the flag’ effect. Wang (1996), DeRouen (1995), and Blomberg, Hess, and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997), Miller (1999), and Kisangani and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak Presidential popularity, are statistically linked to an increase in the use of force. In summary, recent economic scholarship positively correlated economic integration with an increase in the frequency of economic crises, whereas political science scholarship links economic decline with external conflict at systemic, dyadic and national levels. This implied connection between integration, crisis and armed conflict has not featured prominently in the economic-security debate and deserves more attention.

#### Manufacturing loss cascades throughout the economy

Pisano and Shih, 12 [September, Producing Prosperity: Why America Needs a Manufacturing Renaissance [Kindle Edition], Harry E. Figgie Professor of Business Administration at the Harvard Business School. He has been on the Harvard faculty for 23 years, Professor of Management Practice. He joined the Technology and Operations Management Unit in January 2007, p. amazon kindle]

The rough and tumble of international competition means we should expect industries to come and go. Even if this is sometimes painful, it is, in fact, a healthy process by which resources flow to their most productive uses. When a commons erodes, however, it represents a deeper and more systematic problem. It means the **foundation upon which** **future innovative sectors can be built is crumbling**. When the semiconductor production business moved to Asia in the 1980s, it brought with it a whole host of capabilities—electronic-materials processing, deposition and coating, and sophisticated test and assembly capabilities—that formed an industrial commons needed to produce a whole host of advanced, high-valued-added electronic products such as flat-panel displays, solid-state lighting, and solar PV. In this book, we will examine the dynamics that underlie both the rise and decline of commons, and the consequence of those declines. Our argument is built around three core themes. Theme 1: When a Country Loses the Capability to Manufacture, It Loses the Ability to Innovate Innovation and manufacturing are often viewed as residing at the opposite ends of the economic spectrum—innovation being all about the brain (knowledge work) and manufacturing all about brawn (physical work). Innovation requires highly skilled, highly paid workers, and manufacturing requires low-skilled, low-paid workers; innovation is a high-valued-added specialty, and manufacturing is a low-value-added commodity; innovation is creative and clean, and manufacturing is dull and dirty. Such a view of manufacturing is a myth and is based on a profound misunderstanding of how the process of innovation works and the link between R&D and manufacturing. R&D is a critical part of the innovation process, but it is not the whole thing. Innovation is about moving the idea from concept to the customer’s hands. For some highly complex products (flat-panel displays, PV cells, and biotechnology drugs, to name a few) the transfer from R&D into production is a messy affair, requiring extremely tight coordination and the transfer of learning between those who design and those who manufacture. If you do not understand the production environment, you have a harder time designing the product. In these settings, there are strong reasons to co-locate **R&D and production**. It is a lot easier for an engineer to walk across the street to the plant or drive down the road than to fly halfway around the world to troubleshoot a problem. This helps to explain why the American company Applied Materials, a leading maker of equipment for manufacturing semiconductors and solar panels, moved its chief technical officer from the United States to China.14 Because most of its large customers are now in China, Taiwan, and South Korea, it makes sense for the company to do its research close to the factories that use its equipment. Applied Materials is now moving much of its manufacturing operations to Asia as well. In chapter 4, we will offer a framework for determining when it matters whether R&D and manufacturing are located near each and when it does not. Theme 2: The Industrial Commons Is a Platform for Growth The industrial commons perspective suggests that a decline of competitiveness of firms in one sector can have implications for the competitiveness of firms in another. **Industries and the** **suppliers** of capabilities to the industries **need each other**. Kill a critical industry, and the suppliers probably will not survive for long; other industries in the region that depend on those suppliers will then be jeopardized. When the auto industry declines, it causes an atrophy of capabilities (such as casting and precision machining) that are also used in industries such as heavy equipment, scientific instruments, and advanced materials. The unraveling of a commons is a vicious circle. As capabilities erode, it is harder for companies that require access to stay in business. They are forced to move their operations or their supplier base to the new commons. As they move, it is harder for existing suppliers to sustain themselves. Ultimately, they must either close shop or move their operations. Even worse, the loss of a commons may cut off future opportunities for the¶ emergence of new innovative sectors if they require close access to the same capabilities. Four decades ago, when US consumer electronics companies decided to move production of these “mature” products to Asia, who would have guessed that this decision would influence where the most important component for tomorrow’s electric vehicles—the batteries—would be produced? But that is what happened.15 The offshoring of consumer electronics production (often contracted to then-little-known Japanese companies such as Sony and Matsushita) led to the migration of R&D in consumer electronics to Japan (and later to South Korea and Taiwan). As consumers demanded ever-smaller, lighter, and more powerful (and power hungry!) mobile computers and cell phones, electronics companies were pushed to innovate in batteries. In the process, Asia became the hub for innovation in the design and manufacturing of compact, high-capacity, rechargeable, lithium ion batteries, a technology that was invented in America. This explains why Asian suppliers have become the dominant source of the lithium ion battery cells used in electric vehicles.

#### Scenario 2 - heg

#### Manufacturing key to overall military superiority and deterrence

Mackenzie Eaglen et al (American Enterprise Institute, Rebecca Grant, IRIS Research, Robert P. Haffa, Haffa Defense Consulting, Michael O'Hanlon, The Brookings Institution, Peter W. Singer, The Brookings Institution, Martin Sullivan, Commonwealth Consulting, Barry Watts, Center for Strategic and Budgetary Assessments) January 2012 “The Arsenal of Democracy and How to Preserve It: Key Issues in Defense Industrial Policy

Yet there are severe challenges that could result to the nation’s security interests even with 10 percent cutbacks. Despite the likely potential of lesser resources, the demand side of the equation does not seem likely to grow easier. The international security environment is challenging and complex. China’s economic, political and now military rise continues. Its direction is uncertain, but it has already raised tension, especially in the South China Sea. Iran’s ambitions and machinations remain foreboding, with its nuclear plans entering a new phase of both capability but also crisis. North Korea is all the more uncertain with a leadership transition, but has a history of brinkmanship and indeed even the occasional use of force against the South, not to mention nuclear weapons-related activities that raise deep concern. And the hopeful series of revolutions in the broader Arab world in 2011, while inspiring at many levels, also seem likely to raise uncertainty in the broader Middle East. Revolutions are inherently unpredictable and often messy geostrategic events. On top of these remain commitments in Afghanistan and beyond and the frequent U.S. military role in humanitarian disaster relief. Thus, there are broad challenges for American defense planners as they try to address this challenging world with fewer available resources. The current wave of defense cuts is also different than past defense budget reductions in their likely industrial impact, as the U.S. defense industrial base is in a much different place than it was in the past. Defense industrial issues are too often viewed through the lens of jobs and pet projects to protect in congressional districts. But the overall health of the firms that supply the technologies our armed forces utilize does have national security resonance. Qualitative superiority in weaponry and other key military technology has become an essential element of American military power in the modern era—not only for winning wars but for deterring them. That requires world-class scientific and manufacturing capabilities—which in turn can also generate civilian and military export opportunities for the United States in a globalized marketplace. While procurement budgets have finally, in recent years, reached their historic norms as a percent of the overall defense budget, the legacy of the 1990s procurement “holiday” remains real. In that period, the United States as a matter of policy bought much less equipment than it would normally, enjoying the fruits of the 1980s buildup as it sought to reduce defense spending. But Reagan-era weaponry is wearing out, and the recent increase in procurement spending has not lasted long enough to replenish the nation’s key weapons arsenals with new weaponry. The last decade of procurement policy focused more on filling certain gaps in counterinsurgency capabilities than replacing the mainline weapons programs that make up the bulk of conventional capabilities. Meanwhile, the main elements of DoD’s weapons inventories—fighter jets, armored vehicles, surface vessels and submarines—continue to age. We often say that, in today’s American armed forces, people are our most cherished commodity and greatest asset. That is certainly true at one level, through the dedication and excellence shown by our brave men and women in uniform. But it is also true that adjusting the personnel size of the military up or down has been done with success multiple times, and seems likely to happen again. By contrast, scientific and manufacturing excellence in the defense space is not something easily moved up and down. Today’s industrial capabilities took decades to build and would be hard to restore if lost (Great Britain’s difficulty restoring its ability to build nuclear submarines is a frequently cited example.). Unlike the period just after the Cold War, there are no obvious surpluses of defense firms, such that a natural paring process will find the fittest firms and ensure their survival. While there are roughly five major firms, there are often just one or two suppliers in any given major area of defense technology. Similar challenges exist within the subcontractor community, which has become highly specialized, with certain key components or capabilities similarly reflecting monopolies or oligopolies, or being acquired by the primes in a way that risks future competition. The defense economy is also experiencing meta-changes in everything from shifts in traditional sectors, such as the move from manned to unmanned planes, to new sectors arising like cybersesecurity, to a broader move from the exclusive production of goods to the growing provision of defense services. Such issues in the defense economy also touch on broader areas of national economic and geopolitical competitiveness. Top class American firms rely on top class scientists and engineers. At present, the United States ranks in the lower half of industrial countries for the average math and science scores of its public school students and graduates just a fraction as many scientists and engineers a year from university-level studies as does either China or India. These trends should not be overstated; the quality of American scientists and engineers remains world class. But the trends still pose deep worries in the American defense industrial field as its looks towards the future of its work force, which is aging rapidly in numerous sectors. Not only then are the U.S. military services, but also American defense industry at a crossroads. Normally, defense policy decisions in times of retrenchment begin with strategy, threats, missions, and force structure and only address defense industrial issues as an afterthought. In past days of flush budgets and numerous duplicative suppliers, this approach may have made sense. It makes sense no longer. Careless defense reductions or poor planning won’t just cost jobs or competitiveness, but could actually result in lost American military industrial capability in core areas. The Department of Defense has recently made some encouraging moves towards emphasizing the role of the industrial base in its strategic and budgetary planning. The 2010 Quadrennial Defense Review examined the subject, for example, and Secretary Panetta and his deputies have convened several meetings in recent months with industry leaders to discuss their concerns. But industrial base considerations remain little discussed outside the specialist community and too frequently take a short term or single interest approach, such as asking a candidate to weigh in on an individual product or firm. Rather, it is the overall state of the field and its future that should be of concern to all, regardless of where they stand on the political spectrum. Thus, as presidential candidates and other national leaders develop their platforms for the 2012 elections and beyond, any serious discussion of national security and the current state and future of the military must also give direct attention to matters of the American national security scientific and industrial base. This discussion should be direct and forthright, recognizing the context of severe budgetary dilemmas for the nation, the success and challenges of the defense economy, changing military demands, and the gradual erosion of American manufacturing in many sectors over the last several decades. Among the core questions for candidates to develop their policy answers around are: 4 1. Are there any sectors within American defense industry or types of technologies for the Department of Defense that should be prioritized? If this is the case, what should be prioritized and what are the areas that are not quite as important as others—or even over resourced at present? 2. The Department of Defense is likely to reduce the size of the nation’s ground forces considerably in the years ahead, as the war in Afghanistan gradually winds down. Does this imply prioritizing investment in Air-Sea battle capabilities at the expense of ground force capability, or should the United States try to do all with less? 3. Do the Pentagon and Congress have enough tools for evaluating the strength of the nation’s industrial base and its access to key raw materials and technologies? If not, what should be done to give this subject greater scrutiny and sustained attention? 4. Should the Department of Defense move to more fixed-price contracts in its procurement policies? Should private companies be allowed to compete for a higher share of maintenance contracts, even if that means downsizing government depots? 5. Is the Pentagon’s increased focus on enlarging its acquisition oversight workforce making the acquisition process more innovative, economical, and efficient or more burdensome and bureaucratic? 6. Are there tools of export and trade policy that need to be adjusted to strengthen the U.S. defense industrial base? If so, what? Is the FMS program basically sound? Does the consolidation of export control lists within Commerce bode well or are other steps needed? 7. Are there certain allies from which the United States should be willing to import more defense technology, especially if the improved trade opportunities are reciprocated? Should we explore pooling and joint production options with our close allies, along the lines of what Britain and France have recently launched? 8. How should the nation strengthen STEM education in the United States, in high schools and colleges, to encourage more Americans to pursue careers in science, technology, engineering, and math? Does the nation need to revise any of its immigration and green-card policies to increase the ability of foreign scientists to remain in this country after studying here and contribute to its scientific and industrial strength? 9. Do government regulations and requirements deter new and innovative firms from entering the defense market to the detriment of the nation’s military? If so, what should be done to induce their entry? 10. Are there any other policy interventions that might be needed to ensure American military technological preeminence in the years ahead? A certain floor under R&D budgets? Targeted sustainment funding for specific capabilities such as independent weapons design teams at numerous firms? Greater DoD contributions to research and prototyping by defense firms? The United States, and its civilian leaders, cannot afford to avoid the hard questions that now come with maintaining a strong successful military, a top flight defense industrial base, and a fiscally sound national economy. Our defense industrial base is certainly not broken, but there are clear, unavoidable challenges that loom, which might undercut broader national security, and the looming big budget cutbacks raise the stakes and heighten the sense of urgency in addressing the issue. In sum, the arsenal of democracy that arms the best military in the world, took decades to build. If allowed to atrophy, it would take decades to rebuild. Those who would seek to lead the U.S. armed forces must answer the key questions to ensure these capabilities are not lost in a matter of years.

#### Independently de-escalates conflict and deters balancing

Mark Zachary Taylor (Ph.D. candidate, lecturer, and research assistant in the Department of Political Science at Massachusetts Institute of Technology) 2004 “The Politics of Technological Change: International Relations versus Domestic Institutions” http://web.mit.edu/polisci/research/wip/Taylor.pdf

Technological innovation is of central importance to the study of international relations (IR), affecting almost every aspect of the sub-field.2 First and foremost, a nation’s technological capability has a significant effect on its economic growth, industrial might, and military prowess; therefore relative national technological capabilities necessarily influence the balance of power between states, and hence have a role in calculations of war and alliance formation. Second, technology and innovative capacity also determine a nation’s trade profile, affecting which products it will import and export, as well as where multinational corporations will base their production facilities.3 Third, insofar as innovation-driven economic growth both attracts investment and produces surplus capital, a nation’s technological ability will also affect international financial flows and who has power over them.4 Thus, in broad theoretical terms, technological change is important to the study of IR because of its overall implications for both the relative and absolute power of states. And if theory alone does not convince, then history also tells us that nations on the technological ascent generally experience a corresponding and dramatic change in their global stature and influence, such as Britain during the first industrial revolution, the United States and Germany during the second industrial revolution, and Japan during the twentieth century.5 Conversely, great powers which fail to maintain their place at the technological frontier generally drift and fade from influence on international scene.6 This is not to suggest that technological innovation alone determines international politics, but rather that shifts in both relative and absolute technological capability have a major impact on international relations, and therefore need to be better understood by IR scholars indirect source of military doctrine. And for some, like Gilpin quoted above, technology is the very cornerstone of great power domination, and its transfer the main vehicle by which war and change occur in world politics.8 Jervis tells us that the balance of offensive and defensive military technology affects the incentives for war.9 Walt agrees, arguing that technological change can alter a state’s aggregate power, and thereby affect both alliance formation and the international balance of threats.10 Liberals are less directly concerned with technological change, but they must admit that by raising or lowering the costs of using force, technological progress affects the rational attractiveness of international cooperation and regimes.11 Technology also lowers information & transactions costs and thus increases the applicability of international institutions, a cornerstone of Liberal IR theory.12 And in fostering flows of trade, finance, and information, technological change can lead to Keohane’s interdependence13 or Thomas Friedman et al’s globalization.14 Meanwhile, over at the “third debate”, Constructivists cover the causal spectrum on the issue, from Katzenstein’s “cultural norms” which shape security concerns and thereby affect technological innovation;15 to Wendt’s “stripped down technological determinism” in which technology inevitably drives nations to form a world state.16 However most Constructivists seem to favor Wendt, arguing that new technology changes people’s identities within society, and sometimes even creates new cross-national constituencies, thereby affecting international politics.17 Of course, Marxists tend to see technology as determining all social relations and the entire course of history, though they describe mankind’s major fault lines as running between economic classes rather than nation-states.18 Finally, Buzan & Little remind us that without advances in the technologies of transportation, communication, production, and war, international systems would not exist in the first place.19

#### Prefer our internal links – explains the last five centuries of global hegemons

Daniel Drezner (professor of international politics at The Fletcher School of Law and Diplomacy at Tufts University) 2001 “State structure, technological leadership and the maintenance of hegemony” http://www.danieldrezner.com/research/tech.pdf

In this decade, proponents of globalization argue that because information and capital are mobile, the location of innovation has been rendered unimportant.6 While this notion has some popular appeal, the globalization thesis lacks theoretical or empirical support. Theoretically, even in a world of perfect information and perfect capital mobility, economists have shown that the location of technological innovation matters.7 Empirically, the claims of globalization proponents have been far-fetched. Capital is not perfectly mobile, and increased economic exchange does not lead to a seamless transfer of technology from one country to another.8 The location of innovation still matters. Long-cycle theorists have paid the most attention to the link between technological innovation, economic growth, and the rise and fall of hegemons.9 They argue that the past five hundred years of the global political economy can be explained by the waxing and waning of hegemonic powers. Countries acquire hegemonic status because they are the first to develop a cluster of technologies in leading sectors. These innovations generate spillover effects to the rest of the lead economy, and then to the global economy. Over time, these ‘technological hegemons’ fail to maintain the rate of innovations, leading to a period of strife until a new hegemonic power is found.

#### Heg is splendid Brzezinski, 12 [1/24/12, Zbigniew, Former National Security Advisor to President of the Great United States Jimmy Carter, Professor of American Foreign Policyat [Johns Hopkins University](http://en.wikipedia.org/wiki/Johns_Hopkins_University)'s [School of Advanced International Studies](http://en.wikipedia.org/wiki/Johns_Hopkins_SAIS), scholar at the Center for Strategic and International Studies, Strategic Vision: America and the Crisis of Global Power (Kindle Locations 1476-1485). Perseus Books Group. Kindle Edition]

An American decline would impact the nuclear domain most profoundly by inciting a **crisis of confidence** in the credibility of the American nuclear umbrella. Countries like South Korea, Taiwan, Japan, Turkey, and even Israel, among others, rely on the United States’ extended nuclear deterrence for security. If they were to see the United States slowly retreat from certain regions, forced by circumstances to pull back its guarantees, or even if they were to lose confidence in standing US guarantees, because of the financial, political, military, and diplomatic consequences of an American decline, then they will have to seek security elsewhere. That “elsewhere” security could originate from only two sources: from nuclear weapons of one’s own or from the extended deterrence of another power—most likely Russia, China, or India. It is possible that countries that feel threatened by the ambition of existing nuclear weapon states, the addition of new nuclear weapon states, or the decline in the reliability of American power would develop their own nuclear capabilities. For crypto-nuclear powers like Germany and Japan, the path to nuclear weapons would be easy and fairly quick, given their extensive civilian nuclear industry, their financial success, and their technological acumen. Furthermore, the continued existence of nuclear weapons in North Korea and the potentiality of a nuclear-capable Iran could prompt American allies in the Persian Gulf or East Asia to build their own nuclear deterrents. Given North Korea’s increasingly aggressive and erratic behavior, the failure of the six-party talks, and the widely held distrust of Iran’s megalomaniacal leadership, the guarantees offered by a declining America’s nuclear umbrella might not stave off a regional nuclear arms race among smaller powers. Last but not least, even though China and India today maintain a responsible nuclear posture of minimal deterrence and “no first use,” the uncertainty of an increasingly nuclear world could force both states to reevaluate and escalate their nuclear posture. Indeed, they as well as Russia might even become inclined to extend nuclear assurances to their respective client states. Not only could this signal a renewed regional nuclear arms race between these three aspiring powers but it could also create new and antagonistic **spheres of influence** in Eurasia driven by competitive nuclear deterrence. The decline of the United States would thus precipitate drastic changes to the nuclear domain. An increase in proliferation among insecure American allies and/or an arms race between the emerging Asian powers are among the more likely outcomes. This ripple effect of proliferation would undermine the transparent management of the nuclear domain and increase the likelihood of **interstate rivalry, miscalc**ulation, and eventually even perhaps of international **nuclear terror**. In addition to the foregoing, in the course of this century the world will face a series of novel geopolitical challenges brought about by significant changes in the physical environment. The management of those changing environmental commons—the growing scarcity of fresh water, the opening of the Arctic, and global warming—will require global consensus and mutual sacrifice. American leadership alone is not enough to secure cooperation on all these issues, but a decline in American influence would reduce the likelihood of achieving cooperative agreements on environmental and resource management. America’s retirement from its role of global policeman could create greater opportunities for emerging powers to further exploit the environmental commons for their own economic gain, **increasing the chances of resource-driven conflict**, particularly in Asia. The latter is likely to be the case especially in regard to the increasingly scarce water resources in many countries. According to the United States Agency for International Development (USAID), by 2025 more than 2.8 billion people will be living in either water-scarce or water-stressed regions, as global demand for

water will double every twenty years.9 While much of the Southern Hemisphere is threatened by potential water scarcity, interstate conflicts—the geopolitical consequences of cross-border water scarcity—are most likely to occur in Central and South Asia, the Middle East, and northeastern Africa, regions where limited water resources are shared across borders and political stability is transient. The combination of political insecurity and resource scarcity is a menacing geopolitical combination. The threat of water conflicts is likely to intensify as the economic growth and increasing demand for water in emerging powers like Turkey and India collides with instability and resource scarcity in rival countries like Iraq and Pakistan. Water scarcity will also test China’s internal stability as its burgeoning population and growing industrial complex combine to increase demand for and decrease supply of usable water. In South Asia, the never-ending political tension between India and Pakistan combined with overcrowding and Pakistan’s heightening internal crises may put the Indus Water Treaty at risk, especially because the river basin originates in the long-disputed territory of Jammu and Kashmir, an area of ever-increasing political and military volatility. The lingering dispute between India and China over the status of Northeast India, an area through which the vital Brahmaputra River flows, also remains a serious concern. As American hegemony disappears and **regional competition intensifies**, disputes over natural resources like water have the potential to develop into **full-scale conflicts**. The slow thawing of the Arctic will also change the face of the international competition for important resources. With the Arctic becoming increasingly accessible to human endeavor, the five Arctic littoral states—the United States, Canada, Russia, Denmark, and Norway—may rush to lay claim to its bounty of oil, gas, and metals. This run on the Arctic has the potential to cause severe shifts in the geopolitical landscape, particularly to Russia’s advantage. As Vladimir Radyuhin points out in his article entitled “The Arctic’s Strategic Value for Russia,” Russia has the most to gain from access to the Arctic while simultaneously being the target of far north containment by the other four Arctic states, all of which are members of NATO. In many respects this new great game will be determined by who moves first with the most legitimacy, since very few agreements on the Arctic exist. The first Russian supertanker sailed from Europe to Asia via the North Sea in the summer of 2010.10 Russia has an immense amount of land and resource potential in the Arctic. Its territory within the Arctic Circle is 3.1 million square kilometers—around the size of India—and the Arctic accounts for 91% of Russia’s natural gas production, 80% of its explored natural gas reserves, 90% of its offshore hydrocarbon reserves, and a large store of metals.11 Russia is also attempting to increase its claim on the territory by asserting that its continental shelf continues deeper into the Arctic, which could qualify Russia for a 150-mile extension of its Exclusive Economic Zone and add another 1.2 million square kilometers of resource-rich territory. Its first attempt at this extension was denied by the UN Commission on the Continental Shelf, but it is planning to reapply in 2013. Russia considers the Arctic a true extension of its northern border and in a 2008 strategy paper President Medvedev stated that the Arctic would become Russia’s “main strategic resource base” by 2020.12 Despite recent conciliatory summits between Europe and Russia over European security architecture, a large amount of uncertainty and distrust stains the West’s relationship with Russia. The United States itself has always maintained a strong claim on the Arctic and has continued patrolling the area since the end of the Cold War. This was reinforced during the last month of President Bush’s second term when he released a national security directive stipulating that America should “preserve the global mobility of the United States military and civilian vessels and aircraft throughout the Arctic region.” The potentiality of an American decline could embolden Russia to more forcefully assert its control of the Arctic and over Europe via energy politics; though much depends on Russia’s political orientation after the 2012 presidential elections. All five Arctic littoral states will benefit from a peaceful and cooperative agreement on the Arctic—similar to Norway’s and Russia’s 2010 agreement over the Barents Strait—and the geopolitical stability it would provide. Nevertheless, political circumstances could rapidly change in an environment where control over energy remains Russia’s single greatest priority. Global climate change is the final component of the environmental commons and the one with the greatest potential geopolitical impact. Scientists and policy makers alike have projected catastrophic consequences for mankind and the planet if the world average temperature rises by more than two degrees over the next century. Plant and animal **species could grow extinct** at a rapid pace, large-scale **ecosystems** **could** **collapse**, human **migration** could increase to untenable levels, and global **economic development could be** categorically **reversed**. Changes in geography, forced migration, and global economic contraction layered on top of the perennial regional security challenges could create a geopolitical reality of **unmanageable** complexity and **conflict**, especially in the densely populated and politically unstable areas of Asia such as the Northeast and South. Furthermore, any legitimate action inhibiting global climate change will require unprecedented levels of self-sacrifice and international cooperation. The United States does consider climate change a serious concern, but its lack of both long-term strategy and political commitment, evidenced in its refusal to ratify the Kyoto Protocol of 1997 and the repeated defeat of climate-change legislation in Congress, deters other countries from participating in a global agreement. The United States is the second-largest global emitter of carbon dioxide, after China, with 20% of the world’s share. The United States is the number one per capita emitter of carbon dioxide and the global leader in per capita energy demand. Therefore, US leadership is essential in not only getting other countries to cooperate, but also in actually inhibiting climate change. Others around the world, including the European Union and Brazil, have attempted their own domestic reforms on carbon emissions and energy use, and committed themselves to pursuing renewable energy. Even China has made reducing emissions a goal, a fact it refuses to let the United States ignore. But none of those nations currently has the ability to lead a global initiative. President Obama committed the United States to energy and carbon reform at the Copenhagen Summit in 2009, but the increasingly polarized domestic political environment and the truculent American economic recovery are unlikely to inspire progress on costly energy issues. China is also critically important to any discussion of the management of climate change as it produces 21% of the world’s total carbon emissions, a percentage that will only increase as China develops the western regions of its territory and as its citizens experience a growth in their standard of living. China, however, has refused to take on a leadership role in climate change, as it has also done in the maritime, space, and cyberspace domains. China uses its designation as a developing country to shield itself from the demands of global stewardship. China’s tough stance at the 2009 Copenhagen Summit underscores the potential dangers of an American decline: no other country has the capacity and the desire to accept global stewardship over the environmental commons. Only a vigorous Unites States could lead on climate change, given Russia’s dependence on carbon-based energies for economic growth, India’s relatively low emissions rate, and China’s current reluctance to assume global responsibility. The protection and good faith management of the global commons—**sea**, **space**, **cyberspace**, nuclear **prolif**eration, **water** security, **the Arctic**, and **the environment** itself—**are imperative to** the long-term growth of the global economy and **the continuation of** basic geopolitical **stability**. But in almost every case, the potential absence of constructive and influential US leadership would fatally undermine the essential communality of the global commons.     The argument that America’s decline would generate global insecurity, endanger some vulnerable states, produce a more troubled North American neighborhood, and make cooperative management of the global commons more difficult is not an argument for US global supremacy. In fact, the strategic complexities of the world in the twenty-first century—resulting from the rise of a politically self-assertive global population and from the dispersal of global power—make such supremacy unattainable. But in this increasingly complicated geopolitical environment, an America in pursuit of a new, timely strategic vision is crucial to helping the world avoid a dangerous slide into international turmoil.

#### Unipolarity is comparatively less violent—primacy stops war and re-intervention

**Busby, 12** [Get Real Chicago IR guys out in force, Josh, Assistant Professor of Public Affairs and a fellow in the RGK Center for Philanthropy and Community Service as well as a Crook Distinguished Scholar at the Robert S. Strauss Center for International Security and Law. <http://duckofminerva.blogspot.com/2012/01/get-real-chicago-ir-guys-out-in-force.html>]

Is Unipolarity Peaceful? As evidence, Monteiro provides metrics of the number of years during which great powers have been at war. For the unipolar era since the end of the Cold War, the United States has been at war 13 of those 22 years or 59% (see his Table 2 below). Now, I've been following some of the discussion by and about Steven Pinker and Joshua Goldstein's [work](http://www.nytimes.com/2011/12/18/opinion/sunday/war-really-is-going-out-of-style.html?pagewanted=all) that suggests the world is becoming more peaceful with interstate wars and intrastate wars becoming more rare. I was struck by the graphic that Pinker used in a Wall Street Journal [piece](http://online.wsj.com/article/SB10001424053111904106704576583203589408180.html) back in September that drew on the Uppsala Conflict Data, which shows a steep decline in the number of deaths per 100,000 people. How do we square this account by Monteiro of a unipolar world that is not peaceful (with the U.S. at war during this period in Iraq twice, Afghanistan, Kosovo) and Pinker's account which suggests declining violence in the contemporary period? Where Pinker is focused on systemic outcomes, Monteiro's measure merely reflect years during which the great powers are at war. Under unipolarity, there is only one great power so the measure is partial and not systemic. However, Monteiro's theory aims to be systemic rather than partial. In critiquing Wohlforth's early work on unipolarity stability, Monteiro notes: Wohlforth’s argument does not exclude all kinds of war. Although power preponderance allows the unipole to manage conflicts globally, this argument is not meant to apply to relations between major and minor powers, or among the latter (17). So presumably, **a more adequate test of the peacefulness or not of unipolarity** (at least for Monteiro) is not the number of years the great power has been at war **but whether the system as a whole is becoming more peaceful under unipolarity compared to previous eras**, including wars between major and minor powers or wars between minor powers and whether the wars that do happen are as violent as the ones that came before. Now, as Ross Douthat pointed [out](http://douthat.blogs.nytimes.com/2011/10/17/steven-pinkers-history-of-violence/), Pinker's argument isn't based on a logic of benign hegemony. It could be that even if the present era is more peaceful, unipolarity has nothing to do with it. Moreover, Pinker may be wrong. Maybe the world isn't all that peaceful. I keep thinking about the places I don't want to go to anymore because they are violent (Mexico, Honduras, El Salvador, Nigeria, Pakistan, etc.) As Tyler Cowen [noted](http://marginalrevolution.com/marginalrevolution/2011/10/steven-pinker-on-violence.html), the measure Pinker uses to suggest violence is a per capita one, which doesn't get at the absolute level of violence perpetrated in an era of a greater world population. **But, if my read of other** [**reports**](http://www.hsrgroup.org/human-security-reports/20092010/graphs-and-tables.aspx) **based on Uppsala data is right, war is becoming more rare and less deadly** (though later [data](http://www.pcr.uu.se/research/ucdp/charts_and_graphs/) suggests lower level armed conflict may be increasing again since the mid-2000s). The apparent violence of the contemporary era may be something of a presentist bias and reflect our own lived experience and the ubiquity of news media .Even if the U.S. has been at war for the better part of unipolarity, the deadliness is declining, even compared with Vietnam, let alone World War II. Does Unipolarity Drive Conflict? So, I kind of took issue with the Monteiro's premise that unipolarity is not peaceful. What about his argument that unipolarity drives conflict? Monteiro suggests that the unipole has three available strategies - defensive dominance, offensive dominance and disengagement - though is less likely to use the third. Like Rosato and Schuessler, Monteiro suggests because other states cannot trust the intentions of other states, namely the unipole, that minor states won't merely bandwagon with the unipole. Some "recalcitrant" minor powers will attempt to see what they can get away with and try to build up their capabilities. As an aside, in Rosato and Schuessler world, unless these are located in strategically important areas (i.e. places where there is oil), then the unipole (the United States) should disengage. In Monteiro's world, disengagement would inexorably lead to instability and draw in the U.S. again (though I'm not sure this necessarily follows), but neither defensive or offensive dominance offer much possibility for peace either since it is U.S. power in and of itself that makes other states insecure, even though they can't balance against it.

### Warming

#### CO2 emissions will run away in the status quo—natural gas is the only effective alternative to coal—U.S. development is modeled globally and prevents extinction

Riley 8/13—BA, LL.M., PhD, professor of energy law at The City Law School at City University London (Alan, 8/13/12, “Shale Gas to the Climate Rescue,” http://www.nytimes.com/2012/08/14/opinion/shale-gas-to-the-climate-rescue.html, RBatra)

The battle against runaway climate change is being lost. The green movement and the energy industry — while engaged in a furious debate on issues from nuclear power to oil sands — are missing the bigger picture.

There is little recognition by either side that current policies to reduce carbon dioxide emissions are inadequate for dealing with the threat that they pose. It is the coal-fueled growth of countries like China and India that generates much of these emissions. Unless a cheap, rapidly deployable substitute fuel is found for coal, then it will be next to impossible to safely rein in rising carbon dioxide levels around the world.

Although the green movement might at first see shale gas as an enemy in this fight, it may in fact turn out to be a friend. Broad development of shale gas resources — with proper ecological safeguards — could be the best way to achieve the quick cuts in carbon dioxide emissions that we need to maintain a habitable environment on Earth.

The International Energy Agency has made it clear that, under current energy policies, the door is closing on our attempts to contain the carbon-driven rise in global temperatures to within 2 degrees Celsius (3.6 Fahrenheit) by the middle of the century. In fact, worldwide carbon dioxide emissions from burning fossil fuels reached a record high of 31.6 gigatons in 2011. With emissions rising by one gigaton per year, it appears the temperature-increase target will most likely be missed.

The shale gas revolution could be the means of blunting the rise of carbon dioxide emissions and give new hope for staying within the 2 degrees Celsius scenario. This resource is widely dispersed across the planet, cheap to develop and offers many of the same energy benefits as coal. If exploited properly, it could replace coal within a couple of decades as a primary fuel.

By developing shale gas as a replacement fuel for coal we retrieve the prospect of blunting — and possibly reversing — the upward climb of carbon dioxide emissions. Shale gas emits 50 percent less carbon dioxide than coal, and so if countries like China and India made the switch on a large scale, then we have a chance to reset the trajectory of global carbon dioxide emissions.

A widespread turn to the use of shale gas would give the planet precious time to develop other, renewable solutions to further lower our output of carbon dioxide. Current renewable energy sources cannot in any way deliver the same savings in carbon emissions that we can achieve by replacing coal with shale gas.

One only has to look to China to see the strong potential of this solution. With the world’s largest shale gas resources, the country has set out a vast gas development program in its latest five-year economic plan. Output would rise from 6.5 billion cubic meters of shale gas by 2015 to 100 billion cubic meters by 2020. And if China can produce that much by 2020, is there any reason to think it cannot pump out 800 billion cubic meters by 2030?

Such a development program would be similar in scale to that undertaken in the United States, which has seen shale gas rise from 1 percent of gas production in 2001 to 37 percent last year.

China can surely achieve these goals, especially given all the new technology available to the shale gas industry, along with abundant state capital. That the government is focusing its efforts in this direction is another reason to believe that China can reach these production levels. An output of 800 billion cubic meters a year — combined with far-higher levels of energy efficiency — would allow China to slow, and then terminate, its coal-expansion plans and ultimately end its reliance on coal-fired energy altogether.

The United States could play a key role in encouraging China and other developing nations to switch from coal to shale gas. The State Department has launched a Global Shale Gas Initiative to facilitate the transfer of technical expertise to other countries to ensure safe development of this new resource. The United States could also lead the way in creating a credible, alternative climate change strategy in which the use of shale gas becomes the driver of radical cuts in carbon dioxide emissions over the short and medium term.

#### And, natural gas acts as a bridge fuel—spurring broad renewable development

Ju 12 – Anne Ju (senior science writer for the Cornell Chronicle) July 17, 2012 “Study Proves Natural Gas Can Bridge the Gap to a Clean Energy Economy” <http://oilprice.com/Energy/Natural-Gas/Study-Proves-Natural-Gas-Can-Bridge-the-Gap-to-a-Clean-Energy-Economy.html>

Natural gas is a good transition step on the road to greener energy sources like wind, solar, and nuclear power, says a new study. Lawrence M. Cathles, Cornell University professor of earth and atmospheric sciences, says natural gas is a smart move in the battle against global climate change. Published in the most recent edition of the journal Geochemistry, Geophysics and Geosystems, Cathles’ study reviews the most recent government and industry data on natural gas “leakage rates” during extraction, as well as recently developed climate models. He concludes that regardless of the time frame considered, substituting natural gas energy for all coal and some oil production provides about 40 percent of the global warming benefit that a complete switch to low-carbon sources would deliver. “From a greenhouse point of view, it would be better to replace coal electrical facilities with nuclear plants, wind farms, and solar panels, but replacing them with natural gas stations will be faster, cheaper, and achieve 40 percent of the low-carbon-fast benefit,” Cathles writes in the study. “Gas is a natural transition fuel that could represent the biggest stabilization wedge available to us.” Cathles’ study includes additional findings about expanding the use of natural gas as an energy source, as well as the climate impact of “unconventional” gas drilling methods, including hydraulic fracturing in shale formations. They include the following: • Although a more rapid transition to natural gas from coal and some oil produces a greater overall benefit for climate change, the 40 percent of low-carbon energy benefit remains no matter how quickly the transition is made, and no matter the effect of ocean modulation or other climate regulating forces. • Although some critics of natural gas as a transition fuel have cited leakage rates as high as 8 percent or more of total production during drilling—particularly hydraulic fracturing extraction—more recent industry data and a critical examination of Environmental Protection Agency data supports leakage rates closer to 1.5 percent for both conventional and hydrofractured wells. • Even at higher leakage rates, using natural gas as a transition to low-carbon energy sources is still a better policy than “business as usual” with coal and oil, due to the different rates of decay (and hence long-term global warming effect) of carbon dioxide released in greater amounts by burning coal and oil and any methane released during natural gas extraction. • Using natural gas as a transition fuel supports the push to low-carbon sources by providing the “surge capacity” when needed, or a buffer when solar and wind production wanes. “The most important message of the calculations reported here is that substituting natural gas for coal and oil is a significant way to reduce greenhouse forcing, regardless of how long the substitution takes,” Cathles writes. “A faster transition to low-carbon energy sources would decrease greenhouse warming further, but the substitution of natural gas for other fossil fuels is equally beneficial in percentage terms no matter how fast the transition.”

#### Warming risks extinction

**Cummins and Allen 10** (Ronnie, Int’l. Dir. – Organic Consumers Association, and Will, Policy Advisor – Organic Consumers Association, “Climate Catastrophe: Surviving the 21st Century”, 2-14, http://www.commondreams.org/view/2010/02/14-6)

The hour is late. Leading climate scientists such as James Hansen are literally shouting at the top of their lungs that the world needs to reduce emissions by 20-40% as soon as possible, and 80-90% by the year 2050, if we are to avoid climate chaos, **crop failures, endless wars, melting of the polar icecaps, and a disastrous rise in ocean levels**. Either we radically reduce CO2 and carbon dioxide equivalent (CO2e, which includes all GHGs, not just CO2) pollutants (currently at 390 parts per million and rising 2 ppm per year) to 350 ppm, including agriculture-derived methane and nitrous oxide pollution, or else **survival for the present and future generations is in jeopardy**. As scientists warned at Copenhagen, business as usual and a corresponding 7-8.6 degree Fahrenheit rise in global temperatures means that the carrying capacity of the Earth in 2100 will be reduced to one billion people. **Under this hellish scenario, billions will die** of thirst, cold, heat, disease, war, and starvation. If the U.S. significantly reduces greenhouse gas emissions, other countries will follow. One hopeful sign is the recent EPA announcement that it intends to regulate greenhouse gases as pollutants under the Clean Air Act. Unfortunately we are going to have to put tremendous pressure on elected public officials to force the EPA to crack down on GHG polluters (including industrial farms and food processors). Public pressure is especially critical since "just say no" Congressmen-both Democrats and Republicans-along with agribusiness, real estate developers, the construction industry, and the fossil fuel lobby appear determined to maintain "business as usual."

#### Warming is real and causes extinction, we’ve got some dope charts to prove it

**Romm, ’12** Fellow at American Progress and is the editor of Climate Progress, which New York Times columnist Tom Friedman called "the indispensable blog" and Time magazine named one of the 25 "Best Blogs of 2010." In 2009, Rolling Stone put Romm #88 on its list of 100 "people who are reinventing America." Time named him a "Hero of the Environment″ and “The Web’s most influential climate-change blogger." Romm was acting assistant secretary of energy for energy efficiency and renewable energy in 1997, where he oversaw $1 billion in R&D, demonstration, and deployment of low-carbon technology. He is a Senior Fellow at American Progress and holds a Ph.D. in physics from MIT (Joe Romm, ThinkProgress, 16 December 2012, “Leaked IPCC Draft Report: Recent Warming Is Manmade, Cloud Feedback Is Positive, Inaction Is Suicidal,” http://thinkprogress.org/climate/2012/12/16/1334921/leaked-ipcc-draft-report-recent-warming-is-manmade-cloud-feedback-is-positive-inaction-is-suicidal/?mobile=nc)//CC

#### Ultra-conservative report still concludes sea level rise could reach 6 inches a decade by century’s end! Deniers duped by leaker’s blunder. http://thinkprogress.org/wp-content/uploads/2012/12/RCPs1.jpg Figure SPM.6.a. Warming in two IPCC scenarios reveals humanity’s choice. With aggressive action to reduce greenhouse gas emissions (RCP 2.6 with 443 ppm of CO2 in 2100), warming is modest and adaptation is plausible. With continued inaction (RCP 8.5 with 936 ppm in 2100), warming is a catastrophic and unmanageable 10°F over much of Earth’s habited and arable land — and more than 15°F over the Arctic. This projection ignores many key amplifying feedbacks, such as the release of permafrost carbon, which would likely lead to far greater warming. The draft 2013 Fifth Assessment report of the Intergovernmental Panel on Climate Change [leaked this week](http://www.guardian.co.uk/environment/2012/dec/14/ipcc-climate-change-report-leaked-online) makes clear inaction on climate change would be devastating to modern civilization. The report finds that the human fingerprint on climate has grown more obvious, concluding “it is virtually certain” the energy imbalance that causes global warming “is caused by human activities, primarily by the increase in CO2 concentrations. There is very high confidence that natural forcing contributes only a small fraction to this imbalance.” Yes, I know, the easily-duped deniers and their media stooges have reported the opposite is true, that solar forcing has been a significant driver of recent warming, but the deniers are as likely to be right as the flat earthers. The only question is why anyone still listens to them. I’ll repost a debunking of their nonsense below. The draft [Summary for Policymakers](http://www.stopgreensuicide.com/SummaryForPolicymakers_WG1AR5-SPM_FOD_Final.pdf) (the only thing 99% of people will ever read) finds: It is extremely likely [">95% probability"] that human activities have caused more than half of the observed increase in global average surface temperature since the 1950s. There is high confidence ["[About 8 out of 10 chance](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch1s1-6.html)"] that this has caused large-scale changes in the ocean, in the cryosphere, and in sea level in the second half of the 20th century. Some extreme events have changed as a result of anthropogenic influence. That multiply-hedged morass is pretty much the mildest statement that could possibly be made. A December 2011 study found it’s [“Extremely Likely That at Least 74% of Observed Warming Since 1950″](http://thinkprogress.org/climate/2011/12/05/382209/observed-warming-since-1950-was-manmade/) was manmade; it’s highly likely all of it was (see Figure 1 below). For me, the leaked draft, which has not yet been peer reviewed — and thus still has time to be watered down yet more – underscores how pointless the IPCC has become. Like the 4th assessment before it, this ultra-conservative and instantly obsolete report ignores the latest science — see “[Fifth Assessment Report Will Ignore Crucial Permafrost Carbon Feedback!](http://thinkprogress.org/climate/2012/12/02/1253931/ipccs-planned-obsolescence-fifth-assessment-report-will-ignore-crucial-permafrost-carbon-feedback/)” Note that including the permafrost feedback would probably make the RCP8.5 scenario in the top figure as much as [1.5°F warmer](http://thinkprogress.org/climate/2012/10/06/970721/carbon-feedback-from-thawing-permafrost-will-add-04f-15f-to-total-global-warming-by-2100/)! And like the AR4, the AR5 scenarios low-ball future impacts — “Arctic sea ice area is projected to decrease by 28% for September” for the 2016–2035 period vs. 1986–2005. Seriously IPCC, a 28% drop is the scenario your touting? In fact, as we have reported, many experts warn of [“Near Ice-Free Arctic In Summer”](http://thinkprogress.org/climate/2012/09/05/799761/death-spiral-watch-experts-warn-near-ice-free-arctic-in-summer-in-a-decade-volume-trends-continue/) in a decade if recent ice volume trends continue. Even so, the uber-conservative AR5 draft makes clear to anyone who reads between the lines that inaction would be suicidal for humanity, with devastating warming and sea level rise that could hit a half a foot a decade by 2100. How precisely does one adapt to that? Indeed, the report guts the one remaining myth of those who downplay future impacts, that clouds would act as a negative (or weakening) feedback. It finds: The net radiative feedback due to all cloud types is likely positive. But the report fails to clearly spell out what the recent science says about inaction — for that you might try “[An Illustrated Guide to the Science of Global Warming Impacts](http://thinkprogress.org/climate/2012/10/14/1009121/science-of-global-warming-impacts-guide/)” or the recentWorld Bank report, which warned “[A 4°C [7°F] World Can, And Must, Be Avoided” To Avert “Devastating” Impacts](http://thinkprogress.org/climate/2012/11/19/1212181/world-bank-climate-a-4c-world/). So I can’t see why AR5 would motivate anyone to act more than AR4 and thus I see little real-world value in the entire effort — see my November 2007 post, “[Absolute MUST Read IPCC Report: Debate over, further delay fatal, action not costly](http://thinkprogress.org/climate/2007/11/17/202110/must-read-ipcc-synthesis-report-debate-over-delay-fatal-action-not-costly/)“! Plus ça change, plus c’est la même chose. Once again, the authors twist themselves in pretzels to over-hedge every statement with their precise (but inaccurate!) terminology. And so we learn in the draft Summary for Policymakers (SPM): It is very likely that the Arctic sea ice cover will continue to shrink and thin in the course of the 21st century as global temperature rises. No, really, it is “very likely” — “> 90% probability” — which I guess means, what, that the IPCC seriously thinks there is an up to 10% chance Arctic sea ice cover will stop shrinking and thinning??? Observations and analysis of drought make clear it is already intensifying in many key regions thanks to global warming — see “[NOAA Bombshell: Human-Caused Climate Change Already a Major Factor in More Frequent Mediterranean Droughts](http://thinkprogress.org/climate/2011/10/27/355639/noaa-climate-change-mediterranean-droughts/)” and “[Study: Global warming is driving increased frequency of extreme wet or dry summer weather in southeast, so droughts and deluges are likely to get worse](http://thinkprogress.org/climate/2010/10/28/206947/global-warming-extreme-wet-dry-summer-weather-in-southeast-droughts-and-deluges/).” But all AR5 can muster up for the probability of future “increases in frequency and/or intensity of drought” is “Likely [> 66% probability] in some regions” — which I guess means the IPCC thinks there is 1 in 3 chance it won’t happen anywhere! How could that be with the kind of warming we will see in the RCP8.5 scenario, which, it must be added is really just business as usual emissions and far from the worst-case? This failure to warn the public and policymakers echoes the great failing of their 2011 extreme weather report (see “[Blockbuster IPCC Chart Hints at Dust-Bowlification, But Report Is Mostly Silent on Warming’s Gravest Threat to Humanity](http://thinkprogress.org/climate/2011/11/18/371924/ipcc-chart-dust-bowlification/)“). In it most extreme scenario, RCP8.5 — about 936 ppm of CO2 in 2100 (not a worst-case in the real world because of permafrost and other feedbacks) — sea level rise in 2100 is only about 2 feet. That assumes you can figure out what this means: “The contributions from ice sheet dynamical change and anthropogenic land water storage are treated as independent of scenario, since scenario dependence cannot be evaluated on the basis of existing literature, and as having uniform probability distributions, uncorrelated with the magnitude of global climate change.” Clarity ain’t the IPCC’s strong suit. In any case, most climate scientists expect considerably higher sea level rise, especially if we don’t act. That’s what the recent literature says — see “[Sea levels may rise 3 times faster than IPCC estimated, could hit 6 feet by 2100](http://climateprogress.org/2009/12/09/sea-level-rise-six-feet-three-times-faster-than-the-ipcc-estimat/)” and “[JPL bombshell: Polar ice sheet mass loss is speeding up, on pace for 1 foot sea level rise by 2050](http://thinkprogress.org/climate/2011/03/10/207664/jpl-greenland-antarctica-ice-sheet-mass-loss-accelerating-sea-level-rise-1-foot-by-2050/).” Finally, if you read the denier blogs or columnists — and if so, you have no one to blame but yourself — you’ve probably heard something about how the IPCC finds cosmic rays are a major climate driver. In fact, the SPM finds: Cosmic rays enhance aerosol nucleation and cloud condensation nuclei production in the free troposphere, but there is high confidence that the effect is too weak to have any significant climatic influence during a solar cycle or over the last century. For debunkings of the latest denier spin, see [here](https://theconversation.edu.au/human-role-in-climate-change-now-virtually-certain-leaked-ipcc-report-11357) and [here](http://www.guardian.co.uk/environment/2012/dec/14/ipcc-climate-change-report-leaked-online) and especially [here](http://www.abc.net.au/pm/content/2012/s3654926.htm), which has an interview with the lead author of the key draft chapter. Below I’m reposting a [Skeptical Science piece](http://skepticalscience.com/ipcc-draft-leak-global-warming-not-solar.html) on the subject. IPCC Draft Report Leaked, Shows Global Warming is NOT Due to the Sun Posted on 14 December 2012 by dana1981 [Alec Rawls](http://rawls.org/), an occasional guest poster on the climate contrarian blog WattsUpWithThat who signed up to review the upcoming Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report ([as anyone can](http://igfagcr.org/index.php/bf-annoucements-blog/75-expert-review-ipcc-wgi-ar5-sod)), has [“leaked” a draft version of the report](http://wattsupwiththat.com/2012/12/13/ipcc-ar5-draft-leaked-contains-game-changing-admission-of-enhanced-solar-forcing/) and declared that it “contains game-changing admission of enhanced solar forcing.” This assertion was then [repeated by James Delingpole at The Telegraph](http://blogs.telegraph.co.uk/news/jamesdelingpole/100194166/man-made-global-warming-even-the-ipcc-admits-the-jig-is-up/) (with some added colorful language), and probably on many other climate contrarian blogs. If the IPCC was to report that the sun is a significant player in the current rapid global warming, that would indeed be major news, because [the body of peer-reviewed scientific literature and data](http://skepticalscience.com/solar-activity-sunspots-global-warming.htm)clearly show that the sun has made little if any contribution to the observed global warming over the past 50+ years (Figure 1). contributors 50 Figure 1: Percent contributions of greenhouse gases (GHGs), sulfur dioxide (SO2), the sun, volcanoes, and El Niño Southern Oscillation (ENSO) to the observed global surface warming over the past 50-65 years according to [Tett et al. 2000](http://articles.adsabs.harvard.edu/cgi-bin/nph-iarticle_query?2000ESASP.463..201T&data_type=PDF_HIGH&whole_paper=YES&type=PRINTER&filetype=.pdf) (T00, dark blue), [Meehl et al. 2004](http://journals.ametsoc.org/doi/abs/10.1175/1520-0442%282004%29017%3C3721%3ACONAAF%3E2.0.CO%3B2) (M04, red), [Stone et al. 2007](http://journals.ametsoc.org/doi/abs/10.1175/JCLI3966.1) (S07, green), [Lean and Rind 2008](http://www.skepticalscience.com/lean-and-rind-estimate-man-made-and-natural-global-warming.html) (LR08, purple), [Huber and Knutti 2011](http://www.skepticalscience.com/huber-and-knutti-quantify-man-made-global-warming.html) (HK11, light blue), [Gillett et al. 2012](http://skepticalscience.com/gillett-estimate-human-and-natural-global-warming.html)(G12, orange), and [Wigley and Santer 2012](http://skepticalscience.com/wigley-santer-2012-attribution.html) (WS12, dark green). So why would the latest IPCC report contradict these studies when its purpose is to summarize the latest and greatest scientific research? The answer is simple — it doesn’t. Rawls has completely misrepresented the IPCC report. Cosmic Source of Confusion The supposedly “game-changing admission” from the IPCC report is this: “Many empirical relationships have been reported between GCR [galactic cosmic rays] or cosmogenic isotope archives and some aspects of the climate system…The forcing from changes in total solar irradiance alone does not seem to account for these observations, implying the existence of an amplifying mechanism such as the hypothesized GCR-cloud link.” This statement refers to a hypothesis of Henrik Svensmark from the Danish National Space Institute, who has proposed that [galactic cosmic rays](http://en.wikipedia.org/wiki/Galactic_cosmic_ray) (GCRs) could exert significant influence over global temperatures. [The GCR hypothesis](http://skepticalscience.com/cosmic-rays-and-global-warming-advanced.htm) suggests that when they reach Earth, GCRs (high-energy charged particles originating from somewhere in our galaxy) are capable of “seeding” clouds; thus at times when a lot of GCRs are reaching the Earth’s surface, more clouds will form. Clouds generally have a cooling effect on the Earth’s temperature, because they reflect sunlight. So the hypothesis goes like this: high solar activity means a strong solar magnetic field, which deflects more GCRs away from Earth, which means less cloud formation, which means less sunlight is reflected away from Earth, which means more warming. This GCR-caused warming would amplify the warming already being caused by increased solar activity. Conversely, cooling from decreased solar activity would hypothetically be amplified by more GCRs on Earth, more clouds, more reflected sunlight, and thus more cooling. It’s important to note that so far [virtually all scientific research on GCRs](http://skepticalscience.com/cosmic-rays-and-global-warming-advanced.htm) has shown that they are not effective at seeding clouds and thus have very little influence over the Earth’s temperature. In fact,[as Zeke Hausfather has noted](http://wattsupwiththat.com/2012/12/13/ipcc-ar5-draft-leaked-contains-game-changing-admission-of-enhanced-solar-forcing/#comment-1172525), the leaked IPCC report specifically states this: “…there is medium evidence and high agreement that the cosmic ray-ionization mechanism is too weak to influence global concentrations of [cloud condensation nuclei] or their change over the last century or during a solar cycle in any climatically significant way.” But more importantly in this context, even if GCRs did influence global temperature, they would currently be having a cooling effect. Solar Activity is Down, Greenhouse Gases are Up Rawls also provides the following quote from the IPCC report (emphasis added): “There is very high confidence that natural forcing is a small fraction of the anthropogenic forcing. In particular, over the past three decades (since 1980), robust evidence from satellite observations of the TSI [total solar irradiance] and volcanic aerosols demonstrate a near-zero (–0.04 W m–2) change in the natural forcing compared to the anthropogenic AF increase of ~1.0 ± 0.3 W m–2.” The term “radiative forcing” refers to a global energy imbalance on Earth, which may be caused by various effects like changes in the greenhouse effect or solar activity. A positive forcing will result in warming temperatures, while a negative forcing will result in cooling. Here the IPCC is saying that since 1980, the sun and volcanoes have combined to cause a slightly negative global energy imbalance, which means they have had a slight cooling influence on global temperatures over the past three decades. Indeed, solar activity has decreased a bit over that timeframe (Figure 2). http://www.skepticalscience.com/pics/Solar_vs_Temp_basic.gif Figure 2: Global temperature (red, [NASA GISS](http://data.giss.nasa.gov/gistemp/tabledata/GLB.Ts%2BdSST.txt)) and Total solar irradiance (blue, 1880 to 1978 from[Solanki](http://www.mps.mpg.de/projects/sun-climate/data/tsi_1611.txt), 1979 to 2009 from [PMOD](http://www.pmodwrc.ch/pmod.php?topic=tsi/composite/SolarConstant)), with 11-year running averages. As we would expect, lower solar activity including a weaker solar magnetic field has translated into a slight increase in GCR flux on Earth (Figure 3). Note that on the left-hand axis of Figure 3, GCR counts decrease going up the axis in order to show the relationship with temperature, since fewer GCRs hypothetically means fewer clouds, less reflected sunlight, and higher temperatures. cosmic rays vs temps Figure 3: Global average surface temperature (red, [NASA GISS](http://data.giss.nasa.gov/gistemp/tabledata/GLB.Ts%2BdSST.txt)) vs. GCR flux on Earth (blue, [Krivova & Solanki 2003](http://www.mps.mpg.de/homes/natalie/PAPERS/2003ESASP_535__275K.pdf)), with 11-year running averages. So, if GCRs really do amplify the solar influence on global temperatures, since 1980 they are amplifying a cooling effect. In fact, [GCRs reaching Earth recently hit record high levels](http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-11-00169.1) (Figure 4), yet [temperatures are still way up](http://data.giss.nasa.gov/gistemp/graphs_v3/Fig.A2.gif). http://www.skepticalscience.com/pics/RecordCosmicRays.jpg Figure 4: Record cosmic ray flux observed in 2009 by the Advanced Composition Explorer ([NASA](http://www.nasa.gov/topics/solarsystem/features/ray_surge.html)) Physical Reality Intrudes on Rawls Rawls has argued to the contrary by claiming that the climate is still responding to the increase in solar activity from the early 20th century, and that GCRs are amplifying that solar warming from over 60 years ago. This argument is simply physically wrong. As Figure 2 illustrates, when solar activity rises, temperatures follow suit very soon thereafter. In fact, during the mid-20th century, solar activity and global surface temperatures both flattened out. Are we to believe that the planet suddenly began responding to the pre-1950 solar activity increase in 1975—2012, after not warming 1940—1975? The argument makes no physical sense. On top of that, the hypothetical GCR process is a relatively rapid one. Cloud formation from GCR seeding should occur within days, and clouds have very short lifetimes. For GCRs to have a warming effect, solar activity must be increasing right now. It is not, in fact solar activity has been essentially flat and slightly declining in recent decades. Changes in solar activity from 60+ years ago have no bearing whatsoever on GCRs today. IPCC Shows Global Warming is NOT Solar To sum up, The leaked IPCC report states that there may be some connection between GCRs and some aspects of the climate system. However, the report is also consistent with [the body of scientific literature](http://skepticalscience.com/cosmic-rays-and-global-warming-advanced.htm) in stating that research indicates GCRs are not effective at seeding clouds and have very little influence on global temperatures. Solar activity has been nearly flat and slightly decreasing in recent decades, meaning that if GCRs do amplify solar influences on climate, they are amplifying a cooling effect. The body of peer-reviewed scientific literature is very clear: [human greenhouse gas emissions](http://skepticalscience.com/its-not-us.htm), [not solar activity](http://skepticalscience.com/solar-activity-sunspots-global-warming.htm) or [galactic cosmic rays](http://skepticalscience.com/cosmic-rays-and-global-warming-advanced.htm), are causing global warming.  The leaked IPCC report is entirely consistent with this conclusion.  In fact, in attempting to argue to the contrary, Rawls has scored [an own goal](http://en.wikipedia.org/wiki/Own_goal) by showing that if anything, GCRs are currently amplifying a solar cooling effect.

#### Warming is real and causes extinction

**Morgan 9 –** Professor of Current Affairs @ Hankuk University of Foreign Studies, South Korea(Dennis Ray, “World on fire: two scenarios of the destruction of human civilization and possible extinction of the human race”, Futures, Volume 41, Issue 10, December 2009, Pages 683-693, ScienceDirect)

As horrifying as the scenario of human extinction by sudden, fast-burning nuclear fire may seem, the one consolation is that this future can be avoided within a relatively short period of time if responsible world leaders change Cold War thinking to move away from aggressive wars over natural resources and towards the eventual dismantlement of most if not all nuclear weapons. On the other hand, another scenario of human extinction by fire is one that may not so easily be reversed within a short period of time because it is not a fast-burning fire; rather, a slow burning fire is gradually heating up the planet as industrial civilization progresses and develops globally. This gradual process and course is long-lasting; thus it cannot easily be changed, even if responsible world leaders change their thinking about ‘‘progress’’ and industrial development based on the burning of fossil fuels. The way that global warming will impact humanity in the future has often been depicted through the analogy of the proverbial frog in a pot of water who does not realize that the temperature of the water is gradually rising. Instead of trying to escape, the frog tries to adjust to the gradual temperature change; finally, the heat of the water sneaks up on it until it is debilitated. Though it finally realizes its predicament and attempts to escape, it is too late; its feeble attempt is to no avail— and the frog dies. Whether this fable can actually be applied to frogs in heated water or not is irrelevant; it still serves as a comparable scenario of how the slow burning fire of global warming may eventually lead to a runaway condition and take humanity by surprise. Unfortunately, by the time the politicians finally all agree with the scientific consensus that global warming is indeed human caused, its development could be too advanced to arrest; the poor frog has become too weak and enfeebled to get himself out of hot water. The Intergovernmental Panel of Climate Change (IPCC) was established in 1988 by the WorldMeteorological Organization (WMO) and the United Nations Environmental Programme to ‘‘assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of humaninduced climate change, its potential impacts and options for adaptation and mitigation.’’[16]. Since then, it has given assessments and reports every six or seven years. Thus far, it has given four assessments.13 With all prior assessments came attacks fromsome parts of the scientific community, especially by industry scientists, to attempt to prove that the theory had no basis in planetary history and present-day reality; nevertheless, as more andmore research continually provided concrete and empirical evidence to confirm the global warming hypothesis, that it is indeed human-caused, mostly due to the burning of fossil fuels, the scientific consensus grew stronger that human induced global warming is verifiable. As a matter of fact, according to Bill McKibben [17], 12 years of ‘‘impressive scientific research’’ strongly confirms the 1995 report ‘‘that humans had grown so large in numbers and especially in appetite for energy that they were now damaging the most basic of the earth’s systems—the balance between incoming and outgoing solar energy’’; ‘‘. . . their findings have essentially been complementary to the 1995 report – a constant strengthening of the simple basic truth that humans were burning too much fossil fuel.’’ [17]. Indeed, 12 years later, the 2007 report not only confirms global warming, with a stronger scientific consensus that the slow burn is ‘‘very likely’’ human caused, but it also finds that the ‘‘amount of carbon in the atmosphere is now increasing at a faster rate even than before’’ and the temperature increases would be ‘‘considerably higher than they have been so far were it not for the blanket of soot and other pollution that is temporarily helping to cool the planet.’’ [17]. Furthermore, almost ‘‘everything frozen on earth is melting. Heavy rainfalls are becoming more common since the air is warmer and therefore holds more water than cold air, and ‘cold days, cold nights and frost have become less frequent, while hot days, hot nights, and heat waves have become more frequent.’’ [17]. Unless drastic action is taken soon, the average global temperature is predicted to rise about 5 degrees this century, but it could rise as much as 8 degrees. As has already been evidenced in recent years, the rise in global temperature is melting the Arctic sheets. This runaway polar melting will inflict great damage upon coastal areas, which could be much greater than what has been previously forecasted. However, what is missing in the IPCC report, as dire as it may seem, is sufficient emphasis on the less likely but still plausible worst case scenarios, which could prove to have the most devastating, catastrophic consequences for the long-term future of human civilization. In other words, the IPCC report places too much emphasis on a linear progression that does not take sufficient account of the dynamics of systems theory, which leads to a fundamentally different premise regarding the relationship between industrial civilization and nature. As a matter of fact, as early as the 1950s, Hannah Arendt [18] observed this radical shift of emphasis in the human-nature relationship, which starkly contrasts with previous times because the very distinction between nature and man as ‘‘Homo faber’’ has become blurred, as man no longer merely takes from nature what is needed for fabrication; instead, he now acts into nature to augment and transform natural processes, which are then directed into the evolution of human civilization itself such that we become a part of the very processes that we make. The more human civilization becomes an integral part of this dynamic system, the more difficult it becomes to extricate ourselves from it. As Arendt pointed out, this dynamism is dangerous because of its unpredictability. Acting into nature to transform natural processes brings about an . . . endless new change of happenings whose eventual outcome the actor is entirely incapable of knowing or controlling beforehand. The moment we started natural processes of our own - and the splitting of the atom is precisely such a man-made natural process -we not only increased our power over nature, or became more aggressive in our dealings with the given forces of the earth, but for the first time have taken nature into the human world as such and obliterated the defensive boundaries between natural elements and the human artifice by which all previous civilizations were hedged in’’ [18]. So, in as much as we act into nature, we carry our own unpredictability into our world; thus, Nature can no longer be thought of as having absolute or iron-clad laws. We no longer know what the laws of nature are because the unpredictability of Nature increases in proportion to the degree by which industrial civilization injects its own processes into it; through selfcreated, dynamic, transformative processes, we carry human unpredictability into the future with a precarious recklessness that may indeed end in human catastrophe or extinction, for elemental forces that we have yet to understand may be unleashed upon us by the very environment that we experiment with. Nature may yet have her revenge and the last word, as the Earth and its delicate ecosystems, environment, and atmosphere reach a tipping point, which could turn out to be a point of no return. This is exactly the conclusion reached by the scientist, inventor, and author, James Lovelock. The creator of the wellknown yet controversial Gaia Theory, Lovelock has recently written that it may be already too late for humanity to change course since climate centers around the world, . . . which are the equivalent of the pathology lab of a hospital, have reported the Earth’s physical condition, and the climate specialists see it as seriously ill, and soon to pass into a morbid fever that may last as long as 100,000 years. I have to tell you, as members of the Earth’s family and an intimate part of it, that you and especially civilisation are in grave danger. It was ill luck that we started polluting at a time when the sun is too hot for comfort. We have given Gaia a fever and soon her condition will worsen to a state like a coma. She has been there before and recovered, but it took more than 100,000 years. We are responsible and will suffer the consequences: as the century progresses, the temperature will rise 8 degrees centigrade in temperate regions and 5 degrees in the tropics. Much of the tropical land mass will become scrub and desert, and will no longer serve for regulation; this adds to the 40 per cent of the Earth’s surface we have depleted to feed ourselves. . . . Curiously, aerosol pollution of the northern hemisphere reduces global warming by reflecting sunlight back to space. This ‘global dimming’ is transient and could disappear in a few days like the smoke that it is, leaving us fully exposed to the heat of the global greenhouse. We are in a fool’s climate, accidentally kept cool by smoke, and before this century is over billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable. [19] Moreover, Lovelock states that the task of trying to correct our course is hopelessly impossible, for we are not in charge. It is foolish and arrogant to think that we can regulate the atmosphere, oceans and land surface in order to maintain the conditions right for life. It is as impossible as trying to regulate your own temperature and the composition of your blood, for those with ‘‘failing kidneys know the never-ending daily difficulty of adjusting water, salt and protein intake. The technological fix of dialysis helps, but is no replacement for living healthy kidneys’’ [19]. Lovelock concludes his analysis on the fate of human civilization and Gaia by saying that we will do ‘‘our best to survive, but sadly I cannot see the United States or the emerging economies of China and India cutting back in time, and they are the main source of emissions. The worst will happen and survivors will have to adapt to a hell of a climate’’ [19]. Lovelock’s forecast for climate change is based on a systems dynamics analysis of the interaction between humancreated processes and natural processes. It is a multidimensional model that appropriately reflects the dynamism of industrial civilization responsible for climate change. For one thing, it takes into account positive feedback loops that lead to ‘‘runaway’’ conditions. This mode of analysis is consistent  with recent research on how ecosystems suddenly disappear. A 2001 article in Nature, based on a scientific study by an international consortium, reported that changes in ecosystems are not just gradual but are often sudden and catastrophic [20]. Thus, a scientific consensus is emerging (after repeated studies of ecological change) that ‘‘stressed ecosystems, given the right nudge, are capable of slipping rapidly from a seemingly steady state to something entirely different,’’ according to Stephen Carpenter, a limnologist at the University of Wisconsin-Madison (who is also a co-author of the report). Carpenter continues, ‘‘We realize that there is a common pattern we’re seeing in ecosystems around the world, . . . Gradual changes in vulnerability accumulate and eventually you get a shock to the system - a flood or a drought - and, boom, you’re over into another regime. It becomes a self-sustaining collapse.’’ [20]. If ecosystems are in fact mini-models of the system of the Earth, as Lovelock maintains, then we can expect the same kind of behavior. As Jonathon Foley, a UW-Madison climatologist and another co-author of the Nature report, puts it, ‘‘Nature isn’t linear. Sometimes you can push on a system and push on a system and, finally, you have the straw that breaks the camel’s back.’’ Also, once the ‘‘flip’’ occurs, as Foley maintains, then the catastrophic change is ‘‘irreversible.’’ [20]. When we expand this analysis of ecosystems to the Earth itself, it’s frightening. What could be the final push on a stressed system that could ‘‘break the camel’s back?’’ Recently, another factor has been discovered in some areas of the arctic regions, which will surely compound the problem of global ‘‘heating’’ (as Lovelock calls it) in unpredictable and perhaps catastrophic ways. This disturbing development, also reported in Nature, concerns the permafrost that has locked up who knows how many tons of the greenhouse gasses, methane and carbon dioxide. Scientists are particularly worried about permafrost because, as it thaws, it releases these gases into the atmosphere, thus, contributing and accelerating global heating. It is a vicious positive feedback loop that compounds the prognosis of global warming in ways that could very well prove to be the tipping point of no return. Seth Borenstein of the Associated Press describes this disturbing positive feedback loop of permafrost greenhouse gasses, as when warming ‘‘. already under way thaws permafrost, soil that has been continuously frozen for thousands of years. Thawed permafrost releases methane and carbon dioxide. Those gases reach the atmosphere and help trap heat on Earth in the greenhouse effect. The trapped heat thaws more permafrost and so on.’’ [21]. The significance and severity of this problem cannot be understated since scientists have discovered that ‘‘the amount of carbon trapped in this type of permafrost called ‘‘yedoma’’ is much more prevalent than originally thought and may be 100 times [my emphasis] the amount of carbon released into the air each year by the burning of fossil fuels’’ [21]. Of course, it won’t come out all at once, at least by time as we commonly reckon it, but in terms of geological time, the ‘‘several decades’’ that scientists say it will probably take to come out can just as well be considered ‘‘all at once.’’ Surely, within the next 100 years, much of the world we live in will be quite hot and may be unlivable, as Lovelock has predicted. Professor Ted Schuur, a professor of ecosystem ecology at the University of Florida and co-author of the study that appeared in Science, describes it as a ‘‘slow motion time bomb.’’ [21]. Permafrost under lakes will be released as methane while that which is under dry ground will be released as carbon dioxide. Scientists aren’t sure which is worse. Whereas methane is a much more powerful agent to trap heat, it only lasts for about 10 years before it dissipates into carbon dioxide or other chemicals. The less powerful heat-trapping agent, carbon dioxide, lasts for 100 years [21]. Both of the greenhouse gasses present in permafrost represent a global dilemma and challenge that compounds the effects of global warming and runaway climate change. The scary thing about it, as one researcher put it, is that there are ‘‘lots of mechanisms that tend to be self-perpetuating and relatively few that tend to shut it off’’ [21].14 In an accompanying AP article, Katey Walters of the University of Alaska at Fairbanks describes the effects as ‘‘huge’’ and, unless we have a ‘‘major cooling,’’ - unstoppable [22]. Also, there’s so much more that has not even been discovered yet, she writes: ‘‘It’s coming out a lot and there’s a lot more to come out.’’ [22]. 4. Is it the end of human civilization and possible extinction of humankind? What Jonathon Schell wrote concerning death by the fire of nuclear holocaust also applies to the slow burning death of global warming: Once we learn that a holocaust might lead to extinction**, we have no right to gamble**, because if we lose, the game will be over, and neither we nor anyone else will ever get another chance. Therefore, although, scientifically speaking, there is all the difference in the world between the mere possibility that a holocaust will bring about extinction and the certainty of it, morally they are the same, and we have no choice but to address the issue of nuclear weapons as though we knew for a certainty that their use would put an end to our species [23].15 When we consider that beyond the horror of nuclear war, another horror is set into motion to interact with the subsequent nuclear winter to produce a poisonous and super heated planet, the chances of human survival seem even smaller. Who knows, even if some small remnant does manage to survive, what the poisonous environmental conditions would have on human evolution in the future. A remnant of mutated, sub-human creatures might survive such harsh conditions, but for all purposes, human civilization has been destroyed, and the question concerning human extinction becomes moot. Thus, **we have no other choice but to consider the finality of it all**, as Schell does: ‘‘Death lies at the core of each person’s private existence, but part of death’s meaning is to be found in the fact that it occurs in a biological and social world that survives.’’ [23].16 But what if the world itself were to perish, Schell asks. Would not it bring about a sort of ‘‘second death’’ – the death of the species – a possibility that the vast majority of the human race is in denial about? Talbot writes in the review of Schell’s book that it is not only the ‘‘death of the species, not just of the earth’s population on doomsday, but of countless unborn generations. They would be spared literal death but would nonetheless be victims . . .’’ [23]. That is the ‘‘second death’’ of humanity – the horrifying, unthinkable prospect that there are no prospects – that there will be no future. In the second chapter of Schell’s book, he writes that since we have not made a positive decision to exterminate ourselves but instead have ‘‘chosen to live on the edge of extinction, periodically lunging toward the abyss only to draw back at the last second, our situation is one of uncertainty and nervous insecurity rather than of absolute hopelessness.’’ [23].17 In other words, the fate of the Earth and its inhabitants has not yet been determined. Yet time is not on our side. Will we relinquish the fire and our use of it to dominate the Earth and each other, or will we continue to gamble with our future at this game of Russian roulette while **time** increasingly **stacks the cards against** our chances of **survival**?

### Solvency

#### Solvency

#### Offshore gas resources are abundant

Luthi, 11/9/12 [Luthi is the president of the National Ocean Industry Association, representing more than 275 companies engaged in all aspects of the exploration and production of both traditional and renewable energy resources on the nation’s outer continental shelf, “Let's find agreement on new offshore access”, <http://thehill.com/blogs/congress-blog/energy-a-environment/267089-lets-find-agreement-on-new-offshore-access>]

Now that the election is (finally) behind us, President Obama has an opportunity to set the nation more forcefully on the road to energy independence. We’re well on our way thanks in large part to new techniques and technologies that have unlocked vast deposits of shale oil and natural gas. But we could and should be doing much more. Back in June, the Interior Department issued its five-year Outer Continental Shelf (OCS) oil and gas leasing plan. Despite high expectations encouraged by President Obama’s self-described “all-of-the-above” approach to the nation’s energy policy and the absence of long-standing Administrative and Congressional exploration bans that were lifted in 2008, the plan failed to open any new offshore areas to oil and natural gas exploration and production. The industry is still limited to the same 15 percent of the acreage on the OCS that’s been available for decades, leaving 85 percent untouchable. Don’t get me wrong. That 15 percent has been incredibly productive. In fact, the Gulf of Mexico region, which is the heart of America’s offshore oil and gas industry, has yielded six times more oil than 1980s resource estimates predicted it held. Production in the Gulf is finally ramping back up now that permitting rates are bouncing back from historic lows following the Macondo spill in 2010. We have every reason to believe that the areas where we can explore and produce will continue to support and create jobs and contribute to America’s energy security for years and even decades to come. For this reason, we will continue to advocate that the Obama Administration streamline and accelerate permitting on these acres of the OCS. We will also fight to put to rest once and for all the erroneous claims that the industry is “sitting on” offshore tracts, a red herring that surfaced again during the presidential debates. In fact, the success industry has crafted out of the 15 percent of the OCS currently open to exploration and production underscores why the Interior Department’s 5-Year Leasing Plan was so disappointing. Think of how much energy awaits us in the 85 percent of the offshore areas where we currently cannot explore or produce. One report by the Interstate Oil and Gas Compact Commission, conducted several years ago, estimates recoverable resources in “U.S. moratorium areas” of 19.29 billion barrels of oil and 83.5 trillion cubic feet of natural gas. If history is any guide, these estimates will prove to be very conservative. The frustrating truth is we have no idea how much is waiting for us there, because we’re not allowed to go look.

#### And, the plan strikes a balance between supply and demand – creates certain investment in offshore gas

Griles 3 [Lisa, Deputy Secretary, Department of the Interior, “Energy Production on Federal Lands,” Hearing before the Committee on Energy and Natural Resources, United States Senate]

Mr. GRILES. America’s public lands have an abundant opportunity for exploration and development of renewable and nonrenewable energy resources. Energy reserves contained on the Department of the Interior’s onshore and offshore Federal lands are very important to meeting our current and future estimates of what it is going to take to continue to supply America’s energy demand. Estimates suggest that these lands contain approximately 68 percent of the undiscovered U.S. oil resources and 74 percent of the undiscovered natural gas resources. President Bush has developed a national energy policy that laid out a comprehensive, long-term energy strategy for America’s future. That strategy recognizes **we need to raise domestic production of energy**, both renewable and nonrenewable, to meet our dependence for energy. For oil and gas, the United States uses about 7 billion barrels a year, of which about 4 billion are currently imported and 3 billion are domestically produced. The President proposed to open a small portion of the Arctic National Wildlife Refuge to environmentally responsible oil and gas exploration. Now there is a new and environmentally friendly technology, similar to directional drilling, with mobile platforms, self-containing drilling units. These things will allow producers to access large energy reserves with almost no footprint on the tundra. Each day, even since I have assumed this job, our ability to minimize our effect on the environment continues to improve to where it is almost nonexistent in such areas as even in Alaska. According to the latest oil and gas assessment, ANWR is the largest untapped source of domestic production available to us. The production for ANWR would equal about 60 years of imports from Iraq. The National Energy Policy also encourages development of cleaner, more diverse portfolios of domestic renewable energy sources. The renewable policy in areas cover geothermal, wind, solar, and biomass. And it urges research on hydrogen as an alternate energy source. To advance the National Energy Policy, the Bureau of Land Management and the DOE’s National Renewable Energy Lab last week announced the release of a renewable energy report. It identifies and evaluates renewable energy resources on public lands. Mr. Chairman, I would like to submit this for the record.\* This report, which has just come out, assess the potential for renewable energy on public lands. It is a very good report that we hope will allow for the private sector, after working with the various other agencies, to where can we best use renewable resource, and how do we take this assessment and put it into the land use planning that we are currently going, so that right-of-ways and understanding of what renewable resources can be done in the West can, in fact, have a better opportunity. The Department completed the first of an energy inventory this year. Now the EPCA report, which is laying here, also, Mr. Chairman, is an estimate of the undiscovered, technically recoverable oil and gas. Part one of that report covers five oil and gas basins. The second part of the report will be out later this year. Now this report, it is not—there are people who have different opinions of it. But the fact is we believe it will be a good guidance tool, as we look at where the oil and gas potential is and where we need to do land use planning. And as we update these land use plannings and do our EISs, that will help guide further the private sector, the public sector, and all stakeholders on how we can better do land use planning and develop oil and gas in a sound fashion. Also, I have laying here in front of me the two EISs that have been done on the two major coal methane basins in the United States, San Juan Basis and the Powder River Basin. Completing these reports, which are in draft, will increase and offer the opportunity for production of natural gas with coal bed methane. Now these reports are in draft and, once completed, will authorize and allow for additional exploration and development. It has taken 2 years to get these in place. It has taken 2 years to get some of these in place. This planning process that Congress has initiated under FLPMA and other statutes allows for a deliberative, conscious understanding of what the impacts are. We believe that when these are finalized, that is in fact what will occur. One of the areas which we believe that the Department of the Interior and the Bureau of Land Management is and is going to engage in is coordination with landowners. Mr. Chairman, the private sector in the oil and gas industry must be good neighbors with the ranchers in the West. The BLM is going to be addressing the issues of bonding requirements that will assure that landowners have their surface rights and their values protected. BLM is working to make the consultation process with the landowners, with the States and local governments and other Federal agencies more efficient and meaningful. But we must assure that the surface owners are protected and the values of their ranches are in fact assured. And by being good neighbors, we can do that. In the BLM land use planning process, we have priorities, ten current resource management planning areas that contain the major oil and gas reserves that are reported out in the EPCA study. Once this process is completed, then we can move forward with consideration of development of the natural gas. We are also working with the Western Governors’ Association and the Western Utilities Group. The purpose is to identify and designate right-of-way corridors on public lands. We would like to do it now as to where right-of-way corridors make sense and put those in our land use planning processes, so that when the need is truly identified, utilities, energy companies, and the public will know where they are Instead of taking two years to amend a land use plan, hopefully this will expedite and have future opportunity so that when the need is there, we can go ahead and make that investment through the private sector. It should speed up the process of right-of-way permits for both pipelines and electric transmission. Now let me switch to the offshore, the Outer Continental Shelf. It is a huge contributor to our Nation’s energy and economic security. The CHAIRMAN. Mr. Secretary, everything you have talked about so far is onshore. Mr. GRILES. That is correct. The CHAIRMAN. You now will speak to offshore. Mr. GRILES. Yes, sir, I will. Now we are keeping on schedule the holding lease sales in the areas that are available for leasing. In the past year, scheduled sales in several areas were either delayed, canceled, or put under moratoria, even though they were in the 5-year plan. It undermined certainty. It made investing, particularly in the Gulf, more risky. We have approved a 5-year oil and gas leasing program in July 2002 that calls for 20 new lease sales in the Gulf of Mexico and several other areas of the offshore, specifically in Alaska by 2007. Now our estimates indicate that these areas contain resources up to 22 billion barrels of oil and 61 trillion cubic feet of natural gas. We are also acting to raise energy production from these offshore areas by providing royalty relief on the OCS leases for new deep wells that are drilled in shallow water. These are at depths that heretofore were very and are very costly to produce from and costly to drill to. We need to encourage that exploration. These deep wells, which are greater than 15,000 feet in depth, are expected to access between 5 to 20 trillion cubic feet of natural gas and can be developed quickly due to existing infrastructure and the shallow water. We have also issued a final rule in July 2002 that allows companies to apply for a lease extension, giving them more time to analyze complex geological data that underlies salt domes. That is, where geologically salt overlays the geologically clay. And you try to do seismic, and the seismic just gets distorted. So we have extended the lease terms, so that hopefully those companies can figure out where and where to best drill. Vast resources of oil and natural gas lie, we hope, beneath these sheets of salt in the OCS in the Gulf of Mexico. But it is very difficult to get clear seismic images. We are also working to create a process of reviewing and permitting alternative energy sources on the OCS lands. We have sent legislation to Congress that would give the Minerals Management Service of the Department of the Interior clear authority to lease parts of the OCS for renewable energy. The renewables could be wind, wave, or solar energy, and related projects that are auxiliary to oil and gas development, such as offshore staging facilities and emergency medical facilities. We need this authority in order to be able to truly give the private sector what are the rules to play from and buy, so they can have certainty about where to go.

#### And, removing restrictions key – the plan alters market dynamics

Medlock, 08 [Medlock is a fellow in Energy Studies at [Rice University](http://www.chron.com/?controllerName=search&action=search&channel=opinion%2Foutlook&search=1&inlineLink=1&query=%22Rice+University%22)'s [James A Baker III Institute for Public Policy](http://www.chron.com/?controllerName=search&action=search&channel=opinion%2Foutlook&search=1&inlineLink=1&query=%22James+A+Baker+III+Institute+for+Public+Policy%22) and an adjunct assistant professor in the [Economics Department](http://www.chron.com/?controllerName=search&action=search&channel=opinion%2Foutlook&search=1&inlineLink=1&query=%22Economics+Department%22) at Rice, “Open outer continental shelf”, <http://www.chron.com/opinion/outlook/article/Open-outer-continental-shelf-1597898.php>]

A confluence of factors is responsible for the recent price run-up at the pump. One important factor behind the strength of oil prices is the expectation of inadequate oil supply in the future. This has led to a debate regarding the removal of drilling access restrictions in the U.S. Outer Continental Shelf (OCS). According to the [Department of Interior](http://www.chron.com/?controllerName=search&action=search&channel=opinion%2Foutlook&search=1&inlineLink=1&query=%22Department+of+Interior%22)'s [Minerals Management Service](http://www.chron.com/?controllerName=search&action=search&channel=opinion%2Foutlook&search=1&inlineLink=1&query=%22Minerals+Management+Service%22) (MMS), the OCS in the Lower 48 states currently under moratorium holds 19 billion barrels of technically recoverable oil. Some analysts claim that opening the OCS will not matter that much, as the quantity of oil is only about two years of U.S. consumption. But a more appropriate way to look at the issue is this: If the OCS could provide additional production of 1 million barrels per day of oil, our import dependence on Persian Gulf crude oil would be reduced by about 40 percent. Moreover, at 1 million barrels per day, the currently blocked OCS resource would last about 50 years. Of course, opening the OCS will not bring immediate supplies because it would take time to organize the lease sales and then develop the supply delivery infrastructure. However, as development progressed, **the expected growth in supply would have an effect on market** sentiment and eventually prices. Thus, opening the OCS should be viewed as a relevant part of a larger strategy to help ease prices over time **because an increase in activity in the OCS would generally improve expectations about future oil supplies.** Lifting the current moratorium in the OCS would also provide almost 80 trillion cubic feet of technically recoverable natural gas that is currently off-limits. A recent study by the [Baker Institute](http://www.chron.com/?controllerName=search&action=search&channel=opinion%2Foutlook&search=1&inlineLink=1&query=%22Baker+Institute%22) indicates that removing current restrictions on resource development in the OCS would **reduce** future liquefied natural gas **import dependence** of the United States and lessen the influence of any future gas producers' cartel.

#### And, that sustains low prices and ensures abundant supply

Hastings, 12 [House Representative Doc, Republican Washington, President Obama's offshore drilling plan must be replaced, <http://thehill.com/blogs/congress-blog/energy-a-environment/239529-president-obamas-offshore-drilling-plan-must-be-replaced>]

Though President Obama uses lofty rhetoric to claim support for American oil and natural gas production, the administration chose to bury the announcement of this plan under mountains of news coverage. It’s no surprise that during an election year the president doesn’t want to hype a plan that represents a giant step backwards for American energy production and keeps 85 percent of our offshore areas off-limits. Fortunately, Congress now has the responsibility to act and make clear that the president’s plan is inadequate to meet the United States’ energy needs. Under current law, the president must submit the five-year plan to Congress for a mandatory 60-day review before it goes into effect. While in the past, this 60-day review has been treated as just a formality, it is an opportunity to reject the president’s plan and offer a better alternative for job creation and energy production. H.R. 6082, the Congressional Replacement of President Obama’s Energy-Restricting and Job-Limiting Offshore Drilling Plan, would replace President Obama’s plan with an environmentally responsible, robust plan that supports new offshore drilling. This plan passed out of the House Natural Resources Committee with bipartisan support and will be considered by the full House this week. It sets up a clear choice between the president’s drill-nowhere-new plan and the Congressional replacement plan to responsibly expand offshore American energy production. President Obama’s plan **doesn’t open one new area for** leasing and energy production. The Atlantic Coast, the Pacific Coast and most of the water off Alaska are all placed off-limits. This is especially frustrating for Virginians who had a lease sale scheduled for 2011, only to have it canceled by President Obama. The president added further insult to injury by not including the Virginia lease sale in his final plan, meaning the earliest it could happen is late 2017. The president’s plan only offers 15 lease sales limited to the Gulf of Mexico and, very late in the plan, small parts of Alaska. It doesn’t open one new area for leasing and energy production. According to the non-partisan Congressional Research Service, President Obama’s 15 lease sales represent the lowest number ever included in an offshore leasing plan. President Obama rates worse than even Jimmy Carter. Thanks to President Obama, it’s as if the bipartisan steps to lift the drilling moratoria in 2008 never happened. Crippling $4 gasoline prices sparked Americans’ outrage and pressured the Democrat-controlled Congress to allow legislation to pass opening up new offshore areas to drilling. Unfortunately, four years later, American families and small businesses are experiencing the pain of higher gasoline prices and yet no progress has been made to expand production of our offshore resources. The Congressional moratorium on drilling has simply been replaced by the “Obama moratorium” on drilling. Gasoline prices were $1.89 when President Obama took office, and prices today are nearly double. Americans will continue to face volatile price spikes as long as we continue to keep the United States’ energy resources under lock-and-key. In stark contrast to the president, the Congressional replacement plan includes 29 lease sales and opens new areas previously under moratoria. It’s a targeted effort towards those areas where we know we have the most oil and natural gas resources – like the mid-Atlantic, the Southern California Coast and Alaska. This is a drill smart plan that would create thousands of new American jobs, help lower prices at the pump and strengthen our national and economic security. Congress has a choice – to either support the president’s plan that re-imposes the drilling moratorium and places the vast majority of offshore areas off-limits, or support using American energy to create American jobs and strengthen America’s economy.

#### And, unlocking offshore resources is necessary to keep the price low

Pirog, 12 [Robert Pirog Specialist in Energy Economics CRS, <http://assets.opencrs.com/rpts/R40645_20120210.pdf>]

Natural gas markets differ from the oil market in that they are not global, but regional. As shown in Table 6, above, virtually all U.S. natural gas consumption comes from U.S. or Canadian sources. The only link between regional natural gas markets is through LNG, but the rapidly growing market for LNG predicted earlier in this decade has failed to materialize. LNG is still largely characterized by long-term, two-party supply and purchase agreements. In the North American market, LNG plays the role of making up marginal short-falls in the demand and supply balance. As production from domestic onshore shale gas deposits increases, **the role of LNG in the U.S. market will likely be small.** In this regional market structure, the development of new, offshore U.S. supplies could have a significant impact on the domestic price of natural gas, as well as contributing to U.S. energy independence of this fuel. Although the price of natural gas has not shown the same degree of volatility as oil, the United States has been **among the highest-priced regions in the world**. High prices have caused residential consumers to allocate a greater portion of their budgets to home heating expenses. Industrial users either lose sales to overseas competitors, or cease U.S. production when domestic natural gas prices rise too much beyond those observed in other regions of the world. The development of offshore natural gas resources is likely to further retard the development of a growing LNG system in the United States. Terminals for the re-gasification of LNG have proven to be difficult to site and permit, and expensive to build. If domestic natural gas resources, close to existing collection and distribution systems, at least in the Gulf of Mexico, could be developed, the LNG terminals might prove to be redundant, depending on the volumes of natural gas that ultimately might be recovered. Offshore natural gas development, though commonly associated with offshore oil production, will likely be less competitive in a market environment dominated by onshore shale gas development.

#### Plan expands production – kick starts nearly 100 new projects

Paul Hillegeist et al (President and COO at Quest Offshore Resources, Inc, Sean Shafer, Project Director, Andrew Jackson, Project Manager, Leslie Cook , Senior Research Consultant) December 2011 “The State of the Offshore U.S. Oil and Gas Industry” http://energytomorrow.org/images/uploads/Quest\_2011\_December\_29\_Final.pdf

If drilling permits going forward were to be issued at pre‐moratorium rates, the number of shallow water projects delayed could be significantly reduced from 85 under the current path to 37 over the 2012 to 2015 period, and from 48 to 9 for the deepwater. The increased number of projects would increase investment in the Gulf of Mexico offshore oil and gas industry by over $15.6 billion dollars from 2012‐2015. This additional investment would increase average annual U.S. employment between 17,000 and 49,000 thousand jobs per year over that time period. Offshore oil production would be higher over the next decade, for example, by 2017 offshore oil production would rise by approximately 13 percent relative to its current projected path. A regulatory environment that eliminates unnecessary permitting delays and maintains competitiveness with development opportunities in other regions of the world would provide a first step to revitalizing the offshore oil and gas industry. Additional access to offshore areas currently off‐limits remains a key missing component of U.S. energy policy, and would provide substantial additional gains to the nation in terms of energy security, employment and government revenue.

#### That doubles production

Baker Institute, ‘8 (Baker Institute for Public Policy, Rice University, Baker Institute Policy Report, January 2008, “Natural Gas in North America: Markets and Security,” <http://connection.ebscohost.com/c/articles/30064519/study-lift-u-s-drilling-restrictions-avoid-international-lng-cartel>)//CC

As might be expected, the lower requirements for LNG under this scenario stem from larger, lowcost U.S. Lower 48 natural gas production. Modeling predicts that lifting access restrictions would lead to an increase overall in Lower 48 production of about 1.5 tcf in 2015 (or a 7.5 percent increase), increasing to 3.1 tcf greater production (or a 10.1 percent increase) in every year from 2015 through 2030. More specifically, OCS production would total 5.0 tcf in 2015 and 6.1 tcf in 2025 as compared to only 3.5 tcf in 2015 and 3.9 tcf in 2025 if the restrictions remain in place. Lifting restrictions in the Rocky Mountains adds another 0.10 tcf by 2015 and 0.93 tcf by 2025.

#### Otherwise, unpredictable regulatory shifts will crush predictability and timing of projects

Curry L. Hagerty (Specialist in Energy and Natural Resources Policy at the Congressional Research Service) June 15, 2010 “Outer Continental Shelf Moratoria on Oil and Gas Development” http://crs.ncseonline.org/nle/crsreports/10Jul/R41132.pdf

One legacy of congressional moratoria is their impact on the timing of possible OCS development. From a developer’s point of view, predictability in the pace, timing, and sequence of OCS development projects is key to strategic business decisions. From a regulator’s standpoint, agency discretion for OCS development is tied to program planning horizons set by statutory or regulatory timetables. Features of the annual congressional moratoria varied from year to year, and from region to region, as reflected in Table 1, and the resultant uncertainty had a disruptive effect on the pace of OCS activity, which was viewed negatively by those in favor of OCS drilling. Among those opposed to OCS drilling, the disruptive effect was considered a positive outcome.23 Changes to the specific provisions of annual moratoria measures created tensions due to the unpredictability of the bans on leasing activities, timeframes, and locations.24 It was not uncommon for developers to engage in litigation against the federal government and to claim damages related to reliance on leases and federal OCS policies that were disrupted by the annual congressional moratoria.25 Although observers agreed that appropriations measures were out of sync with the timetable used to coordinate federal OCS planning functions, proponents of annual congressional moratoria provisions countered that restrictions were defensible in the absence of more permanent alternatives for similar leasing prohibitions

## 2AC

### 2ac warming

#### Methane release inevitable – only extraction solves extinction

**Light 12** (Malcolm P.R. Light, Center for Polar Observation and Modeling, University of London, polar climate modeling and methane hydrates in the permafrost and submarine Arctic, “Charting Mankind’s Arctic Methane Emission Exponential Expressway to Total Extinction in the Next 50 Years,” Arctic News, August 10, 2012, http://arctic-news.blogspot.com/2012/08/charting-mankinds-expressway-to-extinction.html)

**If left alone** the subsea Arctic **methane hydrates will explosively destabilize on their own due to global warming and produce a massive** Arctic wide **methane “blowout” that will lead to** humanity’s **total extinction,** probably before the middle of this century (Light 2012 a, b and c). AIRS atmospheric methane concentration data between 2008 and 2012 (Yurganov 2012) show that the Arctic has already entered the early stages of a subsea methane “blowout” so we need to step in as soon as we can (e.g. 2015) to prevent it escalating any further (Light 2012c). The Arctic Natural Gas Extraction, Liquefaction & Sales (ANGELS) Proposal aims to reduce the threat of large, abrupt releases of methane in the Arctic, by extracting methane from Arctic methane hydrates prone to destabilization (Light, 2012c). After the Arctic sea ice has gone (probably around 2015) we propose that a large consortium of oil and gas companies/governments set up drilling platforms near the regions of maximum subsea methane emissions and drill a whole series of shallow directional production drill holes into the subsea subpermafrost “free methane” reservoir in order to depressurize it in a controlled manner (Light 2012c). This methane will be produced to the surface, liquefied, stored and transported on LNG tankers as a “green energy” source to all nations, totally replacing oil and coal as the major energy source (Light 2012c). The subsea methane reserves are so large that they can supply the entire earth’s energy needs for several hundreds of years (Light 2012c). By sufficiently depressurizing the Arctic subsea subpermafrost methane it will be possible to draw down Arctic ocean water through the old eruption sites and fracture systems and destabilize the methane hydrates in a controlled way thus shutting down the entire Arctic subsea methane blowout (Light 2012c).

### 2ac prices

#### Unipolarity is comparatively less violent—primacy stops war and re-intervention

**Busby, 12** [Get Real Chicago IR guys out in force, Josh, Assistant Professor of Public Affairs and a fellow in the RGK Center for Philanthropy and Community Service as well as a Crook Distinguished Scholar at the Robert S. Strauss Center for International Security and Law. <http://duckofminerva.blogspot.com/2012/01/get-real-chicago-ir-guys-out-in-force.html>]

Is Unipolarity Peaceful? As evidence, Monteiro provides metrics of the number of years during which great powers have been at war. For the unipolar era since the end of the Cold War, the United States has been at war 13 of those 22 years or 59% (see his Table 2 below). Now, I've been following some of the discussion by and about Steven Pinker and Joshua Goldstein's [work](http://www.nytimes.com/2011/12/18/opinion/sunday/war-really-is-going-out-of-style.html?pagewanted=all) that suggests the world is becoming more peaceful with interstate wars and intrastate wars becoming more rare. I was struck by the graphic that Pinker used in a Wall Street Journal [piece](http://online.wsj.com/article/SB10001424053111904106704576583203589408180.html) back in September that drew on the Uppsala Conflict Data, which shows a steep decline in the number of deaths per 100,000 people. How do we square this account by Monteiro of a unipolar world that is not peaceful (with the U.S. at war during this period in Iraq twice, Afghanistan, Kosovo) and Pinker's account which suggests declining violence in the contemporary period? Where Pinker is focused on systemic outcomes, Monteiro's measure merely reflect years during which the great powers are at war. Under unipolarity, there is only one great power so the measure is partial and not systemic. However, Monteiro's theory aims to be systemic rather than partial. In critiquing Wohlforth's early work on unipolarity stability, Monteiro notes: Wohlforth’s argument does not exclude all kinds of war. Although power preponderance allows the unipole to manage conflicts globally, this argument is not meant to apply to relations between major and minor powers, or among the latter (17). So presumably, **a more adequate test of the peacefulness or not of unipolarity** (at least for Monteiro) is not the number of years the great power has been at war **but whether the system as a whole is becoming more peaceful under unipolarity compared to previous eras**, including wars between major and minor powers or wars between minor powers and whether the wars that do happen are as violent as the ones that came before. Now, as Ross Douthat pointed [out](http://douthat.blogs.nytimes.com/2011/10/17/steven-pinkers-history-of-violence/), Pinker's argument isn't based on a logic of benign hegemony. It could be that even if the present era is more peaceful, unipolarity has nothing to do with it. Moreover, Pinker may be wrong. Maybe the world isn't all that peaceful. I keep thinking about the places I don't want to go to anymore because they are violent (Mexico, Honduras, El Salvador, Nigeria, Pakistan, etc.) As Tyler Cowen [noted](http://marginalrevolution.com/marginalrevolution/2011/10/steven-pinker-on-violence.html), the measure Pinker uses to suggest violence is a per capita one, which doesn't get at the absolute level of violence perpetrated in an era of a greater world population. **But, if my read of other** [**reports**](http://www.hsrgroup.org/human-security-reports/20092010/graphs-and-tables.aspx) **based on Uppsala data is right, war is becoming more rare and less deadly** (though later [data](http://www.pcr.uu.se/research/ucdp/charts_and_graphs/) suggests lower level armed conflict may be increasing again since the mid-2000s). The apparent violence of the contemporary era may be something of a presentist bias and reflect our own lived experience and the ubiquity of news media .Even if the U.S. has been at war for the better part of unipolarity, the deadliness is declining, even compared with Vietnam, let alone World War II. Does Unipolarity Drive Conflict? So, I kind of took issue with the Monteiro's premise that unipolarity is not peaceful. What about his argument that unipolarity drives conflict? Monteiro suggests that the unipole has three available strategies - defensive dominance, offensive dominance and disengagement - though is less likely to use the third. Like Rosato and Schuessler, Monteiro suggests because other states cannot trust the intentions of other states, namely the unipole, that minor states won't merely bandwagon with the unipole. Some "recalcitrant" minor powers will attempt to see what they can get away with and try to build up their capabilities. As an aside, in Rosato and Schuessler world, unless these are located in strategically important areas (i.e. places where there is oil), then the unipole (the United States) should disengage. In Monteiro's world, disengagement would inexorably lead to instability and draw in the U.S. again (though I'm not sure this necessarily follows), but neither defensive or offensive dominance offer much possibility for peace either since it is U.S. power in and of itself that makes other states insecure, even though they can't balance against it.

#### California key to US and global econ

**Navarro, ‘8** Professor of Economics and Public Policy at the Paul Merage School of Business, University of California, Irvine and holds a Ph.D. in Economics from Harvard University (Peter Navarro, SFGate, 15 August 2008, “California nightmare for the global economy?” http://www.sfgate.com/opinion/article/California-nightmare-for-the-global-economy-3273234.php)//CC

Will the California budget crisis tip the United States into recession? The California economy is certainly large enough to inflict such damage. It's the seventh-largest economy in the world and home to close to 38 million Americans. California's budget deficit is by any reasonable measure enormous. This budget deficit is estimated at $17.2 billion and represents more than 17 percent of the state's general fund expenditures (about $101 billion). In contrast, New York, which faces the second-worst budget gap in the nation for fiscal year 2009, has a gap of about $5 billion, which represents less than 10 percent of its budget. In closing its past budgetary gaps, California has acted more like the federal government rather than merely one of 50 states. Indeed, unlike the federal government (or sovereign nations), each state is required to balance its budget each year; and no state, at least in principle, has the authority to engage in the kind of discretionary deficit spending both the federal government and nations around the world routinely use to stimulate their economies. In the past, a profligate California has gotten around this balanced-budget requirement by using a technique that effectively allows the Golden State to administer its own fiscal stimulus. In particular, California - under both Democratic and Republican governors - has simply issued new bonds every time that it has spent far beyond its means. California's problem this time, however, is that its deficit is so big, its balance sheet is so bad, and world credit markets are so tight that issuing new bonds alone is no longer a viable option. Instead, California's politicians are inexorably being forced toward a solution that will prominently feature both a large tax increase and significant spending cuts. Indeed, this is not a partisan matter of choosing one's poison. The budget deficit is so large that it cannot be eliminated without raising taxes, anathema to the state's Republicans, and spending cuts, equally unpalatable to California Democrats. Of course, the faster the state Legislature accepts this harsh reality, the faster the deadlock can be broken. Viewed from a macroeconomic perspective, there is an even harsher reality. Increased taxes and reduced spending will send a very nasty contractionary shock through a California economy that is already reeling from a housing market meltdown and punishing gas prices. Should Gov. Arnold Schwarzenegger's budgetary medicine - including firing many state employees - trigger a recession, this may well serve as a tipping point for a national recession and, in the worst case scenario, even a global recession. In considering these dangers, it is worth noting that California provides close to 13 percent of America's real GDP growth. In contrast, the second-largest contributor to U.S. gross domestic product is Texas, and it provides only half that stimulus. It also worth noting that California is an important destination for both U.S. manufactured goods and world imports, particularly from Asia. Already, California's unemployment rate is more than 6.8 percent and well above the national average of 5.7 percent. At least some economists believe California may already be experiencing negative growth. The economy is likely to get a lot worse before its gets better. If there is any one civics lesson to be learned from this fine mess, it is that the state's politicians must learn to resist overspending in good times so that the state won't face bankruptcy when bad times hit. It should be equally clear that any damn fool can issue bonds to balance a budget. However, it takes real political courage and economic foresight to put a state budget on an even keel through fiscally conservative tax-and-spend policies. At this juncture, California is nowhere close to that - and the rest of the country, and perhaps the world, may soon pay the Golden State's piper.

#### Stimulus key

**Turner, 1/15** (Greg Turner, Tribune Business News, 15 January 2013, “Boston Fed chief: Economy needs stimulus,” proquest)//CC

Boston Fed chief Eric Rosengren painted a generally encouraging picture for the U.S. economy, noting "signs of underlying strength" despite lingering fiscal uncertainty as the calendar flipped to 2013. In a speech today in Providence, Rosengren said there has been improvement recently in the housing sector and in purchases of durable goods such as cars by consumers, thanks in part to the Fed. "The most interest-sensitive sectors have been responding to the monetary stimulus from the Fed, and this stimulus has provided a major source of strength for the economy last year. And it is likely to be a source of support in 2013," he said, according to his prepared remarks. Rosengren said it's "imperative" to continue so-called monetary accommodation because the nation still has an "unacceptably" high unemployment rate, while inflation is actually "undershooting" the Fed's 2 percent target. "Despite the rapid growth of the central bank's balance sheet in 2008, as well as the balance sheet's continued growth more recently, there has been no upward trend in inflation," said Rosengren, who regained a vote this year on the Fed's policy-setting committee. Rosengren, the president of the Federal Reserve Bank of Boston since 2007, said despite some sources of strength, the economy "has not snapped back more quickly" because of the recent fiscal cliff debate. Spending by cash-strapped state and local governments, which account for nearly 12 percent of economic activity, has been a drag on the economy, and the ongoing federal budget situation remains uncertain. "What does seem certain is that there will be cuts in government spending which, like higher taxes, will by the simple math of the GDP calculation slow down overall economic growth," he said. Rosengren warned of a "ripple effect" on the economy from potential cutbacks in federal grants to state and local governments. "Similarly, there is the issue of potential federal tax base broadening in order to reduce the federal budget deficit. This will have implications for business and family budgets," he said. "While the need for long-run sustainable fiscal policy is both clear and uncontroversial, I believe it is important to achieve sustainability in a way that does not risk the tentative economic improvements we have experienced to date." Despite the fiscal headwinds and weakness in Europe and Japan, Rosengren expects stronger growth in the second half of the year -- closer to 3 percent, compared to the average 2.2 percent annual rate since the recovery started in June 2009. Rosengren spoke this morning to the Greater Providence Chamber of Commerce. Rhode Island was among the hardest hit during the Great Recession and remains one of only two states with a jobless rate higher than 10 percent, as of November. "Persistently high unemployment rates have enormous personal and societal costs," he told Chamber members. "So in my view it is critical that public policy continues to actively support the economy's return to full employment."

### 2ac gas wars

#### Production shortfalls cause nuclear war

**Ewall, ‘7** Mike Ewall. (Founder and Director of the Energy Justice Network). “Fact Sheet: Liquified Natural Gas (LNG)” November 2007.

FACT SHEET: Liquefied Natural Gas (LNG) Why LNG? 97% of natural gas consumed in the U.S. is from the U.S. and Canada, transported via pipeline. However, natural gas production has peaked in North America. Over time, we’re drilling more and more, but finding less and less. Between 1998 and 2007, natural gas prices more than tripled as imports from Canada slowed and domestic production failed to keep up with demand. To feed the increasing demand, more liquefied natural gas (LNG) terminals are being proposed, to increase imports from overseas. How Many? The U.S. has five existing LNG terminals – in Massachusetts, Maryland, Georgia, Louisiana and a newer one in the Gulf of Mexico. Approximately 60 additional LNG terminals have been proposed in North America (45 of which would be in the U.S.), though the Federal Energy Regulatory Commission (FERC) has estimated that only 10 LNG terminals are needed to meet short-term demand (of which two are in Mexico and two are in Eastern Canada). Thirty-one proposals have been approved by federal regulators already. Many are being fought by local opposition groups, but fighting them is difficult in the U.S. since local and state rights to block such projects are largely overridden by the Energy Policy Act of 2005. Peak Gas Globally, the demand for natural gas is increasing faster than it can be met. Global production is going to peak around 2020, meaning that supply will start to drop as demand continues to rise. This will drastically increase costs and will exacerbate global conflict, as China, India and other growing economies compete with the U.S. for the world’s limited gas supplies. China has plans for 8-9 LNG terminals. Bad Economics An LNG terminal will be an economic nightmare. Gas prices have already tripled since their historical average, which was fairly constant from 1976 through 1998. The push for LNG won’t help in the long-run, since these new terminals wouldn’t be built until around 2010. Companies will have to compete with India, China and the rest of the world for competitive contracts to secure LNG supplies (or the U.S. will use military force – also very expensive – to control the supply). Since natural gas production is going to peak globally around 2020, any new LNG import terminals will only have around 10 good years of economic life (propped up by excessive use of U.S. tax dollars to support military ventures to secure foreign sources of gas) before global prices start to skyrocket. LNG = More Wars Globalization of gas markets increases global conflict over gas supplies. Liquefied natural gas would be imported from Qatar, Algeria, Nigeria, Trinidad and Tobago, Australia and Indonesia. Iraq, Iran, central Asia and Russia are also have major gas resources and are likely to remain the focus of US military ventures. The U.S. has a long-standing history of conflict with oil-producing nations, to control oil supplies. Now, as natural gas markets globalize, our military conflicts are starting to be about natural gas as well.

### 2ac arctic

#### Plan key to best practices in the Arctic

Schneider 12 (Michael, Advocacy Director – Clean Air Task Force, “Curb Methane Emissions,” National Journal, 7-25, http://energy.nationaljournal.com/2012/07/is-arctic-oil-drilling-ready-f.php?comments=expandall#comments)

For several weeks now the public and the media have cast increasing attention on Arctic oil and gas drilling, specifically regarding the plans of Shell to explore in the Arctic waters off the coast of Alaska. This is, pardon the pun, only the tip of the iceberg when it comes to Arctic oil and gas development. Around the Arctic, efforts are ramping up in Russia, Norway, Greenland and Canada to stake a claim to one of the last great reserves of undiscovered oil and gas. According to the United States Geological Survey, the Arctic holds one-fifth of the world’s undiscovered, recoverable oil and natural gas; 90 billion barrels of oil and 1,669 trillion cubic feet of natural gas. With Shell’s imminent entrance into Arctic waters, the debate is turning from “if we drill in the Arctic,” to “how and where we drill in the Arctic.” The discussion to date has primarily revolved around the key questions of oil spills and impacts to marine ecosystems. However, it is also critically important to remember that this debate starts and ends with climate change. The melting of the Arctic due to global warming is what set off the race for Arctic oil and gas. Now, it is incumbent upon the countries and the companies that intend to develop the Arctic to make sure that it is done in the least damaging way possible, and this includes paying very close attention to the global warming pollutants coming from the production: methane, black carbon and carbon dioxide. Pointing the way forward in a new report: (www.catf.us/resources/publications/view/170), Clean Air Task Force has laid out the primary climate risks and mitigation strategies of drilling in the Arctic. Here is a summary of some of the key findings of that report: While oil production is the primary focus of current exploration and production activities due to high oil prices, natural gas is almost always produced along with oil, posing the problem of what to do with it. Crude oil usually contains some amount of “associated” natural gas that is dissolved in the oil or exists as a cap of free gas above the oil in the geological formation. In some cases, this represents a large volume of gas. For example, nearly 3 trillion cubic feet (Tcf) per year of gas is produced in association with oil in Alaska. The largest (but by no means only) potential source of methane pollution is from the leaks or outright venting of this “associated” natural gas. Flaring, the typical way to dispose of this “stranded” gas, is much better than venting, but it releases a tremendous amount of CO2. Worldwide, about 5 trillion cubic feet of gas is flared each year. That’s about 25 percent of the US’s annual natural gas consumption. This leads to the release of about 400 million tons of CO2 per year globally, the equivalent to the annual emissions from over 70 million cars. Black carbon is also emitted from flares, although measurements are lacking to fully understand the potential burden from flaring. What we do know is that the black carbon that flaring will release in the Arctic is particularly harmful, since it is so likely to settle out on snow or ice, where the dark pollutant rapidly warms the white frozen surface. Many technologies and best practices exist to reduce the impact of oil and gas production both to the Arctic and the global climate. If we are going to extract the oil from the Arctic, we need to do it in a way that does not exacerbate the very real problem that climate change is already posing there. In order to do so, the US must take the lead in ensuring that only the best practices are acceptable when it comes to Arctic exploration and drilling. The technologies and practices below can dramatically reduce the emissions associated with oil and natural gas, in some cases by almost 100%.

#### Extinction

**Ford 3** (Violet, Vice President – Inuit Circumpolar Conference, “Global Environmental Change: An Inuit Reality”, 10-15, http://www.mcgill.ca/files/cine/Ford.pdf)

The Arctic ecosystem is a fundamental contributor to **global processes** and the balance of **life on earth**. Both the unique physical and biological characteristics of the Arctic ecosystem play key roles in maintaining the integrity of the global environment. Massive ice sheets and ice cover regulate the global temperatures by reflecting much of the solar radiation back into space, the Arctic ocean influences global ocean currents which are responsible for a variety of weather conditions and events, to name but two. The Arctic is also the recipient of the by-products of southern-based industry and agricultural practices. In February 2003, UNEP’s Governing Council passed a resolution effectively recognizes the Arctic as a **“barometer”** or indicator region **of the globe’s environmental health**. This is important and is further reason why Arctic indigenous peoples should work together at the international level. Late last year ICC and RAIPON participated in the Global Environment Facility (GEF) Council meeting in Beijing, China with the aim of sensitizing this organization to the Arctic dimension of global environmental issues. I understand that the GEF is now willing to consider indigenous peoples and their organizations to be distinct and separate from environmental and other NGO’s.

### 2ac k

#### Set a high threshold – unless they can explain minute interaction of their theories with our aff, reject their impact claims

#### The judge weighs the material effects of the plan against the k – key to 1AC offense and intellectual progress

#### Death outweighs

**Paterson, 03** - Department of Philosophy, Providence College, Rhode Island (Craig, “A Life Not Worth

Living?”, Studies in Christian Ethics, <http://sce.sagepub.com>)

Contrary to those accounts, I would argue that it is **death** per se that is really the objective evil for us, not because it deprives us of a prospective future of overall good judged better than the alternative of non-being. It cannot be about harm to a former person who has ceased to exist, for no person actually suffers from the sub-sequent non-participation. Rather, death in itself is an evil to us because it ontologically destroys the current existent subject **— it is the ultimate in etaphysical lightening strikes.** 80 The evil of death is truly an ontological evil borne by the person who already exists, **independently of calculations about better or worse possible lives.** Such an evil need not be consciously experienced in order to be an evil **for the kind of being a human person is**. Death is an evil because of the change in kind it brings about**, a change that is destructive of the type of entity that we essentially are**. Anything, whether caused naturally or caused by human intervention (intentional or unintentional) that drastically interferes in the process of maintaining the person in existence is an objective evil for the person. What is crucially at stake here, and is dialectically supportive of the self-evidency of the basic good of human life, is that death is a **radical interference** with the current life process of the kind of being that we are. In consequence, death itself can be credibly thought of as a ‘primitive evil’ for all persons, **regardless of the extent to which they are currently or prospectively capable of participating in a full array of the goods of life.** 81 In conclusion, concerning willed human actions, it is justifiable to state that **any intentional rejection of human life** itself **cannot therefore be warranted** since it is **an expression of an ultimate disvalue for the subject**, namely, **the destruction of the present person; a radical ontological good that we cannot begin to weigh objectively against the travails of life in a rational manner**. To deal with the sources of disvalue (pain, suffering, etc.) **we should not seek to irrationally destroy the person, the very source and condition of all human possibility.**

#### Predictions best – solves paralysis and reactionism

**Ulfelder, 11** Jay Ulfelder is Research Director for the Political Instability Task Force, Science Applications International Corporation "Why Political Instability Forecasts Are Less Precise Than We’d Like (and Why It’s Still Worth Doing)" May 5 dartthrowingchimp.wordpress.com/2011/05/05/why-political-instability-forecasts-are-less-precise-than-wed-like-and-why-its-still-worth-doing/

If this is the best we can do, then what’s the point? Well, consider the alternatives. For starters, we might decide to skip statistical forecasting altogether and just target our interventions at cases identified by expert judgment as likely onsets. Unfortunately, those expert judgments are probably going to be an even less reliable guide than our statistical forecasts, so this “solution” only exacerbates our problem. Alternatively, we could take no preventive action and just respond to events as they occur. If the net costs of responding to crises as they happen are roughly equivalent to the net costs of prevention, then this is a reasonable choice. Maybe responding to crises isn’t really all that costly; maybe preventive action isn’t effective; or maybe preventive action is potentially effective but also extremely expensive. Under these circumstances, early warning is not going to be as useful as we forecasters would like. If, however, any of those last statements are false–if responding to crises already underway is very costly, or if preventive action is (relatively) cheap and sometimes effective–then we have an incentive to use forecasts to help guide that action, in spite of the lingering uncertainty about exactly where and when those crises will occur. Even in situations where preventive action isn’t feasible or desirable, reasonably accurate forecasts can still be useful if they spur interested observers to plan for contingencies they otherwise might not have considered. For example, policy-makers in one country might be rooting for a dictatorship in another country to fall but still fail to plan for that event because they don’t expect it to happen any time soon. A forecasting model which identifies that dictatorship as being at high or increasing risk of collapse might encourage those policy-makers to reconsider their expectations and, in so doing, lead them to prepare better for that event. Where does that leave us? For me, the bottom line is this: even though forecasts of political instability are never going to be as precise as we’d like, they can still be accurate enough to be helpful, as long as the events they predict are ones for which prevention or preparation stand a decent chance of making a (positive) difference.

#### No root cause

**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 has declined because of every global force consistent with the aff – proves no terminal impact uniqueness – prefer our ev which is based on multidisciplinary research and empirical data

**Pinker, 11** [Steven, professor of psychology at Harvard University, *The Better Angels of our Nature Why Violence Has Declined*, ISBN: 067002295

**T**his book is about what may be the most important thing that has ever happened in human history. Believe it or not—and I know that most people do not—violence has **declined** over long stretches of time, and today we may be living in the **most peaceable era** in our species’ existence. 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 an **unmistakable development**, visible on scales from millennia to years, from the waging of wars to the spanking of children. **No aspect of life** is untouched by the retreat from violence. Daily existence is very different if you always have to worry about being abducted, raped, or killed, and it’s hard to develop sophisticated arts, learning, or commerce if the institutions that support them are looted and burned as quickly as they are built. The historical trajectory of violence affects not only **how life is lived** but how it is understood. What could be more fundamental to **our sense of meaning** and purpose than a conception of whether the strivings of the human race over long stretches of time have left us better or worse off? How, in particular, are we to make sense of *modernity*—of the erosion of family, tribe, tradition, and religion by the forces of individualism, cosmopolitanism, reason, and science? So much depends on how we understand the legacy of this transition: whether we see our world as a nightmare of crime, terrorism, genocide, and war, or as a period that, by the standards of history, is blessed by unprecedented levels of peaceful coexistence. The question of whether the arithmetic sign of trends in violence is positive or negative also bears on our conception of human nature. Though theories of human nature rooted in biology are often associated with fatalism about violence, and the theory that the mind is a blank slate is associated with progress, in my view it is the other way around. How are we to understand the natural state of life when our species first emerged and the processes of history began? The belief that violence has increased suggests that the world we made has contaminated us, perhaps irretrievably. The belief that it has xxi decreased suggests that we started off nasty and that the artifices of civilization have moved us in a noble direction, one in which we can hope to continue. This is a big book, but it has to be. First I have to convince you that violence really has gone down over the course of history, knowing that the very idea invites skepticism, incredulity, and sometimes anger. Our cognitive faculties predispose us to believe that we live in violent times, especially when they are stoked by media that follow the watchword “If it bleeds, it leads.” The human mind tends to estimate the probability of an event from the ease with which it 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.1 No matter how small the percentage of violent deaths may be, in absolute numbers there will always be enough of them to fill the evening news, so people’s impressions of violence will be disconnected from the actual proportions. Also distorting our sense of danger is our moral psychology. No one has ever recruited activists to a cause by announcing that things are getting better, and bearers of good news are often advised to keep their mouths shut lest they lull people into complacency. Also, a large swath of our intellectual culture is loath to admit that there could be anything good about civilization, modernity, and Western society. But perhaps the main cause of the illusion of ever-present violence springs from one of the forces that drove violence down in the first place. The decline of violent behavior has been paralleled by a decline in attitudes that tolerate or glorify violence, and often the attitudes are in the lead. By the standards of the mass atrocities of human history, the lethal injection of a murderer in Texas, or an occasional hate crime in which a member of an ethnic minority is intimidated by hooligans, is pretty mild stuff. But from a contemporary vantage point, we see them as signs of how low our behavior can sink, not of how high our standards have risen. In the teeth of these preconceptions, I will have to persuade you with numbers, which I will glean from datasets and depict in graphs. In each case I’ll explain where the numbers came from and do my best to interpret the ways they fall into place. The problem I have set out to understand is the reduction in violence at many scales—in the family, in the neighborhood, between tribes and other armed factions, and among major nations and states. If the history of violence at each level of granularity had an idiosyncratic trajectory, each would belong in a separate book. But to my repeated astonishment, the global trends in almost all of them, viewed from the vantage point of the present, point downward. That calls for documenting the various trends between a single pair of covers, and seeking commonalities in when, how, and why they have occurred. Too many kinds of violence, I hope to convince you, have moved in the same direction for it all to be a coincidence, and that calls for an explanation. It is natural to recount the history of violence as a moral saga—a heroic struggle of justice against evil—but that is not my starting point. My approach is scientific in the broad sense of seeking explanations for why things happen. We may discover that a particular advance in peacefulness was brought about by moral entrepreneurs and their movements. But we may also discover that the explanation is more prosaic, like a change in technology, governance, commerce, or knowledge. Nor can we understand the decline of violence as an unstoppable force for progress that is carrying us toward an omega point of perfect peace. It is a collection of statistical trends in the behavior of groups of humans in various epochs, and as such it calls for an explanation in terms of psychology and history: how human minds deal with changing circumstances. A large part of the book will explore the psychology of violence and nonviolence. The theory of mind that I will invoke is the synthesis of cognitive science, affective and cognitive neuroscience, social and evolutionary psychology, and other sciences of human nature that I explored in *How the Mind Works*, *The Blank Slate*, and *The Stuff of Thought*. According to this understanding, the mind is a complex system of cognitive and emotional faculties implemented in the brain which owe their basic design to the processes of evolution. Some of these faculties incline us toward various kinds of violence. Others—“the better angels of our nature,” in Abraham Lincoln’s words—incline us toward cooperation and peace. The way to explain the decline of violence is to identify the changes in our cultural and material milieu that have given our peaceable motives the upper hand. Finally, I need to show how our history has engaged our psychology. Everything in human affairs is connected to everything else, and that is especially true of violence. Across time and space, the more peaceable societies also tend to be richer, healthier, better educated, better governed, more respectful of their women, and more likely to engage in trade. It’s not easy to tell which of these happy traits got the virtuous circle started and which went along for the ride, and it’s tempting to resign oneself to unsatisfying circularities, such as that violence declined because the culture got less violent. Social scientists distinguish “endogenous” variables—those that are inside the system, where they may be affected by the very phenomenon they are trying to explain—from the “exogenous” ones—those that are set in motion by forces from the outside. Exogenous forces can originate in the practical realm, such as changes in technology, demographics, and the mechanisms of commerce and governance. But they can also originate in the intellectual realm, as new ideas are conceived and disseminated and take on a life of their own. The most satisfying explanation of a historical change is one that identifies an exogenous trigger. To the best that the data allow it, I will try to identify exogenous forces that have engaged our mental faculties in different ways at different times and that thereby can be said to have caused the declines in violence. The discussions that try to do justice to these questions add up to a big book—big enough that it won’t spoil the story if I preview its major conclusions. *The Better Angels of Our Nature* is a tale of six trends, five inner demons, four better angels, and five historical forces. ***Six Trends*** (chapters 2 through 7). To give some coherence to the many developments that make up our species’ retreat from violence, I group them into six major trends. The first, which took place on the scale of millennia, was 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, beginning around five thousand years ago. With that change came a reduction in the chronic raiding and feuding that characterized life in a state of nature and a more or less fivefold decrease in rates of violent death. I call this imposition of peace the Pacification Process. The second transition spanned more than half a millennium and is best documented in Europe. Between the late Middle Ages and the 20th century, European countries saw a tenfold-to-fiftyfold decline in their rates of homicide. In his classic book *The Civilizing Process*, the sociologist Norbert Elias attributed this surprising decline to the consolidation of a patchwork of feudal territories into large kingdoms with centralized authority and an infrastructure of commerce. With a nod to Elias, I call this trend the Civilizing Process. The third transition unfolded on the scale of centuries and took off around the time of the Age of Reason and the European Enlightenment in the 17th and 18th centuries (though it had antecedents in classical Greece and the Renaissance, and parallels elsewhere in the world). It saw the first organized movements to abolish socially sanctioned forms of violence like despotism, slavery, dueling, judicial torture, superstitious killing, sadistic punishment, and cruelty to animals, together with the first stirrings of systematic pacifism. Historians sometimes call this transition the Humanitarian Revolution. The fourth major transition took place after the end of World War II. The two-thirds of a century since then have been witness to a **historically unprecedented development**: the great powers, and developed states in general, have **stopped waging war** on one another. Historians have called this blessed state of affairs the Long Peace.2 The fifth trend is also about armed combat but is more tenuous. Though it may be hard for news readers to believe, since the end of the Cold War in 1989, organized conflicts of all kinds—civil wars, genocides, repression by autocratic governments, and terrorist attacks—have declined throughout the world. In recognition of the tentative nature of this happy development, I will call it the New Peace. Finally, the postwar era, symbolically inaugurated by the Universal Declaration of Human Rights in 1948, has seen a growing revulsion against aggression on smaller scales, including violence against ethnic minorities, women, children, homosexuals, and animals. These spin-offs from the concept of human rights—civil rights, women’s rights, children’s rights, gay rights, and animal rights—were asserted in a cascade of movements from the late 1950s to the present day which I will call the Rights Revolutions. *Five Inner Demons* (chapter 8)*.* Many people implicitly believe in the Hydraulic Theory of Violence: that humans harbor an inner drive toward aggression (a death instinct or thirst for blood), which builds up inside us and must periodically be discharged. Nothing could be further from a contemporary scientific understanding of the psychology of violence. Aggression is not a single motive, let alone a mounting urge. It is the output of several psychological systems that differ in their environmental triggers, their internal logic, their neurobiological basis, and their social distribution. Chapter 8 is devoted to explaining five of them. *Predatory* or *instrumental violence* is simply violence deployed as a practical means to an end. *Dominance* is the urge for authority, prestige, glory, and power, whether it takes the form of macho posturing among individuals or contests for supremacy among racial, ethnic, religious, or national groups. *Revenge* fuels the moralistic urge toward retribution, punishment, and justice. *Sadism* is pleasure taken in another’s suffering. And *ideology* is a shared belief system, usually involving a vision of utopia, that justifies unlimited violence in pursuit of unlimited good. *Four Better Angels* (chapter 9)*.* Humans are not innately good (just as they are not innately evil), but they come equipped with motives that can orient them away from violence and toward cooperation and altruism. *Empathy* (particularly in the sense of sympathetic concern) prompts us to feel the pain of others and to align their interests with our own. *Self-control* allows us to anticipate the consequences of acting on our impulses and to inhibit them accordingly. The *moral sense* sanctifies a set of norms and taboos that govern the interactions among people in a culture, sometimes in ways that decrease violence, though often (when the norms are tribal, authoritarian, or puritanical) in ways that increase it. And the faculty of *reason* allows us to extricate ourselves from our parochial vantage points, to reflect on the ways in which we live our lives, to deduce ways in which we could be better off, and to guide the application of the other better angels of our nature. In one section I will also examine the possibility that in recent history *Homo sapiens* has literally evolved to become less violent in the biologist’s technical sense of a change in our genome. But the focus of the book is on transformations that are strictly environmental: changes in historical circumstances that engage a fixed human nature in different ways. *Five Historical Forces* (chapter 10). In the final chapter I try to bring the psychology and history back together by identifying exogenous forces that favor our peaceable motives and that have driven the multiple declines in violence. The *Leviathan*, a state and judiciary with a monopoly on the legitimate use of force, can defuse the temptation of exploitative attack, inhibit the impulse for revenge, and circumvent the self-serving biases that make all parties believe they are on the side of the angels. *Commerce* is a positive-sum 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, and they are less likely to become targets of demonization and dehumanization. *Feminization* is the process in which cultures have increasingly respected the interests and values of women. Since violence is largely a male pastime, cultures that empower women tend to move away from the glorification of violence and are less likely to breed dangerous subcultures of rootless young men. The forces of *cosmopolitanism* such as literacy, mobility, and mass media can prompt people to take the perspective of people unlike themselves and to expand their circle of sympathy to embrace them. Finally, an intensifying application of knowledge and rationality to human affairs—the *escalator of reason—*can force people to recognize the futility of cycles of violence, to ramp down the privileging of their own interests over others’, and to reframe violence as a problem to be solved rather than a contest to be won. As one becomes aware of the 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. The shift is not toward complacency: we enjoy the peace we find today because people in past generations were appalled by the violence in their time and worked to reduce it, and so we should work to reduce the violence that remains in our time. Indeed, it is a recognition of the decline of violence that best affirms that such efforts are worthwhile. Man’s inhumanity to man has long been a subject for moralization. With the knowledge that something has driven it down, we can also treat it as a matter of cause and effect. Instead of asking, “Why is there war?” we might ask, “Why is there peace?” We can obsess not just over what we have been doing wrong but also over what we have been doing right. Because we *have* been doing something right, and it would be good to know what, exactly, it is. Many people have asked me how I became involved in the analysis of violence. It should not be a mystery: violence is a natural concern for anyone who studies human nature. I first learned of the decline of violence from Martin Daly and Margo Wilson’s classic book in evolutionary psychology, *Homicide*, in which they examined the high rates of violent death in nonstate societies and the decline in homicide from the Middle Ages to the present. In several of my previous books I cited those downward trends, together with humane developments such as the abolition of slavery, despotism, and cruel punishments in the history of the West, in support of the idea that moral progress is compatible with a biological approach to the human mind and an acknowledgment of the dark side of human nature. 3 I reiterated these observations in response to the annual question on the online forum www.edge.org, which in 2007 was “What Are You Optimistic About?” My squib provoked a flurry of correspondence from scholars in historical criminology and international studies who told me that the evidence for a historical reduction in violence is more extensive than I had realized.4 It was their data that convinced me that there was an underappreciated story waiting to be told.

#### Alt’s not competitive – modern capitalism is already based on excess – explain it as uniqueness no U excess now ( change tag for KOCH)

**Goux et al 90** (Jean-Joseph, the Lawrence Favrot professor of French and chair of French studies at Rice University, Kathryn Ascheim, PhD and editor of *Nature Biotech*, Rhonda Garelick, taught at Yale, University of Colorado at Boulder, and Columbia, critic of literature and politics, PhD in comparative literature, “General Economics and Postmodern Capitalism,” Yale French Studies No. 78 On Bataille, pp. 206-224)

Where do we situate Bataille’s claim? What happens to the demand of the sacred in capitalist society? How do we reconcile the affirmation that capitalism represents an unprecedented break with all archaic [precapitalist] forms of expenditure and the postulate of the necessary universality of spending as pure loss? This is the difficulty Bataille wants to maintain as a general anthropological principle the necessity of unproductive expenditure while simultaneously upholding the historic singularity of capitalism with regard to this expenditure. Bourgeois society corresponds to a “general atrophy of former sumptuary processes” (41). An anomaly whereby loss is not absent (which would contradict the general principle) but virtually unreadable: “Today, the great and free social forms of unproductive expenditure have disappeared. Nevertheless, we should not conclude from this that the very principle of expenditure is no longer situated at the end of economic activity” (37). So what happens to ostentatious expenditure in capitalism? And can we really believe, furthermore, that the even more radical desacralization effected by communism could become a libertarian affirmation of sovereignty – the feast of self-consciousness, without divinities and myths? Everything suggests that Bataille was unable to articulate the mystical tension toward sovereign self-consciousness “without form and mode,” “pure expenditure” (224) with a utopia of social life that would make it possible, nor to explain in a *developed* capitalist society the consumption of the surplus beyond its reinvestment in production. Now it is quite clear that today’s capitalism has come a long way from the Calvinist ethic that presided at its beginning. The values of thrift, sobriety, and asceticism no longer have the place that they held when Balzac could caricature the dominant bourgeois mentality with the characters of pére Grandet or the usurer Gobseck. It is doubtful that the spirit of capitalism, which according to Weber is expressed with an almost classical purity in Benjamin Franklin’s principles [“he who kills a five shilling coin assassinates all that it could have produced: entire stacks of sterling pounds”] [cited by Bataille, 163], could today be considered the spirit of the times. Undoubtedly, the pace at which all residual sacred elements inherited from feudalism are eliminated has quickened. but hasn’t contemporary society undergone a transformation of the ethic of consumption, desire, and pleasure that renders the classical [Weberian] analyses of the spirit of capitalism [to which Bataille subscribes] inadequate? If the great opposition between the sacred and the profane no longer structures social life, if communal, sacrificial, and glorious expenditure has been replaced by private expenditure, it is no less true that advanced capitalism seems to exceed the principle of restricted economy and utility that presided at its beginning. No society has “wasted” as much as contemporary capitalism. What is the form of this waste, of this excess?

#### Plan key to value – Bataille got it all wrong – it is precisely because of the finiteness of life that it must be preserved – their value to life claims can only be made from a position that does not respect it – best reason you can site – phrase it that win if their theory is correct – be highly sckeptical of impact claims and their link args – most likely = big picture framing card – vote neg to endorse sacrifice- use the evidence to deny that it does that thing - voting neg is a gesture it is an incorrect gestues

Jean-Luc **Nancy**, 1991, French Philosopher, “The Unsacrificable” Yale French Studies 79

But if sovereignty is nothing, if the “obscure God” is only the obscurity of desire ecstatic in the face of itself, if existence arranges itself only towards its own finitude, then we must think apart from sacrifice. On the one hand, what is at stake since the beginning of the Western sublation of sacrifice should definitively be acknowledged: strictly speaking we know nothing decisive about the old sacrifice. We need to admit that what we consider as a mercenary exchange (“Here is the butter…”) sustained and gave meaning to billions of individual and collective existences, and we do not know how to think about what founds this gesture. (We can only guess, confusedly, that this barter in itself goes beyond barter.) On the contrary, we know that, for us, it is absolutely impossible to declare: “here are the lives, where are the others?” (all the others: our other lives, the life of a great Other, the other of life and the other life in general). Consequently, on the other hand, it should be definitively acknowledged that the Western economy of sacrifice has come to a close, and that it is closed by the decomposition of the sacrificial apparatus itself, that bloody transgression by which the “moment of the finite” would be transcended and appropriated infinitely. But finitude is not a “moment” in a process or an economy. A finite existence does not have to let its meaning spring forth through a destructive explosion of its finitude. Not only does it not have to do so; in a sense it cannot even do so: thought rigorously, thought according to its *Ereignis*, “finitude” signifies that existence cannot be sacrificed. It cannot be sacrificed because, in itself, it is already, not sacrificed, but offered to the world. There is a resemblance, and the two can be mistaken for one another; and yet, there is nothing more dissimilar. One could say: existence is in essence sacrificed. To say this would be to reproduce, in one of its forms, the fundamental utterance of Western sacrifice. And we would have to add this major form, which necessarily follows: that existence is, in its essence, sacrifice. To say that existence is offered is no doubt to use a word from the sacrificial vocabulary (and if we were in the German language, it would be the same word: Opfer, Aufopfertmg). But it is an attempt to mark that, if we have to say that existence is sacrificed, it is not in any case sacrificed by anyone, nor is it sacrificed to anything. "Existence is offered" means the finitude of existence. Finitude is not negativity cut out of being and granting access, through this cutting, to the restored integrity of being or to sovereignty. Finitude utters what Bataille utters in saying that sovereignty is nothing. Finitude simply corresponds to the generative formula of the thought of existence, which is the thought of the finitude of being, or the thought of the meaning of being as the finitude of meaning. This formula states: "the "essence" of Dasein lies in its existence.22 If its essence (in quotation marks) is in its existence, it is that the existent has no essence. It cannot be returned to the trans-appropriation of an essence. But it is offered, that is to say, it is presented to the existence that it is. The existence exposes being in its essence disappropriated of all essence, and thus of all "being:" the being that is not. Such negativity, however, does not come dialectically to say that it shall be, that it shall finally be a trans-appropriated Self. On the contrary, this negation affirms the inappropriate as its most appropriate form of appropriation, and in truth as the unique mode of all appropriation. Also, the negative mode of this utterance: "being is not" does not imply a negation but an ontological affirmation. This is what is meant by Ereignis. The existent arrives, takes place, and this is nothing but a being-thrown into the world. In this being-thrown, it is offered. But it is offered by no one, to no one. Nor is it self-sacrificed, if nothing—no being, no subject—precedes its being-thrown. In truth, it is not even offered or sacrificed to a Nothing, to a Nothingness or an Other in whose abyss it would come to enjoy its own impossibility of being impossibly. It is exactly at this point that both Bataille and Heidegger must be relentlessly corrected. Corrected, that is: withdrawn from the slightest tendency towards sacrifice. For this tendency towards sacrifice, or through sacrifice, is always linked to a fascination with an ecstasy turned towards an Other or towards an absolute Outside, into which the subject is diverted/spilled the better to be restored. Western sacrifice is haunted by an Outside of finitude, as obscure and bottomless as this "outside" may be. But there is no "outside." The event of existence, the "there is," means that there is nothing else. There is no "obscure God." There is no obscurity that would be God. In this sense, and since there is no longer any clear divine epiphany, I might say that what technique presents us with could simply be: clarity without God. The clarity, however, of an open space in which an open eye can no longer be fascinated. Fascination is already proof that something has been accorded to obscurity and its bloody heart. But there is nothing to accord, nothing but "nothing." "Nothing" is not an abyss open to the outside. "Nothing" affirms finitude, and this "nothing" at once returns existence to itself and to nothing else. It desubjectivizes it, removing all possibility of trans-appropriating itself through anything but its own event, advent. Existence, in this sense, its proper sense, is unsacrificeable. Thus there is room to give meaning to the infinite absence of appropriable meaning. Once again, "technique" could well constitute such an horizon. That is once more to say, there must be no retreat: the closure of an immanence. But this immanence would not have lost or be lacking transcendence. In other words, it would not be sacrifice in any sense of the word. What we used to call "transcendence" would signify rather that appropriation is immanent, but that "immanence" is not some indistinct coagulation: it is made only from its horizon. The horizon holds existence at a distance from itself, in the gap or the "between" that constitutes it: between birth and death, between one and the others. One does not enter the between, which is also the space of the play of mimesis and of methexis. Not because it would be an abyss, an altar, or an impenetrable heart, but because it would be nothing other than the limit of finitude; and lest we confuse it with, say, Hegelian "finiteness," this limit is a limit that does not soar above nothingness. Existence alone breaks away from even itself. Does this mean rejoicing in a mediocre and limited life? Surely such a suspicion could itself come only from a mediocre and limited life. And it is this same life that could suddenly be exalted, fascinated, by sacrifice. Neither pain nor death are to be denied. Still less, if possible, are these to be sought after in view of some transappropriation. At issue, rather, is a pain that no longer sacrifices, and which one no longer sacrifices. True pain, doubtless, and perhaps even the truest of all. It does not efface joy (nor enjoyment), and yet, it is not the latter's dialectical or sublimating threshhold either. There is no threshhold, no sublime and bloody gesture, that will cross it. After all, Western sacrifice has almost always known, and almost always been ready to say, that it sacrificed to nothing. That is why it has always tended to say that true sacrifice was no longer sacrifice. Yet henceforth it is incumbent upon us to say—after Bataille, with him and beyond him—that there is no "true" sacrifice, that veritable existence is unsacrificeable, and that finally the truth of existence is that it cannot be sacrificed.

#### Alt doesn’t solve – Expenditure is not transgressive- limitless consumption is useless theory – doesn’t solve the K even if ti solves the aff

Paul **Mann**, 19**99,** “The Exquisite Corpse of Georges Bataille” in Masocriticism, p. 67-9

I would like at one and the same time to affirm this model and to dismiss it as the most desperate alibi of all. For “sacrificial consumption” can never become an explicit critical motive.13 At the moment it presents itself as a proper element of some critical method, it degenerates into another useful trope, another bit of intellectual currency, another paper-thin abyss, another proxy transgression; and the force of transgression moves elsewhere, beneath a blinder spot in the critical eye.14 Questions of motive or understanding, the fact that one might be self-critical or at least aware of recuperation, are immaterial: what is at stake here is not self-consciousness but economics, material relations of appropriation and exclusion, assimilation and positive loss. Whatever transgression occurs in writing on Bataille does so only through the stupid recuperation and hence evacuation of the whole rhetoric and dream of transgression, only insofar as the false profundity of philosophy or theory evacuates the false profundities it apes. To justify this as the sublime loss of loss is merely to indulge a paradoxical figure. Excess is not a project but a by-product of any discourse; the interest of Bataillean discourse lies chiefly in the compulsive and symptomatic way it plays with its feces. The spectacle of critics making fools of themselves does not reveal the sovereign truth of death: it is only masocritical humiliation, a pathological attempt to disavow the specter of death. As for the present essay, it makes no claims to any redeeming sacrifice. Far from presenting you with a truer Bataille, far from speaking in his voice more clearly than his other readers, this essay pleads guilty to the indictment against every appropriation. Until philosophy and theory squeal like a pig before Bataille’s work, as he claims to have done before Dali’s canvases, there will be no knowledge of Bataille. In the end, one might have to take and even stricter view: there is no discourse of transgression, either on or by Bataille. None at all. It would be necessary to write a “Postscript to Transgression” were it not for the fact that Foucault already wrote it in his “Preface,” were it not for the fact that Bataille himself wrote it the moment before he first picked up his pen. It makes no difference whether one betrays Bataille, because one lip syncs Bataille’s rhetoric or drones on in the most tedious exposition. All of these satellite texts are not heliotropic in relation to the solar anus of Bataille’s writing, of the executioners he hoped (really?) would meet him in the Bois de Boulogne, or depensives in spite of themselves. It would be sentimental to assign them such privileges. They merely fail to fail. They are symptoms of a discourse in which everyone is happily transgressing everyone else and nothing ever happens, traces of a certain narcissistic pathos that never achieves the magnificent loss Bataille’s text conveniently claims to desire, and under whose cover it can continue to account for itself, hoarding its precious debits in a masocriticism that is anything but sovereign and gloriously indifferent. What is given to us, what is ruinously and profitably exchanged, is a lie. Heterology gives the lie to meaning and discourse gives the lie to transgression, in a potlatch that reveals both in their most essential and constitutive relation. Nothing is gained by this communication except profit-taking from lies. We must indict Bataille as the alibi that allows all of this writing to go on and on, pretending it is nothing it is not, and then turn away from Bataille as from a sun long since gone nova, in order to witness the slow freezing to death of every satellite text. The sacrificial consumption of Bataille has played itself out; the rotten carcass has been consumed: no more alibis. What is at stake is no longer ecstatic sexuality or violent upheavals or bloody sacrifices under the unblinking eye of the sun; nor was it ever, from the very beginning of Bataille’s career. These are merely figures in the melodramatic theater of what is after all a “soft expenditure” (Hollier 1989, xv), a much more modest death, a death much closer to home. It has never been more than a question of the death of the theory and of theory itself as death. Of theory-death. A double fatality.

#### Alt = extinction – Bataille’s notions of subjectivity are consistent with Nazism

Slavoj **ZiZek**, 1996, The Indivisible Remainder: An Essay on Shelling and Related Matters, p. 124-5

This notion of the modern, Cartesian subject *qua* the radical negativity of the double (self-relating) sacrifice also enables us to demarcate the paradoxical place of the theories of Georges Bataille, that is, of Bataille’s fascination with the ‘real’, material sacrifice, with the different forms of holocaust and the excessive destruction of (economic, social, etc.) reality.41 On the one hand, of course, Bataille’s topic is modern subjectivity, the radical negativity implied in the position of the pure transcendental subject. On the other hand, Bataille’s universe remains the pre-Newtonian universe of balanced circular movement, or – to put it in a different way – his notion of subjectivity is definitely pre-Kantian: Bataille’s ‘subject’ is not yet the pure void (the transcendental point of self-relating negativity), but remains an *inner-worldly, positive force*. Within these co-ordinates, the negativity which characterizes the modern subject can express itself only in the guise of a violent destruction which throws the entire circuit of nature off the rails. It is as if, in a kind of unique short circuit, *Bataille projects the negativity of the modern subject backwards, into the ‘closed’, pre-modern Aristotelian universe of balanced circular movement, within which this negativity can materialize itself only as an ‘irrational’, excessive, non-economical expenditure*. In short, what Bataille fails to take notice of is that the modern (Cartesian) subject no longer needs to sacrifice goat’s intestines, his children, and so on, since *his very existence already entails the most radical (redoubled, self-relating) sacrifice, the sacrifice of the very kernel of his being*. Incidentally, this failure of Bataille also throws a new light on the sacrificial violence, the obsession with the ultimate twilight of the universe, at work in Nazism: in it, we also encounter the reinscription of the radical negativity characteristic of the modern subject into the closed ‘pagan’ universe

 in which the stability of the social order guaranteed by some kind of repeated sacrificial gesture – what we encounter in the libidinal economy of Nazism is *the modern subjectivity perceived from the standpoint of the pre-modern ‘pagan’ universe*.42

**Excessive consumption will cause extinction – it’s already at an unsustainable level.**

**Trainer, 07** (Ted Trainer, Senior Lecturer in the School of Social Work at the University of New South Wales. “Renewable Energy Cannot Sustain a Consumer Society” p. 128-29)

It is of the utmost importance to recognize that whether or not renewable energy can sustain consumer-capitalist society is not a matter of whether it can meet present energy demand. The essential question is whether it can enable constant increase int he volume of goods and services being consumed and the associated increase in energy demand. Energy demand is rising significantly, although estimates of future demand vary. ABARE’s *Energy Outlook 2000*shows that the average annual rate of growth in energy use in Australia over the decade of the 1990s was around 2.5% p. a. The *Australian Yearbook* shows that between 1982 and 1998 Australian energy use increased 50%, an arithmetical average growth rate of 3.13% p.a., and the rate has been faster in more recent years. (Graph 5.12.) However ABARE estimates that Australian energy demand will slow, reaching about 1.9% p.a. by 2040, meaning more than a doubling in annual use by then. In July 2003 Australian electricity authorities warned that blackouts are likely in coming years due to the rapid rate of increase in demand, estimated at almost 3% pa for the next five years. (ABC News, 31 July.) Robbins (2003) reports NEMMCO predicting electricity growth over the next 10 years in NSW, Queensland and Victoria as 3.1%, 3.5% and 2.6% p.a. respectively. Poldy (2005) shows that over the past 100 years Australian energy consumption has followed GDP growth closely, and he estimates that in recent years it has approximated a growth rate of 3.6% p.a. In 2004 world energy use jumped, growing at 4.3% p.a. (Catan, 2005.) Thus the commitment to growth greatly exacerbates the problem, and in turn all of the other resource supply problems, because all involve an energy component. For instance if the cost of fuel increases significantly, then so will the cost of food and minerals, and even university courses, because fuel is needed to produce them. It has been argued above that renewables are not likely to be capable of meeting present electricity and liquid fuel demand, but given the inertia built into growth trends, the demand to be met will probably be three or four times as big as it is now by mid century...and doubling every approximately 35 years thereafter. To summarise regarding Fault 1, consumer-capitalist society is obviously grossly unsustainable. We have far overshot levels of production, consumption, resource use and affluence that are sustainable for ourselves over a long period of time, let alone extended to all the world’s people. Yet our top priority is to increase them continuously, without limit. This is the basic cause of the many alarming sustainability problems now threatening our survival.

**Post-politics forecloses authentic political possibility and traps people within bare life – turns the case and destroys value to life**

**Zizek 98** [Slavoj, Slovenian Superstar and Travelling Professor and Philohopher across America and Europe, February 1998, Journal of Political Ideologies, “For a Leftist Appropriation of the European Legacy”, <http://www.lacan.com/zizek-leftist.htm>] (from 7WM Katrina Neg File)

Ranciere is right to emphasize how it is against this background that one should interpret the fascination of `public opinion' by the unique event of holocaust: the reference to holocaust as the ultimate, unthinkable, apolitical crime, as the Evil so radical that it cannot be politicized (accounted for by a political dynamics), serves as the operator which allows us to depoliticize the social sphere, to warn against the presumption of politicization. Holocaust is the name for the unthinkable apolitical excess of politics itself: it compels us to subordinate politics to some more fundamental ethics. The Otherness excluded from the consensual domain of tolerant/rational post-political negotiation and administration returns in the guise of inexplicable pure Evil. What defines postmodern `post-politics' is thus the secret solidarity between its two opposed Janus faces: on the one hand, the replacement of politics proper by depoliticized 'humanitarian' operations (the humanitarian protection of human and civil rights and aid to Bosnia, Somalia, Ruanda, North Korea ...); on the other hand, the violent emergences of depoliticized `pure Evil' in the guise of 'excessive' ethnic or religious fundamentalist violence. In short, what Ranciere proposes here is a new version of the old Hegelian motto `Evil resides in the gaze itself which perceives the object as Evil': the contemporary figure of Evil, too 'strong' to be accessible to political analysis (holocaust, etc.), appears as such only to the gaze which constitutes it as such (as depoliticized). To put it in Hegel's terms, what is crucial is their speculative identity, i.e. the `infinite judgement', `Humanitarian depoliticized compassion is the excess of Evil over its political forms'.

#### Sustainable and no impact

**Norberg, 3** (Johan Norberg, Senior Fellow at Cato Institute, “In Defense of Global Capitalism”, p. 223)

It is a mistake, then, to believe that growth automatically ruins the environment. And claims that we would need this or that number of planets for the whole world to attain a Western standard of consumption—those “ecological footprint” calculations—are equally untruthful. Such a claim is usually made by environmentalists, and it is concerned, not so much with emissions and pollution, as with resources running out if everyone were to live as we do in the affluent world. Clearly, certain of the raw materials we use today, in present day quantities, would not suffice for the whole world if everyone consumed the same things. But that information is just about as interesting as if a prosperous Stone Age man were to say that, if everyone attained his level of consumption, there would not be enough stone, salt, and furs to go around. Raw **material consumption is not static**. With more and more people achieving a high level of prosperity, we start looking for ways of using other raw materials. Humanity is constantly improving technology so as to get at raw materials that were previously inaccessible, and we are attaining a level of prosperity that makes this possible. New innovations make it possible for old raw materials to be put to better use and for garbage to be turned into new raw materials. A century and a half ago, oil was just something black and sticky that people preferred not to step in and definitely did not want to find beneath their land. But our interest in finding better energy sources led to methods being devised for using oil, and today it is one of our prime resources. Sand has never been all that exciting or precious, but today it is a vital raw material in the most powerful technology of our age, the computer. In the form of silicon—which makes up a quarter of the earth's crust— it is a key component in computer chips. There is a **simple market mechanism that averts shortages**. If a certain raw material comes to be in short supply, its price goes up. This makes everyone more **interested in economizing** on **that resource**, in finding more of it, in reusing it, and in trying to find substitutes for it.

#### Alt fails – this is comparative

Winter 3 – PhD in Psychology, Professor @ Whitman

Deborah, “The Psychology of Environmental Problems,” Google Book

Giving up comforts and conveniences may be more than we can fathom, and reverting to preindustrial culture is probably impossible anyway. Even if we could scale down consumption to preindustrial levels, most people would not want to. However, many preindustrial cultures have sustained themselves for centuries, demonstrating that sustainable culture is possible. While copying preindustrial cultures may not be feasible, selecting certain features might be useful. In addition, sustainable cultures may offer some benefits to human psychological needs that are not well provided for by industrialized cultures. The modern Western tradition of emphasizing the individual has given us both unsustainable technology and increasing social alienation. Embedded in the modern Western worldview, we try to use the former to mitigate the latter. It may not even be necessary to "give anything up" in order to ac-complish a reduction or reversal of environmental degradation. Improving efficiency or productivity is typically much more effective than significantly reducing overall use, and much relevant technology is already available. For example, it would be far easier to find an automobile with twice the fuel efficiency of our present cars than to cut our driving in half, and buying an efficient water heater is a lot easier than reducing our use of hot water (Stern, 2000).

#### Alt fails – maximizing energy production is human nature and reducing consumption doesn’t solve their impact

Datschefski 4 (Edwin – BioThinking International, “Consumption is Good ? !”, January, http://www.biothinking.com/consume.pdf)

It seems that it's natural to use energy, and the more the better. Ecologists like Lotka (1922) and Odum and Pinkerton (1955) suggested that the **biological systems that survive are those that develop the most power inflow and u se it to best meet their needs for survival**. Schneider and Kay (1994) proposed that a better description of these "power laws" would be that biological systems develop in a manner as to "increase their degradation rate, and that biological growth, ecosystem development and evolution represent the development of new dissipative pathways." As ecosystems develop or mature they tend to increase their total dissipation, and develop more complex structures with greater diversity, more cycling, more energy flow and more hierarchical levels. So ecological theory shows us that a complex adaptive system **like the current industrial system will** inherently evolve to maximise throughput of energy **and materials**. I'm not disputing the benefits of efficiency, or the limits to growth. But there does seem to be a lot of (in my view) **futile effort directed at encouraging people to consume l ess**. People are natural-born shoppers. I defy anyone reading this to claim that they have deprived themselves of that hifi, boat, shoes, camera, etc. that they really fancied. **You also** can't solve environmental problems **by simply using less.** There is a fundamental package of food and goods that a household requires, and while it's possible to make the footprint of that package smaller, we're still looking at about 7 tonnes of stuff per household per year, which is about 140 tonnes including embodied energy and mass. You can avoid this shooting up to 10 or 15 tonnes of stuff by renting and buying durable products and so on, but even the thriftiest household will still have a basic consumption requirement. The focus for improvement must therefore be on **changing product and process design so that materials flow is more systemic**. All products are ultimately disposable. We just need all of them to be designed to go back and become food for another system. So don't feel guilty about buying the products you have to get. Buy with caution and respect for the materials used. And divert the energy of your concerns into action -- tell the manufacturer of your new camera / car / bed etc. about how they can make it better. Most manufacturers think they are doing perfectly OK if they are complying with the law and have no -one demonstrating outside their head office. Going 100% cyclic solar and safe simply isn't on the agenda yet. So what if every member of every environment group (that's about 5 to 50% of the population, depending what country you live in) asked the manufacturers of the myriad of products that they

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#### Extinction

**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.