### 1NC – CP

#### Counterplan Text: States, except the United States, should ban the appropriation of outer space by private entities. The United States should fund the appropriation of outer space for the mining of rare earth metals from asteroids by private entities.

#### The PIC is key to beat China and protect against Chinese REM gatekeeping

**Stavridis 21** [(James, retired US Navy admiral, chief international diplomacy and national security analyst for NBC News, senior fellow at JHU Applied Physics Library, PhD in Law and Diplomacy from Tufts) “U.S. Needs a Strong Defense Against China’s Rare-Earth Weapon,” Bloomberg Opinion, March 4, 2021, <https://www.bloomberg.com/opinion/articles/2021-03-04/u-s-needs-a-strong-defense-against-china-s-rare-earth-weapon>] TDI

You could be forgiven if you are confused about what’s going on with rare-earth elements. On the one hand, news reports indicate that China may increase production quotas of the minerals this quarter as a [goodwill gesture](https://www.scmp.com/news/china/diplomacy/article/3122501/china-raises-rare-earth-quotas-goodwill-trade-signal-us) to the Joe Biden administration. But other sources say that China may ultimately ban the export of the rare earths altogether on “[security concerns](https://www.bloomberg.com/news/articles/2021-02-19/china-may-ban-rare-earth-technology-exports-on-security-concerns?sref=QYxyklwO).” What’s really going on here?

There are 17 elements considered [rare earths](https://www.bloomberg.com/news/articles/2021-02-16/why-rare-earths-are-achilles-heal-for-europe-u-s-quicktake) — lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium and yttrium — and while many aren’t actually rare in terms of global deposits, extracting them is difficult and expensive. They are used across high-tech manufacturing, including smartphones, fighter aircraft and components in virtually all advanced electronics. Of particular note, they are essential to many of the clean-energy technologies expected to come online in this decade.

I began to focus on rare-earth elements when I commanded the North Atlantic Treaty Organization’s presence in Afghanistan, known as the International Security Assistance Force. While Afghans live in an extremely poor country, [studies](https://thediplomat.com/2020/02/afghanistans-mineral-resources-are-a-lost-opportunity-and-a-threat/) have assessed that they sit atop $1 trillion to $3 trillion in a wide variety of minerals, including rare earths. Some [estimates](https://www.fraserinstitute.org/article/afghanistans-rare-earth-element-bonanza) put the rare-earth levels alone at 1.4 million metric tons.

But every time I tried to visit a mining facility, the answer I got from my security team was, “It’s too dangerous right now, admiral.” Unfortunately, despite a great deal of effort by the U.S. and NATO, those security challenges remain, deterring the large foreign-capital investments necessary to harvest the lodes. Which brings us back to Beijing.

China controls roughly 80% of the rare-earths market, between what it mines itself and processes in raw material from elsewhere. If it decided to wield the weapon of restricting the supply — something it has repeatedly [threatened](https://www.wsj.com/articles/china-trade-fight-raises-specter-of-rare-earth-shortage-11559304000) to do — it would create a significant challenge for manufacturers and a geopolitical predicament for the industrialized world.

It could happen. In 2010, Beijing threatened to cut off exports to Japan over the disputed Senkaku Islands. Two years ago, Beijing was reportedly considering restrictions on exports to the U.S. generally, as well as against specific companies (such as defense giant Lockheed Martin Corp.) that it deemed in violation of its policies against selling advanced weapons to Taiwan.

President Donald Trump’s administration issued an executive order to spur the production of rare earths domestically, and created an [Energy Resource Governance Initiative](https://www.state.gov/wp-content/uploads/2019/06/Energy-Resource-Governance-Initiative-ERGI-Fact-Sheet.pdf) to promote international mining. The European Union and Japan, among others, are also aggressively seeking newer sources of rare earths.

Given this tension, it was superficially surprising that China announced it would boost its mining quotas in the first quarter of 2021 by nearly 30%, reflecting a continuation in strong (and rising) demand. But the increase occurs under a shadow of uncertainty, as the Chinese Communist Party is undertaking a “review” of its policies concerning future sales of rare earths. In all probability, the tactics of the increase are temporary, and fit within a larger strategy.

China will go to great lengths to maintain overall control of the global rare-earths supply. This fits neatly within the geo-economic approach of the [One Belt, One Road](https://www.bloomberg.com/opinion/articles/2019-10-30/china-is-determined-to-reshape-the-globe) initiative, which seeks to use a variety of carrots and sticks — economic, trade, diplomatic and security — to create zones of influence globally. In terms of rare earths, the strategy seems to be allowing carefully calibrated access to the elements at a level that makes it economically less attractive for competitors to undertake costly exploration and mining operations. This is similar to the oil-market strategy used by Russia and the Organization of Petroleum Exporting Countries for decades.

Some free-market advocates believe that China will not take aggressive action choking off supply because that could [precipitate retaliation](https://www.bloomberg.com/opinion/articles/2021-02-22/china-weaponizing-rare-earths-technology-will-probably-backfire) or accelerate the search for alternate sources in global markets. What seems more likely is a series of targeted shutdowns directed against specific entities such as U.S. defense companies, Japanese consumer electronics makers, or European industrial concerns that have offended Beijing.

The path to rare-earth independence for the U.S. must include: Ensuring supply chains of rare earths necessary for national security; promoting the exploitation of the elements domestically (and removing barriers to responsibly doing so); mandating that defense contractors and other critical-infrastructure entities wean themselves off Chinese rare earths; sponsoring research and development to find alternative materials, especially for clean energy technology; and creating a substantial stockpile of the elements in case of a Chinese boycott.

This is a bipartisan agenda. The Trump administration’s [strategic assessment](https://www.commerce.gov/news/press-releases/2019/06/department-commerce-releases-report-critical-minerals) of what needs to be done (which goes beyond just 17 rare earths to include a total of 35 critical minerals) is thoughtful, and should serve as a basis for the Biden administration and Congress.

#### REM access key to military primacy and tech advancement – alternatives fail.

**Trigaux 12** (David, University Honors Program University of South Florida St. Petersburg) “The US, China and Rare Earth Metals: The Future Of Green Technology, Military Tech, and a Potential Achilles‟ Heel to American Hegemony,” USF St. Petersberg, May 2, 2012, <https://digital.stpetersburg.usf.edu/cgi/viewcontent.cgi?article=1132&context=honorstheses>] TDI

The implications of a rare earth shortage aren’t strictly related to the environment, and energy dependence, but have distinct military implications as well that could threaten the position of the United States world’s strongest military. The United States place in the world was assured by powerful and decisive deployments in World War One and World War Two. Our military expansion was built upon a large, powerful industrial base that created more, better weapons of war for our soldiers. During the World Wars, a well-organized draft that sent millions of men into battle in a short amount of time proved decisive, but as the war ended, and soldiers drafted into service returned to civilian life, the U.S. technological superiority over its opponents provided it with sustained dominance over its enemies, even as the numerical size of the army declined. New technologies, such as the use of the airplane in combat, rocket launched missiles, radar systems, and later, GPS, precision guided missiles, missile defense systems, high tech tanks, lasers, and other technologies now make the difference between victory and defeat.

The United States military now serves many important functions, deterring threats across the world. The United States projects its power internationally, through a network of bases and allied nations. Thus, the United States is a powerful player in all regions of the world, and often serves as a buffer against conflict in these regions. US military presence serves as a buffer against Chinese military modernization in Eastern Asia, against an increasingly nationalist Russia in Europe, and smaller regional actors, such as Venezuela in South America and Iran in the Middle East. The U.S. Navy is deployed all over the world, as the guarantor of international maritime trade routes. The US Navy leads action against challenges to its maritime sovereignty on the other side of the globe, such as current action against Somali piracy. Presence in regions across the world prevents escalation of potential crisis. These could result in either a larger power fighting a smaller nation or nations (Russia and Georgia, Taiwan and China), religious opponents (Israel and Iran), or traditional foes (Ethiopia and Eretria, Venezuela and Colombia, India and Pakistan). US projection is also key deterring emerging threats such as terrorism and nuclear proliferation. While not direct challenges to US primacy, both terrorism and nuclear proliferation can kill thousands.

The US Air Force has a commanding lead over the rest of the world, in terms of both numbers and capabilities. American ground forces have few peers, and are unmatched in their ability to deploy to anywhere in the world at an equally unmatched pace.

The only perceived challenge to the United States militarily comes from the People’s Republic of China.76 While the United States outspends all other nations in the world put together in terms of military spending, China follows as a close second, and has begun an extensive modernization program to boot.77 The Chinese military however, is several decades behind the United States in air power and nuclear capabilities.78 To compensate, China has begun the construction of access-denial technology, preventing the US from exercising its dominance in China’s sphere of influence.79 Chinese modernization efforts have a serious long-term advantage over the United States; access to rare earth metals, and a large concentration of rare earth chemists doing research.80 This advantage, coupled with the U.S. losing access to rare earth metals, will even the odds much quicker than policymakers had previously anticipated. 81

The largest example is US airpower. With every successive generation of military aircraft, the U.S. Air Force becomes more and more dependent on Rare Earth Metals.82 As planes get faster and faster, they have to get lighter and lighter, while adding weight from extra computers and other features on board.83 To lighten the weight of the plane, scandium is used to produce lightweight aluminum alloys for the body of the plane. Rare Earth metals are also useful in fighter jet engines, and fuel cells.84 For example, rare earths are required to producing miniaturized fins, and samarium is required to build the motors for the F-35 fighter jet.85 F-35 jets are the next generation fighter jet that works together to form the dual plane combination that cements U.S. dominance in air power over the Russian PAK FA.86

Rare earth shortages don’t just affect air power, also compromising the navigation system of Abrams Tanks, which need samarium cobalt magnets. The Abrams Tank is the primary offensive mechanized vehicle in the U.S. arsenal. The Aegis Spy 1 Radar also uses samarium.87 Many naval ships require neodymium. Hell Fire missiles, satellites, night vision goggles, avionics, and precision guided munitions all require rare earth metals. 88

American military superiority is based on technological advancement that outstrips the rest of the world. Command and control technology allows the U.S. to fight multiple wars at once and maintain readiness for other issues, as well as have overwhelming force against rising challengers. This technology helps the U.S. know who, where, and what is going to attack them, and respond effectively, regardless of the source of the threat.

Rare Earth Elements make this technological superiority possible.

To make matters worse, the defense industrial base is often a single market industry, dependent on government contracts for its business. If China tightens the export quotas further, major US defense contractors will be in trouble.89 Every sector of the defense industrial base is dependent on rare earth metals. Without rare earths, these contractors can’t build anything, which collapses the industry.90

Rare Earth shortages are actually already affecting our military, with shortages of lanthanum, cerium, europium and gadolinium happening in the status quo. This prevents us not only from building the next generation of high tech weaponry, but also from constructing more of the weapons and munitions that are needed in the status quo. As current weapon systems age and they can’t be replaced, the US primacy will be undermined. Of special concern is that U.S. domestic mining doesn’t produce “heavy” rare earth metals that are needed for many advanced components of military technologies. Given the nature of many military applications, substitutions aren’t possible. 91

#### Climate solutions rely on REMs.

**Arrobas et al 17** [(Daniele La Porta Arrobas is a senior mining specialist with the World Bank based in Washington DC and has degrees in Geoscience and Environmental Management, Kirsten Hund is a senior mining specialist with the Energy and Extractives Global Practice of the World Bank and holds a Master’s in IR from the University of Groningen in the Netherlands, Michael Stephen McCormick, Jagabanta Ningthoujam has an MA in international economics and international development from JHU and a BS in MechE from Natl University of Singapore, John Drexhage also works at the Intl Institute for Sustainable Development) “The Growing Role of Minerals and Metals for a Low Carbon Future,” World Bank, June 30, 2017, <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/207371500386458722/the-growing-role-of-minerals-and-metals-for-a-low-carbon-future>] TDI

* Full report - https://documents1.worldbank.org/curated/en/207371500386458722/pdf/117581-WP-P159838-PUBLIC-ClimateSmartMiningJuly.pdf

Climate and greenhouse gas (GHG) scenarios have typically paid scant attention to the metal implications necessary to realize a low/zero carbon future. The 2015 Paris Agreement on Climate Change indicates a global resolve to embark on development patterns that would significantly be less GHG intensive. One might assume that nonrenewable resource development and use will also need to decline in a carbon-constrained future. This report tests that assumption, identifies those commodities implicated in such a scenario and explores ramifications for relevant resource-rich developing countries. Using wind, solar, and energy storage batteries as proxies, the study examines which metals will likely rise in demand to be able to deliver on a carbon-constrained future. Metals which could see a growing market include aluminum (including its key constituent, bauxite), cobalt, copper, iron ore, lead, lithium, nickel, manganese, the platinum group of metals, rare earth metals including cadmium, molybdenum, neodymium, and indium—silver, steel, titanium and zinc. The report then maps production and reserve levels of relevant metals globally, focusing on implications for resource-rich developing countries. It concludes by identifying critical research gaps and suggestions for future work.

#### Extinction – tipping points, sea level rise, adaptability limit

Ng ’19 [Yew-Kwang; May 2019; Professor of Economics at Nanyang Technology University, Fellow of the Academy of Social Sciences in Australia and Member of the Advisory Board at the Global Priorities Institute at Oxford University, Ph.D. in Economics from Sydney University; Global Policy, “Keynote: Global Extinction and Animal Welfare: Two Priorities for Effective Altruism,” vol. 10, no. 2, p. 258-266]

Catastrophic climate change

Though by no means certain, CCC causing global extinction is possible due to interrelated factors of non‐linearity, cascading effects, positive feedbacks, multiplicative factors, critical thresholds and tipping points (e.g. Barnosky and Hadly, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0005); Belaia et al., [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0008); Buldyrev et al., [2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0016); Grainger, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0027); Hansen and Sato, [2012](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0029); IPCC [2014](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0031); Kareiva and Carranza, [2018](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0033); Osmond and Klausmeier, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0056); Rothman, [2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0066); Schuur et al., [2015](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0069); Sims and Finnoff, [2016](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0072); Van Aalst, [2006](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0079)).[7](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-note-1009_67)

A possibly imminent tipping point could be in the form of ‘an abrupt ice sheet collapse [that] could cause a rapid sea level rise’ (Baum et al., [2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0006), p. 399). There are many avenues for positive feedback in global warming, including:

* the replacement of an ice sea by a liquid ocean surface from melting reduces the reflection and increases the absorption of sunlight, leading to faster warming;
* the drying of forests from warming increases forest fires and the release of more carbon; and
* higher ocean temperatures may lead to the release of methane trapped under the ocean floor, producing runaway global warming.

Though there are also avenues for negative feedback, the scientific consensus is for an overall net positive feedback (Roe and Baker, [2007](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0065)). Thus, the Global Challenges Foundation ([2017](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0026), p. 25) concludes, ‘The world is currently completely unprepared to envisage, and even less deal with, the consequences of CCC’.

The threat of sea‐level rising from global warming is well known, but there are also other likely and more imminent threats to the survivability of mankind and other living things. For example, Sherwood and Huber ([2010](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0071)) emphasize the adaptability limit to climate change due to heat stress from high environmental wet‐bulb temperature. They show that ‘even modest global warming could … expose large fractions of the [world] population to unprecedented heat stress’ p. 9552 and that with substantial global warming, ‘the area of land rendered uninhabitable by heat stress would dwarf that affected by rising sea level’ p. 9555, making extinction much more likely and the relatively moderate damages estimated by most integrated assessment models unreliably low.

While imminent extinction is very unlikely and may not come for a long time even under business as usual, the main point is that we cannot rule it out. Annan and Hargreaves ([2011](https://onlinelibrary-wiley-com.proxy.lib.umich.edu/doi/full/10.1111/1758-5899.12647#gpol12647-bib-0004), pp. 434–435) may be right that there is ‘an upper 95 per cent probability limit for S [temperature increase] … to lie close to 4°C, and certainly well below 6°C’. However, probabilities of 5 per cent, 0.5 per cent, 0.05 per cent or even 0.005 per cent of excessive warming and the resulting extinction probabilities cannot be ruled out and are unacceptable. Even if there is only a 1 per cent probability that there is a time bomb in the airplane, you probably want to change your flight. Extinction of the whole world is more important to avoid by literally a trillion times.

#### Heg solves arms races, land grabs, rogue states, and great power war.

Brands 18 [Hal, Henry Kissinger Distinguished Professor at Johns Hopkins University's School of Advanced International Studies and a senior fellow at the Center for Strategic and Budgetary Assessments." American Grand Strategy in the Age of Trump." Page 129-133]

Since World War II, the United States has had a military second to none. Since the Cold War, America has committed to having overwhelming military primacy. The idea, as George W. Bush declared in 2002, that America must possess “strengths beyond challenge” has featured in every major U.S. strategy document for a quarter century; it has also been reflected in concrete terms.6

From the early 1990s, for example, the United States consistently accounted for around 35 to 45 percent of world defense spending and maintained peerless global power-projection capabilities.7 Perhaps more important, U.S. primacy was also unrivaled in key overseas strategic regions—Europe, East Asia, the Middle East. From thrashing Saddam Hussein’s million-man Iraqi military during Operation Desert Storm, to deploying—with impunity—two carrier strike groups off Taiwan during the China-Taiwan crisis of 1995– 96, Washington has been able to project military power superior to anything a regional rival could employ even on its own geopolitical doorstep.

This military dominance has constituted the hard-power backbone of an ambitious global strategy. After the Cold War, U.S. policymakers committed to averting a return to the unstable multipolarity of earlier eras, and to perpetuating the more favorable unipolar order. They committed to building on the successes of the postwar era by further advancing liberal political values and an open international economy, and to suppressing international scourges such as rogue states, nuclear proliferation, and catastrophic terrorism. And because they recognized that military force remained the ultima ratio regum, they understood the centrality of military preponderance.

Washington would need the military power necessary to underwrite worldwide alliance commitments. It would have to preserve substantial overmatch versus any potential great-power rival. It must be able to answer the sharpest challenges to the international system, such as Saddam’s invasion of Kuwait in 1990 or jihadist extremism after 9/11. Finally, because prevailing global norms generally reflect hard-power realities, America would need the superiority to assure that its own values remained ascendant. It was impolitic to say that U.S. strategy and the international order required “strengths beyond challenge,” but it was not at all inaccurate.

American primacy, moreover, was eminently affordable. At the height of the Cold War, the United States spent over 12 percent of GDP on defense. Since the mid-1990s, the number has usually been between 3 and 4 percent.8 In a historically favorable international environment, Washington could enjoy primacy—and its geopolitical fruits—on the cheap.

Yet U.S. strategy also heeded, at least until recently, the fact that there was a limit to how cheaply that primacy could be had. The American military did shrink significantly during the 1990s, but U.S. officials understood that if Washington cut back too far, its primacy would erode to a point where it ceased to deliver its geopolitical benefits. Alliances would lose credibility; the stability of key regions would be eroded; rivals would be emboldened; international crises would go unaddressed. American primacy was thus like a reasonably priced insurance policy. It required nontrivial expenditures, but protected against far costlier outcomes.9 Washington paid its insurance premiums for two decades after the Cold War. But more recently American primacy and strategic solvency have been imperiled.

THE DARKENING HORIZON For most of the post–Cold War era, the international system was— by historical standards—remarkably benign. Dangers existed, and as the terrorist attacks of September 11, 2001, demonstrated, they could manifest with horrific effect. But for two decades after the Soviet collapse, the world was characterized by remarkably low levels of great-power competition, high levels of security in key theaters such as Europe and East Asia, and the comparative weakness of those “rogue” actors—Iran, Iraq, North Korea, al-Qaeda—who most aggressively challenged American power. During the 1990s, some observers even spoke of a “strategic pause,” the idea being that the end of the Cold War had afforded the United States a respite from normal levels of geopolitical danger and competition. Now, however, the strategic horizon is darkening, due to four factors.

First, great-power military competition is back. The world’s two leading authoritarian powers—China and Russia—are seeking regional hegemony, contesting global norms such as nonaggression and freedom of navigation, and developing the military punch to underwrite these ambitions. Notwithstanding severe economic and demographic problems, Russia has conducted a major military modernization emphasizing nuclear weapons, high-end conventional capabilities, and rapid-deployment and special operations forces— and utilized many of these capabilities in conflicts in Ukraine and Syria.10 China, meanwhile, has carried out a buildup of historic proportions, with constant-dollar defense outlays rising from US$26 billion in 1995 to US$226 billion in 2016.11 Ominously, these expenditures have funded development of power-projection and antiaccess/area denial (A2/AD) tools necessary to threaten China’s neighbors and complicate U.S. intervention on their behalf. Washington has grown accustomed to having a generational military lead; Russian and Chinese modernization efforts are now creating a far more competitive environment.

### 1NC – DA

#### Space Commercialization drives Tech Innovation in the Status Quo – it provides a unique impetus.

Hampson 17 Joshua Hampson 1-25-2017 “The Future of Space Commercialization” <https://republicans-science.house.gov/sites/republicans.science.house.gov/files/documents/TheFutureofSpaceCommercializationFinal.pdf> (Security Studies Fellow at the Niskanen Center)//Elmer

The size of the space economy is far larger than many may think. In 2015 alone, the global market amounted to $323 billion. Commercial infrastructure and systems accounted for 76 percent of that 9 total, with satellite television the largest subsection at $95 billion. The global space launch market’s 10 11 share of that total came in at $6 billion dollars. It can be hard to disaggregate how space benefits 12 particular national economies, but in 2009 (the last available report), the Federal Aviation Administration (FAA) estimated that commercial space transportation and enabled industries generated $208.3 billion in economic activity in the United States alone. Space is not just about 13 satellite television and global transportation; while not commercial, GPS satellites also underpin personal navigation, such as smartphone GPS use, and timing data used for Internet coordination.14 Without that data, there could be problems for a range of Internet and cloud-based services.15 There is also room for growth. The FAA has noted that while the commercial launch sector has not grown dramatically in the last decade, there are indications that there is latent demand. This 16 demand may catalyze an increase in launches and growth of the wider space economy in the next decade. The Satellite Industry Association’s 2015 report highlighted that their section of the space economy outgrew both the American and global economies. The FAA anticipates that growth to 17 continue, with expectations that small payload launch will be a particular industry driver.18 In the future, emerging space industries may contribute even more the American economy. Space tourism and resource recovery—e.g., mining on planets, moons , and asteroids—in particular may become large parts of that industry. Of course, their viability rests on a range of factors, including costs, future regulation, international problems, and assumptions about technological development. However, there is increasing optimism in these areas of economic production. But the space economy is not just about what happens in orbit, or how that alters life on the ground. The growth of this economy can also contribute to new innovations across all walks of life. Technological Innovation Innovation is generally hard to predict; some new technologies seem to come out of nowhere and others only take off when paired with a new application. It is difficult to predict the future, but it is reasonable to expect that a growing space economy would open opportunities for technological and organizational innovation. In terms of technology, the difficult environment of outer space helps incentivize progress along the margins. Because each object launched into orbit costs a significant amount of money—at the moment between $27,000 and $43,000 per pound, though that will likely drop in the future —each 19 reduction in payload size saves money or means more can be launched. At the same time, the ability to fit more capability into a smaller satellite opens outer space to actors that previously were priced out of the market. This is one of the reasons why small, affordable satellites are increasingly pursued by companies or organizations that cannot afford to launch larger traditional satellites. These small 20 satellites also provide non-traditional launchers, such as engineering students or prototypers, the opportunity to learn about satellite production and test new technologies before working on a full-sized satellite. That expansion of developers, experimenters, and testers cannot but help increase innovation opportunities. Technological developments from outer space have been applied to terrestrial life since the earliest days of space exploration. The National Aeronautics and Space Administration (NASA) maintains a website that lists technologies that have spun off from such research projects. Lightweight 21 nanotubes, useful in protecting astronauts during space exploration, are now being tested for applications in emergency response gear and electrical insulation. The need for certainty about the resiliency of materials used in space led to the development of an analytics tool useful across a range of industries. Temper foam, the material used in memory-foam pillows, was developed for NASA for seat covers. As more companies pursue their own space goals, more innovations will likely come from the commercial sector. Outer space is not just a catalyst for technological development. Satellite constellations and their unique line-of-sight vantage point can provide new perspectives to old industries. Deploying satellites into low-Earth orbit, as Facebook wants to do, can connect large, previously-unreached swathes of 22 humanity to the Internet. Remote sensing technology could change how whole industries operate, such as crop monitoring, herd management, crisis response, and land evaluation, among others. 23 While satellites cannot provide all essential information for some of these industries, they can fill in some useful gaps and work as part of a wider system of tools. Space infrastructure, in helping to change how people connect and perceive Earth, could help spark innovations on the ground as well. These innovations, changes to global networks, and new opportunities could lead to wider economic growth.

#### Strong Innovation solves Extinction.

Matthews 18 Dylan Matthews 10-26-2018 “How to help people millions of years from now” <https://www.vox.com/future-perfect/2018/10/26/18023366/far-future-effective-altruism-existential-risk-doing-good> (Co-founder of Vox, citing Nick Beckstead @ Rutgers University)//Re-cut by Elmer

If you care about improving human lives, you should overwhelmingly care about those quadrillions of lives rather than the comparatively small number of people alive today. The 7.6 billion people now living, after all, amount to less than 0.003 percent of the population that will live in the future. It’s reasonable to suggest that those quadrillions of future people have, accordingly, hundreds of thousands of times more moral weight than those of us living here today do. That’s the basic argument behind Nick Beckstead’s 2013 Rutgers philosophy dissertation, “On the overwhelming importance of shaping the far future.” It’s a glorious mindfuck of a thesis, not least because Beckstead shows very convincingly that this is a conclusion any plausible moral view would reach. It’s not just something that weird utilitarians have to deal with. And Beckstead, to his considerable credit, walks the walk on this. He works at the Open Philanthropy Project on grants relating to the far future and runs a charitable fund for donors who want to prioritize the far future. And arguments from him and others have turned “long-termism” into a very vibrant, important strand of the effective altruism community. But what does prioritizing the far future even mean? The most literal thing it could mean is preventing human extinction, to ensure that the species persists as long as possible. For the long-term-focused effective altruists I know, that typically means identifying concrete threats to humanity’s continued existence — like unfriendly artificial intelligence, or a pandemic, or global warming/out of control geoengineering — and engaging in activities to prevent that specific eventuality. But in a set of slides he made in 2013, Beckstead makes a compelling case that while that’s certainly part of what caring about the far future entails, approaches that address specific threats to humanity (which he calls “targeted” approaches to the far future) have to complement “broad” approaches, where instead of trying to predict what’s going to kill us all, you just generally try to keep civilization running as best it can, so that it is, as a whole, well-equipped to deal with potential extinction events in the future, not just in 2030 or 2040 but in 3500 or 95000 or even 37 million. In other words, caring about the far future doesn’t mean just paying attention to low-probability risks of total annihilation; it also means acting on pressing needs now. For example: We’re going to be better prepared to prevent extinction from AI or a supervirus or global warming if society as a whole makes a lot of scientific progress. And a significant bottleneck there is that the vast majority of humanity doesn’t get high-enough-quality education to engage in scientific research, if they want to, which reduces the **odds that we have enough trained scientists to come up with the breakthroughs** we need as a civilization to survive and thrive. So maybe one of the best things we can do for the far future is to improve school systems — here and now — to harness the group economist Raj Chetty calls “lost Einsteins” (potential innovators who are thwarted by poverty and inequality in rich countries) and, more importantly, the hundreds of millions of kids in developing countries dealing with even worse education systems than those in depressed communities in the rich world. What if living ethically for the far future means living ethically now? Beckstead mentions some other broad, or very broad, ideas (these are all his descriptions): Help make computers faster so that people everywhere can work more efficiently Change intellectual property law so that technological innovation can happen more quickly Advocate for open borders so that people from poorly governed countries can move to better-governed countries and be more productive Meta-research: improve incentives and norms in academic work to better advance human knowledge Improve education Advocate for political party X to make future people have values more like political party X ”If you look at these areas (economic growth and technological progress, access to information, individual capability, social coordination, motives) a lot of everyday good works contribute,” Beckstead writes. “An implication of this is that a lot of everyday good works are good from a broad perspective, even though hardly anyone thinks explicitly in terms of far future standards.” Look at those examples again: It’s just a list of what normal altruistically motivated people, not effective altruism folks, generally do. Charities in the US love talking about the lost opportunities for innovation that poverty creates. Lots of smart people who want to make a difference become scientists, or try to work as teachers or on improving education policy, and lord knows there are plenty of people who become political party operatives out of a conviction that the moral consequences of the party’s platform are good. All of which is to say: Maybe effective altruists aren’t that special, or at least maybe we don’t have access to that many specific and weird conclusions about how best to help the world. If the far future is what matters, and generally trying to make the world work better is among the best ways to help the far future, then effective altruism just becomes plain ol’ do-goodery.

### Framing

#### Pleasure and pain are the starting point for moral reasoning—they’re our most baseline desires and the only things that explain the intrinsic value of objects or actions

Moen 16, Ole Martin (PhD, Research Fellow in Philosophy at University of Oslo). "An Argument for Hedonism." Journal of Value Inquiry 50.2 (2016): 267.

Let us start by observing, empirically, that a widely shared judgment about intrinsic value and disvalue is that pleasure is intrinsically valuable and pain is intrinsically disvaluable. On virtually any proposed list of intrinsic values and disvalues (we will look at some of them below), pleasure is included among the intrinsic values and pain among the intrinsic disvalues. This inclusion makes intuitive sense, moreover, for there is something undeniably good about the way pleasure feels and something undeniably bad about the way pain feels, and neither the goodness of pleasure nor the badness of pain seems to be exhausted by the further effects that these experiences might have. “Pleasure” and “pain” are here understood inclusively, as encompassing anything hedonically positive and anything hedonically negative. 2 The special value statuses of pleasure and pain are manifested in how we treat these experiences in our everyday reasoning about values. If you tell me that you are heading for the convenience store, I might ask: “What for?” This is a reasonable question, for when you go to the convenience store you usually do so, not merely for the sake of going to the convenience store, but for the sake of achieving something further that you deem to be valuable. You might answer, for example: “To buy soda.” This answer makes sense, for soda is a nice thing and you can get it at the convenience store. I might further inquire, however: “What is buying the soda good for?” This further question can also be a reasonable one, for it need not be obvious why you want the soda. You might answer: “Well, I want it for the pleasure of drinking it.” If I then proceed by asking “But what is the pleasure of drinking the soda good for?” the discussion is likely to reach an awkward end. The reason is that the pleasure is not good for anything further; it is simply that for which going to the convenience store and buying the soda is good. 3 As Aristotle observes: “We never ask [a man] what his end is in being pleased, because we assume that pleasure is choice worthy in itself.”4 Presumably, a similar story can be told in the case of pains, for if someone says “This is painful!” we never respond by asking: “And why is that a problem?” We take for granted that if something is painful, we have a sufficient explanation of why it is bad. If we are onto something in our everyday reasoning about values, it seems that pleasure and pain are both places where we reach the end of the line in matters of value. Although pleasure and pain thus seem to be good candidates for intrinsic value and disvalue, several objections have been raised against this suggestion: (1) that pleasure and pain have instrumental but not intrinsic value/disvalue; (2) that pleasure and pain gain their value/disvalue derivatively, in virtue of satisfying/frustrating our desires; (3) that there is a subset of pleasures that are not intrinsically valuable (so-called “evil pleasures”) and a subset of pains that are not intrinsically disvaluable (so-called “noble pains”), and (4) that pain asymbolia, masochism, and practices such as wiggling a loose tooth render it implausible that pain is intrinsically disvaluable. I shall argue that these objections fail. Though it is, of course, an open question whether other objections to P1 might be more successful, I shall assume that if (1)–(4) fail, we are justified in believing that P1 is true itself a paragon of freedom—there will always be some agents able to interfere substantially with one’s choices. The effective level of protection one enjoys, and hence one’s actual degree of freedom, will vary according to multiple factors: how powerful one is, how powerful individuals in one’s vicinity are, how frequent police patrols are, and so on. Now, we saw above that what makes a slave unfree on Pettit’s view is the fact that his master has the power to interfere arbitrarily with his choices; in other words, what makes the slave unfree is the power relation that obtains between his master and him. The difﬁculty is that, in light of the facts I just mentioned, there is no reason to think that this power relation will be unique. A similar relation could obtain between the master and someone other than the slave: absent perfect state control, the master may very well have enough power to interfere in the lives of countless individuals. Yet it would be wrong to infer that these individuals lack freedom in the way the slave does; if they lack anything, it seems to be security. A problematic power relation can also obtain between the slave and someone other than the master, since there may be citizens who are more powerful than the master and who can therefore interfere with the slave’s choices at their discretion. Once again, it would be wrong to infer that these individuals make the slave unfree in the same way that the master does. Something appears to be missing from Pettit’s view. If I live in a particularly nasty part of town, then it may turn out that, when all the relevant factors are taken into account, I am just as vulnerable to outside interference as are the slaves in the royal palace, yet it does not follow that our conditions are equivalent from the point of view of freedom. As a matter of fact, we may be equally vulnerable to outside interference, but as a matter of right, our standings could not be more different. I have legal recourse against anyone who interferes with my freedom; the recourse may not be very effective—presumably it is not, if my overall vulnerability to outside interference is comparable to that of a slave— but I still have full legal standing.68 By contrast, the slave lacks legal recourse against the interventions of one speciﬁc individual: his master. It is that fact, on a Kantian view—a fact about the legal relation in which a slave stands to his master—that sets slaves apart from freemen. The point may appear trivial, but it does get something right: whereas one cannot identify a power relation that obtains uniquely between a slave and his master, the legal relation between them is undeniably unique. A master’s right to interfere with respect to his slave does not extend to freemen, regardless of how vulnerable they might be as a matter of fact, and citizens other than the master do not have the right to order the slave around, regardless of how powerful they might be. This suggests that Kant is correct in thinking that the ideal of freedom is essentially linked to a person’s having full legal standing. More speciﬁcally, he is correct in holding that the importance of rights is not exhausted by their contribution to the level of protection that an individual enjoys, as it must be on an instrumental view like Pettit’s. Although it does matter that rights be enforced with reasonable effectiveness, the sheer fact that one has adequate legal rights is essential to one’s standing as a free citizen. In this respect, Kant stays faithful to the idea that freedom is primarily a matter of standing—a standing that the freeman has and that the slave lacks. Pettit himself frequently insists on the idea, but he fails to do it justice when he claims that freedom is simply a matter of being adequately (and reliably) shielded against the strength of others. As Kant recognizes, the standing of a free citizen is a more complex matter than that. One could perhaps worry that the idea of legal standing is something of a red herring here—that it must ultimately be reducible to a complex network of power relations and, hence, that the position I attribute to Kant differs only nominally from Pettit’s. That seems to me doubtful. Viewing legal standing as essential to freedom makes sense only if our conception of the former includes conceptions of what constitutes a fully adequate scheme of legal rights, appropriate legal recourse, justiﬁed punishment, and so on. Only if one believes that these notions all boil down to power relations will Kant’s position appear similar to Pettit’s. On any other view—and certainly that includes most views recently defended by philosophers—the notion of legal standing will outstrip the power relations that ground Pettit’s theory.

#### That justifies util – we must aggregate in order to determine how behaviors will be conducted based on what is most pleasurable. Anything else is arbitrary and always allows for exclusions, but aggregation solves because it allows us to determine what behaviors are most likely given relative evaluations of pleasure and pain.

#### Existential threats independently outweigh – all life has infinite value and extinction eliminates the possibility for future generations

GPP 17 (Global Priorities Project, Future of Humanity Institute at the University of Oxford, Ministry for Foreign Affairs of Finland, “Existential Risk: Diplomacy and Governance,” Global Priorities Project, 2017, <https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf>,

1.2. THE ETHICS OF EXISTENTIAL RISK In his book Reasons and Persons, Oxford philosopher Derek Parfit advanced an influential argument about the importance of avoiding extinction: I believe that if we destroy mankind, as we now can, this outcome will be much worse than most people think. Compare three outcomes: (1) Peace. (2) A nuclear war that kills 99% of the world’s existing population. (3) A nuclear war that kills 100%. (2) would be worse than (1), and (3) would be worse than (2). Which is the greater of these two differences? Most people believe that the greater difference is between (1) and (2). I believe that the difference between (2) and (3) is very much greater. ... The Earth will remain habitable for at least another billion years. Civilization began only a few thousand years ago. If we do not destroy mankind, these few thousand years may be only a tiny fraction of the whole of civilized human history. The difference between (2) and (3) may thus be the difference between this tiny fraction and all of the rest of this history. If we compare this possible history to a day, what has occurred so far is only a fraction of a second.65 In this argument, it seems that Parfit is assuming that the survivors of a nuclear war that kills 99% of the population would eventually be able to recover civilisation without long-term effect. As we have seen, this may not be a safe assumption – but for the purposes of this thought experiment, the point stands. What makes existential catastrophes especially bad is that they would “destroy the future,” as another Oxford philosopher, Nick Bostrom, puts it.66 This future could potentially be extremely long and full of flourishing, and would therefore have extremely large value. In standard risk analysis, when working out how to respond to risk, we work out the expected value of risk reduction, by weighing the probability that an action will prevent an adverse event against the severity of the event. Because the value of preventing existential catastrophe is so vast, even a tiny probability of prevention has huge expected value.67 Of course, there is persisting reasonable disagreement about ethics and there are a number of ways one might resist this conclusion.68 Therefore, it would be unjustified to be overconfident in Parfit and Bostrom’s argument. In some areas, government policy does give significant weight to future generations. For example, in assessing the risks of nuclear waste storage, governments have considered timeframes of thousands, hundreds of thousands, and even a million years.69 Justifications for this policy usually appeal to principles of intergenerational equity according to which future generations ought to get as much protection as current generations.70 Similarly, widely accepted norms of sustainable development require development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs.71 However, when it comes to existential risk, it would seem that we fail to live up to principles of intergenerational equity. Existential catastrophe would not only give future generations less than the current generations; it would give them nothing. Indeed, reducing existential risk plausibly has a quite low cost for us in comparison with the huge expected value it has for future generations. In spite of this, relatively little is done to reduce existential risk. Unless we give up on norms of intergenerational equity, they give us a strong case for significantly increasing our efforts to reduce existential risks. 1.3. WHY EXISTENTIAL RISKS MAY BE SYSTEMATICALLY UNDERINVESTED IN, AND THE ROLE OF THE INTERNATIONAL COMMUNITY In spite of the importance of existential risk reduction, it probably receives less attention than is warranted. As a result, concerted international cooperation is required if we are to receive adequate protection from existential risks. 1.3.1. Why existential risks are likely to be underinvested in There are several reasons why existential risk reduction is likely to be underinvested in. Firstly, it is a global public good. Economic theory predicts that such goods tend to be underprovided. The benefits of existential risk reduction are widely and indivisibly dispersed around the globe from the countries responsible for taking action. Consequently, a country which reduces existential risk gains only a small portion of the benefits but bears the full brunt of the costs. Countries thus have strong incentives to free ride, receiving the benefits of risk reduction without contributing. As a result, too few do what is in the common interest. Secondly, as already suggested above, existential risk reduction is an intergenerational public good: most of the benefits are enjoyed by future generations who have no say in the political process. For these goods, the problem is temporal free riding: the current generation enjoys the benefits of inaction while future generations bear the costs. Thirdly, many existential risks, such as machine superintelligence, engineered pandemics, and solar geoengineering, pose an unprecedented and uncertain future threat. Consequently, it is hard to develop a satisfactory governance regime for them: there are few existing governance instruments which can be applied to these risks, and it is unclear what shape new instruments should take. In this way, our position with regard to these emerging risks is comparable to the one we faced when nuclear weapons first became available. Cognitive biases also lead people to underestimate existential risks. Since there have not been any catastrophes of this magnitude, these risks are not salient to politicians and the public.72 This is an example of the misapplication of the availability heuristic, a mental shortcut which assumes that something is important only if it can be readily recalled. Another cognitive bias affecting perceptions of existential risk is scope neglect. In a seminal 1992 study, three groups were asked how much they would be willing to pay to save 2,000, 20,000 or 200,000 birds from drowning in uncovered oil ponds. The groups answered $80, $78, and $88, respectively.73 In this case, the size of the benefits had little effect on the scale of the preferred response. People become numbed to the effect of saving lives when the numbers get too large. 74 Scope neglect is a particularly acute problem for existential risk because the numbers at stake are so large. Due to scope neglect, decision-makers are prone to treat existential risks in a similar way to problems which are less severe by many orders of magnitude. A wide range of other cognitive biases are likely to affect the evaluation of existential risks.75

# Case

#### Markets are good – they distribute goods and are responsible for a massive improvement in material quality of life for people around the world.

Cooper 16 – (2016, Mark, “Energy Justice in Theory and Practice: Building a Pragmatic, Progressive Road Map,” T. Van de Graaf et al. (eds.), The Palgrave Handbook of the International

Political Economy of Energy, pp. 687-92)

The Immense Leap in Material Well-Being Global Energy Justice provides important data on several key energy-intensive activities that deeply affect daily life (heat, light, power and transportation). In Fig. 28.1 , I augment that data with measures on population, income and total energy consumption, as well as technological change and developments in the state. Figure 28.1 identifies rates of growth in key activities that define the material conditions in which people live. I use a 100-year view to calculate the rate of improvement, which is consistent with eff orts to analyze distributive justice. *\*\* Fig. 28.1 Indicators of progress in human material conditions ( Sources : Based on data from: Benjamin, K. and Michael H. Dworkin, Global Energy Justice (Cambridge University Press, 2014, pp. 48, 312), heat, light transportation, power; Douglas North, Understanding the Process of Economic Change (Princeton, Princeton University Press, 2005), p. 89 US Bureau of the Census, https://www.census.gov/ populaton/international/data/worldpop/table\_history.php , UN 1999 where available, average of lower and upper summary elsewhere. Wikipedia for 2000, https://en.wikipedia.org/wiki/World\_population\_estimates ; J. Bradford De Long, Estimates of World GDP, One Million BC–Present, Standard Chartered, Technology: Reshaping the Global Economy, January 19, 2015, p. 11, technologies. https:// en.wikipedia.org/wiki/Westphalian\_sovereignty )*

Lighting, heating, power and transportation are energy-intensive activities that receive a great deal of attention in the discussion of energy poverty and justice. Light, heat and power are central to defining the standard of living and, hence, the energy justice analysis. The direct link between energy consumption and income is also central to that discussion. Starting with the emergence of capitalism and accelerating in the industrial era, these four services exhibited a dramatic decline in cost, which made them affordable for an ever increasing number of people. I include three measures of the overall outcome of the economic development process—population growth, output per capita and energy consumption per capita. North ( 2005 , p. 89) points to population for an obvious reason: Statistical data … can get us part way in describing the magnitude of changes in the landscape. They provide dramatic evidence of the revolutionary changes in the human condition. Man’s subjugation of the uncertainties related to the physical environment is most clearly manifested in the explosive increases in population since the beginning of the modern age in the eighteenth century …. [T]his dramatic change along with major development in knowledge, technological progress, and scientifi c breakthroughs that contributed to this explosive development. The close correlation between GDP per capita and population is clear. GDP per capita and its growth have been the primary focal point of the analysis of economic growth and development for quite some time. The close correlation between GDP per capita and energy consumption per capita has also been a focal point of analysis. 12 The graph also identifi es several technologies that are widely seen as ushering in fundamental shifts in economic activity. An important and obvious point to be made is that these involve power and transportation technologies. Three of the recent examples involve energy—steam, internal combustion engine and electricity. Substituting mechanical power for human and animal power constitutes a major leap. The shift to electricity, considered a General Purpose Technology (Jovanovic and Rousseau 2005 ), 13 was one of the key factors in the second industrial revolution. Finally, at the bottom, the graph shows key developments in the structure of policy making. The nation-state was a key development that enabled the process of economic growth to gain traction (Acemoglu and Robinson 2012 , Figure 5). The Westphalian state was a key development. Eff orts to organize relations between states were the subject of a stream of treaties, but the graph shows the major eff orts to organize multilateral relations in the twentieth century. It is important to keep in mind that the graph is truncated. Prior to the year 1400, the rate of growth in the factors that affect material well-being was virtually nil. The data underscore the immense progress made in the material condition of society in the past three centuries. The dramatic change in the rates of progress is coincident with the emergence of capitalism and, in particular, the industrial revolution. The key message for the purpose of this analysis is strikingly clear. If we accept the proposition that human civilization dates back about 12 millennia, then the capitalist era is about 4% of human history. The industrial era covers the second half of that period. Measured by population, per capita income, heat, power, transportation, lighting, about 90 % of human progress has taken place in the most recent 2 % of human history, the very short period of capitalist industrialization. 14 The Virtuous Cycle of Progress and the Potential for Justice The progressive capitalist frame for a theory of justice launches from this dramatic change in the human condition. Obviously, it postdates much of the thinking of the ancient philosophers and early modern (preindustrial) political theorists who naturally make up a large part of the intellectual and cultural heritage of the Western concept of justice, as discussed at length the Global Energy Justice . There has been a dramatic transformation of the terrain of justice in three ways. • The capitalist industrial revolution has not only produced a dramatic improvement in the human condition, it has also created the possibility/ hope/expectation that there will be a massive and continuing improvement in the material well-being of people. Mankind has been freed from endless poverty and expects continuous economic growth and improvement in material conditions. • The improvement in material well-being comes with (and is in part dependent on) an increasing interdependence of economic activity (a refined division of labor and globalization). • Increasing wealth and improvements in communications (which are made possible by changes in energy technology, i.e. electrifi cation) have allowed more and more people to engage and participate more directly and forcefully in self-governance. In the capitalist industrial era we no longer have to treat human history as a kind of zero-sum, depleting resource story. The current generation should not be chastised for overconsuming scarce resources as long as it produces the means to maintain and improve the prospects of future generations. For the past quarter of a millennium, the groundwork for a much higher standard of living has been laid by each successive generation. Perez ( 2002 ) argues that capitalist development needs to be progressive in the sense I use the term. Technology is the fuel of the capitalist engine (Perez 2002 , p. 155). The potential for production and productivity grow this considerable. What is needed for its realization is a new space for the unhindered expansion of markets, favoring economics of scale and fostering a new wave of investment. this essentially means that adequate regulation … has to be established and an institutional framework favoring the real economy over the paper economy needs to be put in place … So the rhythm of potential grow this modulated by the qualitative dynamics of eff ective demand (Perez 2002 , pp. 114–116). Since market saturation is one of the main limits encountered in deploying the growth potential of a technology revolution, ensuring consistent extension of markets is the way to facilitate the pursuit of those goals. Consequently, it is progressive distribution and worldwide advances in development that can best guarantee a continued expansion of demand (Perez 2002 , p. 124). The impact of progressive capitalism on the terrain of justice involves more than simple progress. It also reflects the structure and process by which capitalism creates progress. Two key processes are involved. A discussion of these broad issues is beyond the scope of this chapter and has been off ered elsewhere (Cooper 2015 ). Here I emphasize two points that are central to the discussion of energy justice. • First, the explanation asserts that capitalism has given birth to recursive feedback loops, virtuous circles and cycles, of creative destruction and construction that creates a spiral of progress. • Second, the division of labor advances relentlessly, which ultimately increases human capital and promotes democratic equality. The stark contrast between the twenty-fi rst-century digital mode of production that is emerging and the twentieth-century mode of production described by Perez ( 2004 , 2009 ) underscores this process in several ways. First, the mass market production of the twentieth century was very much driven by fossil fuel consumption. The digital mode of production is much more dependent on electricity. Second, technologies are emerging to power more and more activity with electricity. Third, the heterogeneity of products creates niche markets. Fourth, the new division of labor is much more global and complex, shifting a great deal of activity and autonomy to the edge of the networks. The virtuous cycles of economic progress are interconnected in the sense that they tend to produce the key ingredients to solve the next great challenge that faces the economic system. Perez builds this into her model of capitalism by linking Schumpeter’s concept of creative destruction to the equally powerful process of creative construction. The result is a spiral of development. While analysis of this process is also beyond the scope of this chapter, one aspect of the current phase of development is critical to the discussion of energy justice. Industrial revolutions produce the ingredients necessary to solve the challenges that they faced. ^his is certainly true of the third industrial revolution in the energy sector, the electricity sector in particular. Dynamic technological development has produced the tools for the transformation of the energy sector that can solve the problem of climate change, while dealing with the challenge of energy justice. The central station model of base-load facilities combined with high cost peaking power and massive amounts of pollution, including greenhouse gas emissions, has been undercut by dramatically declining cost for distributed renewables and storage. The Information and Communications Technologies revolution has now made it possible to integrate and manage demand and supply rather than build central station, fossil-fuel-based powered facilities that passively follow load. Economic analyses of the cost of addressing energy justice that were off ered as it became a topic of increasing attention a decade ago are obsolete as a result of dramatic innovation and competition (Cooper 2014b ). An electricity sector centered on smaller scale, more flexible resources should facilitate and lower the cost of addressing both energy poverty and climate change. this technological revolution not only delivers aff ordable electricity, but it also does so in a manner that utilizes local resources and fosters local autonomy. As has always been the case, however, there is a struggle between the incumbent and the new entrant technologies over the speed and ultimate confi guration of the new system and which values will be expressed by the system. In short, the energy sector, in general, and the electricity sector, in particular, are at the “turning point” (Perez 2002 ) or “critical juncture” (Robinson and Acemoglu 2012 )\ of the “quarter-life crisis of the digital mode of production” (Cooper 2013b ). Political economy is about driving the economy in the right direction with policy. While the outcome is uncertain, the technological progress suggests that prospects are good for a successful deployment of the third industrial revolution. 3 A Broad Frame for Justice Building on the intense discussion of energy justice presented in the two books noted in the introduction, the theory of distributive justice off ered below is intended to provide a framework that makes the inclusion of progressive values and the policies that address energy poverty more compelling in the process of institutional recomposition that is taking place. Needless to say, this was the purpose of the Encyclical on climate change. The analysis makes several basic points that lead to an important conclusion— distributive justice is not an afterthought to a dynamic economic system, it is an indispensable, core ingredient of success: • Markets have a critical role as the driver of progress. • The state plays an equally critical role with policies to guide the economy toward a stable growth trajectory and in a progressive direction by placing constraints on property and the accumulation of power. • Egalitarian relationships are consistent with the need to advance the division of labor. • Autonomy and choice for individuals plays a critical role in promoting effi ciency and democracy. • The convergence and synergy between an inclusive market and an inclusive state is necessary for progress to continue.

#### Capitalism is good and solves every ecological impact

Marco Rosaire Rossi 15, writer and activist in Olympia, Washington. He is the author of the book, A Politics for the 99%. His previous works have been published in Z Magazine, the Peace and Conflict Monitor, Counterpunch.org, New Compass, and the Humanist magazine., 9-29-2015, "Ecological Modernity versus Capitalist Modernity," New Compass, http://new-compass.net/articles/ecological-modernity-versus-capitalist-modernity

In this provocative essay, Marco Rosaire Rossi challenges Murray Bookchin's fundamental claim that capitalism's lifeblood is unfettered growth. Contrary to radical wisdom, Rossi writes, if we are to build an ecological society we will need more growth, not less. De-growth in a time of austerity is morally reprehensible and material prosperity must be increased; the Industrial Revolution must be rapidly advanced. Without this progress, humanity will only remain at the threshold of an ecological society and no more. It has become almost cliché to remark that human civilization is facing an existential crisis unparalleled in history. It is almost cliché, but not quite, because to refer to it as cliché does a disservice to the extensiveness of the problem; and yet, calling it a cliché somehow speaks to the banality of the apocalyptic cries. From across the political spectrum, there is a sense that “The End Is Nigh,” and after “Nigh” has lasted many years—for some, even decades—a sense of apathetic dread sinks in. The world is going to die, it has been dying for years, and apparently there is nothing anyone can do about it. This acedia of apathetic dread is based both in reality and in ideology. The reality is that the planet is experiencing a major threat in the form of global warming. Our global economic system has put itself in violent opposition to any ecological parameters. The major disruptions of global warming still loom over the horizon; yet, their immanence means that we need to consider the consequences of increasing humanity’s material prosperity. Billions of people need to be pulled out of poverty, but if doing so ends up sending the planet off a cliff then it makes little sense to do just that. At the same time, billions of people are living in abject poverty. Chilling ourselves to their plight out of ecological concern requires a dimming of our sense of humanity. In halting material prosperity we may save the planet but in the process we kill our humanity. Development or Sustainability? The ideological source of this apathetic dread is the Morton’s Fork between material security and ecological sustainability to begin with. Ideologically, there appears to be an inability to imagine a society that is materially secure, even prosperous, and ecologically sustainable. Finding a loving marriage between technology and ecology is at the center of many of our ecological and social problems. New technologies must allow ecosystems to become more diverse and stable, and that environmental diversity and stability must be used in such a way that it allows humans the time and leisure to engage in even more sophisticated technological pursuits. What environmentalists have failed to cultivate when it comes to nature is the same sense of progress that seems instinctual to a modernist understanding of technology, thus their opposition. Since the birth of the environmental movement the entire approach to the natural world has been one of conservation. A pristine, romantic, and often spiritual approach to the natural world has meant that environmentalists have adopted a savior psychology to their activism. Nature, in its innocence, cannot be polluted with civilization. It must be saved from the inherent capriciousness of humanity through prohibitions and austerity. This one-sided approach to environmentalism not only ignores the vitality and resilience of the natural world, but also establishes an “otherness” between humanity and nature that reinforces humanity’s alienation to the natural world. In the hopes of bringing the “arrogance of man” down to the level of nature, environmentalists have duplicated the very dichotomy that they oppose but with one important twist: Nature is supposed to reign over society, and it should reign even if the supremacy of nature means that certain people in society must be made desolate. Ecology should not, and cannot, be a synonym for misanthropy. Civilization does have the potential to destroy nature, but it also has the potential to restore and complement it. The modern world has endowed us with both unprecedented destructive capacities and liberating potentialities. Moreover, modern technology has shown us the means to not only liberate humans from the harsh conditions of the natural world, but also to liberate the natural world from a harsh and myopic civilization. Before the use of coal fed the Industrial Revolution, the main source of energy in the world was wood. Wood is an extraordinarily inefficient source of energy that releases a lot of carbon into the atmosphere. If the European need for wood had not transferred to coal—and there was no reason to suspect that it would have slowed down—then all of Europe would have been deforested, and we would still be dealing with the problem of climate change. The fossil fuel economy saved humanity from this travesty. Fossil fuels, though problematic in our own time, are far denser forms of energy. They do not require a massive project of deforestation to extract. The movement beyond fossil fuels continues along the same lines as the movement beyond wood, that is, the search for denser and more efficient forms of energy. This project can only come about through the advancement of technological and scientific progress, a furthering of the Industrial Revolution, not its retraction. Similarly, our economy is potentially going through a subtle process of dematerialization that is forcing a reassessment of the relationship between industrial and postindustrial societies. We are able to generate more wealth, with less stuff, more efficiently. In the developing world, many countries are still experiencing materializing economies, but—as the developed nations dematerializes—there appears to be a point when economic development reaches past material security and into intellectual and cultural achievements. Consumerism is to be feared when it becomes a substitute for social creativity. Consumption, in contrast, is not just metabolically necessary, but socially desirable. The sociability of a farmers’ market or craft fair indicates that there is an innate participatory aspect to consumption that goes beyond avaricious conceptions of humanity as automaton pigs with bottomless stomachs. People consume the most when they are in groups, and yet our consumption is the least material when it is the most communal. The greatest ecological transformation that the modern world has brought is the migration of people from villages to cities and the bifurcation of rural and urban life. From an ecological perspective, cities, with their geographical density and tightly interwoven economies, create an ideal situation for harmonizing the social and the natural world. Cities enable rich cultural lives and they do so at a minimum of ecological consequences

. Stacking homes in apartment buildings and concentrating human activity within a walkable distance requires an intense alteration of an ecological landscape, but that landscape is extremely small, and uses a fraction of the resources used by sprawling suburbs. In turn, the movement to the cities has been matched and encouraged by startling technological innovations in agriculture. The sustainable intensification that has happened through the creation of the modern city is also happening on the modern farm. Food production has reached heights undreamed of a hundred years ago, and it has done so with a fraction of the labor power and a slowing down of the need for more land. The ability to produce more with less has meant that a feral nature has been able to bounce back. The social and the natural world are cobbling together a lasting peace within a strategic division between urban, rural, and feral landscapes. These important trends give hope to reconciling technology and ecology but they are not inevitable. Apathetic dread should not be replaced by euphoric naiveté. These trends have only developed through an effort to modernize civilization. This includes pursuing a secular and scientific worldview that values innovation and technological achievements, but it also includes expanding democratic governance, ensuring social and economic equality, and encouraging cosmopolitan perspectives. Dealing with our current ecological crisis means that we must recognize that our inability to move from fossil fuels to other sources of energy is rooted in stubborn institutional arrangements that do not respond more to the imperatives hierarchical management and market competition than human and ecological needs do. Capitalism: No friend of growth Global warming is a market failure of potentially catastrophic proportions. The carbon released into the earth’s atmosphere is externalized from the transactions within our economy, and this externalization means that the cost of this pollution is placed on future generations and the environment. The pursuit of developing nations to have a living standard on par with that of developed nations is thought to be at the heart of this market failure, but that is a misplaced analysis. Free market libertarians and Luddite eco-socialists alike have thought that economic development was a byproduct of capitalism. This assumption ignores the reality that the areas of the world that have been forced to deal with the fiercest free-market conditions are the areas of the world that have been the most chronically underdeveloped. Developing nations have only been able to shake off the yoke of imperialism through establishing planned economies, industrial policies, and social safety nets that prevent the self-destructive tendencies of markets. For decades, pioneering social ecologists such as Murray Bookchin warned environmentalists and political radicals of a coming ecological collapse initiated by capitalist modes of production. For Bookchin it was capitalism’s “grow-or-die” ethos that inexorably linked the market economy to the simplification and eventual destruction of complex life, including humanity. Bookchin got the problem right, but the causal mechanism wrong. Indeed, capitalist modes of production are at the heart of much of our current ecological problems, but it is not because capitalism inherently promotes economic growth. If there is one major lesson that should be drawn from post-World War II economic history, especially from our own globalized neoliberal era, it is that the economic growth unleashed by unfettered free markets is quite limited. Free market capitalism does not seem to operate along the lines of “grow-or-die,” but instead along the lines of “grow-then-die,” meaning that macroeconomic growth under capitalism is hindered by the same anarchic market forces that lead to its initial paroxysm. And it is the periods of economic destruction—where there are continual recessions and extreme social volatility—that pose the greatest threats to our ecology. It is in those periods when it is the most difficult for people to understand that the fate of humanity is intimately tied to the fate of the natural world, and when people are least inclined to use additional resources to explore newer, more environmentally sustainable technologies. Capitalism is at the heart of our ecological crisis not because it develops economies, but for the very fact that it does the opposite. Joseph Schumpeter’s plucking of the term “creative destruction” from Marxists has both enlightened and obfuscated our conceptual understanding of economic development and its relation to technology. For Schumpeter, largely drawing on Marxist writings on capitalism, creative destruction referred to periods of economic development where an old world was destroyed to make way for the prosperity of a new one. His meaning is more akin to the Hegelian notion Aufhebung, a concept that is always underneath Marx’s work, than to the mechanistic repetition of collapse and regeneration of the business cycle that free-market apologists have emphasized. The exogenous factor for these economic upheavals was the introduction of new technologies, ones that were able to internalize externalities, create efficiencies, and thus undermine all previous forms of competition, even monopolistic forms. Schumpeter was correct in recognizing the inherent developmental nature within economies and the important role of technological progress as in usurping a given economic order, but his willingness to attribute this progress to capitalists, specifically large corporations and monopolistic entities, clouds the actual nature of this economic development. The increasing complexity of economic transactions and technological innovation demand that those periods of creative destruction become less driven by lone inventors and more the result of collective institutions and mass social cooperation. The belief that capitalism, as an ethical framework, can save itself by its own innovation ignores the stark reality that to produce such innovation in complex modern societies capitalist ethics must be violated, sometimes violently so. Marx and Engels were correct: there is a disjunction between modes of production that require increasingly cooperative institutions and an economic system that promotes an extreme individualistic ethos above all else. But, their focus on the birth of factory labor out of feudal artisanship was myopic. Capitalism’s inconsistencies arise not only within the factory, where the cooperation of workers to produce goods is at odds with the individual ownership of the factory by capitalists, but also in society at large, where the demands for modern technological innovation require huge economies of scale and cooperation between workers in entire industries. In this way, economies have developed despite private ownership and hierarchical forms of management, not because of them. As the Solow-Swan growth model has shown, the main engine for economic growth in developed nations, at least since World War II, has been the introduction of technological innovation. In this same period, the primer for this engine has been public sector spending. It is the public sector that has played the most critical role in economic development through planning economies and allocating resources toward research and development. Unfortunately, the public, disengaged from their political institutions by a sprawling hierarchical class of bureaucrats and professional politicians, have allowed a parasitic private sector to profit from this innovation and to direct this allocation in a manner that best serves them. Regardless though, modern capitalist prosperity has only been able to occur through shadow socialism. The irony of all modern entrepreneurs is that none of them would have been able to innovate without the aid of the state. Socialism, democracy and equality The question then beckons: why should socialism remain in the shadows? What is needed to deal with the crisis of global warming is not policies of planned economic de-growth that mimic rightwing austerity under a socialists facade, but rapid and sustainable economic growth through embracing technological innovations that reconcile the tension between society and nature. A great confusion has overcome both the acolytes and adversaries of capitalism. “Capitalism” as a particular mode of production has become so synonymous with economics in general that any economic growth is seen as capitalist economic growth, regardless of its context or results. In actuality, capitalism is an example of an alienated economy where the vast majority of its participants—that is to say, workers and consumers—are unaware of their true economic potential. The ultimate form of “creative destruction” regarding capitalism is the technological and economic development out of capitalism itself. The humanist desire for continuous and sustainable economic development, the constant pursuit for ecologically sound and cooperative forms of production and consumption is a threat to capitalism, not the apex of its expression. Polemical calls for economic de-growth in a world where the majority of people still live in abject poverty are worse than strategically inept; they are morally reprehensible and politically asphyxiating. Democracy, especially sophisticated forms of direct democracy, cannot advance without increasing material prosperity. Since the time of Aristotle, it has been recognized that for democracy to function there must be a degree of leisure time spent among the population. No robust public life can be established in a society where material scarcity causes people to devote the majority of their time to securing the fundamental means of subsistence. Further, a society where technologies have reduced, and in some cases eliminated, odious tasks liberates people to engage in higher cultural functions, including their own self-management and governance. This is especially the case for those who have been traditionally denied access to the public sphere. Despite its necessity for its time, the eighteenth-century cry that “we are all born equal” has become an ossified platitude. The reality is that we are not all born equal. Nature produces grave inequalities between us in ability. Morality demands that we rectify these inequalities by creating new opportunities, both socially and materially, for all. There is a dialectical relation between social equality and technological innovation. Modern feminism would have an entirely different meaning if breakthroughs in contraceptive technologies were not established by the mid-twentieth century. The case is similar for the elderly, for transgender individuals, for people with disabilities, children, and nations established in areas of the world with a dearth of natural resources. In each situation, the interaction between social struggles and technological innovations has led to greater social inclusion. People are not born equal, rather, they are perpetually made and remade equal by continuous efforts at social uplift and prosperity. Conclusion There is no reason to doubt that such “equalizing” efforts could not only continue but be advanced into the ecological realm. Modern technologies and the growth of material prosperity have within them the potential to “uplift” the environment. Far from being a matter of mere conservation, environmental sustainability in the modern world is a twin-cousin to development economics. Influenced by the work of soft deep ecologists such as Bill McKibben, many environmentalists have lamented the “end of nature” and arrival of the Anthropocene, fearing that it signifies the beginning of the end for biodiversity. No doubt, the Anthropocene has this potential, but it also has another potential. Through modeling its environment to ensure human prosperity while at the same time organizing its social institutions to guarantee environmental stewardship, humanity has a historical opportunity that is unprecedented among any species on that planet. Humanity can escape its Malthusian traps through continually enriching, rather than simplifying, it surrounding environment. Its flourishing as a species could be a boon for biodiversity rather than its dwindling. There needs to be a conscious social reconfiguration that utilizes denser forms of energy, dematerializes economies, and geographically decouples humanity from nature within a triad of urban, rural, and feral development. If such a reconfiguration where to occur it would mean a massive expansion of economic growth through the unleashing of humanity’s technological and scientific potential. The complexity of such a project can only happen through the type of large participatory planned economy that socialists have always advocated for. All capitalists have a vested interest in protecting their business model, even if such a model is based on an obsolete technology that is destroying the planet. The only way societal development can avoid getting bogged down in the obstinateinterests of capitalists is if economic interests become the general interest of all. That is only possible in a democratic economic system that values the participation and perspective of each individual, in community, instead of the will of one class over another

#### Capitalism solves extinction through environmental collapse – reject evidence that ignores synergistic deployment of adaptative tech – the public WILL channel political energies into innovative solutions that turn case.

Bailey ’18 [Ronald; March 12; B.A. in Economics from the University of Virginia, member of the Society of Environmental Journalists and the American Society for Bioethics and Humanities, citing a compilation of interdisciplinary research; Reason, “Climate Change Problems Will Be Solved Through Economic Growth,” <https://reason.com/2018/03/12/climate-change-problems-will-be-solved-t>; RP]

"It is, I promise, worse than you think," David Wallace-Wells wrote in an infamously apocalyptic 2017 New York Magazine article. "Indeed, absent a significant adjustment to how billions of humans conduct their lives, parts of the Earth will likely become close to uninhabitable, and other parts horrifically inhospitable, as soon as the end of this century." The "it" is man-made climate change. Temperatures will become scalding, crops will wither, and rising seas will inundate coastal cities, Wallace-Wells warns. But toward the end of his screed, he somewhat dismissively observes that "by and large, the scientists have an enormous confidence in the ingenuity of humans….Now we've found a way to engineer our own doomsday, and surely we will find a way to engineer our way out of it, one way or another." Over at Scientific American, John Horgan considers some eco-modernist views on how humanity will indeed go about engineering our way out of the problems that climate change may pose. In an essay called "Should We Chill Out About Global Warming?," Horgan reports the more dynamic and positive analyses of two eco-modernist thinkers, Harvard psychologist Steven Pinker and science journalist Will Boisvert. In an essay for The Breakthrough Journal, Pinker notes that such optimism "is commonly dismissed as the 'faith that technology will save us.' In fact, it is a skepticism that the status quo will doom us—that knowledge and behavior will remain frozen in their current state for perpetuity. Indeed, a naive faith in stasis has repeatedly led to prophecies of environmental doomsdays that never happened." In his new book, Enlightenment Now, Pinker points out that "as the world gets richer and more tech-savvy, it dematerializes, decarbonizes, and densifies, sparing land and species." Economic growth and technological progress are the solutions not only to climate change but to most of the problems that bedevil humanity. Boisvert, meanwhile, tackles and rebuts the apocalyptic prophecies made by eco-pessimists like Wallace-Wells, specifically with regard to food production and availabilty, water supplies, heat waves, and rising seas. "No, this isn't a denialist screed," Boisvert writes. "Human greenhouse emissions will warm the planet, raise the seas and derange the weather, and the resulting heat, flood and drought will be cataclysmic. Cataclysmic—but not apocalyptic. While the climate upheaval will be large, the consequences for human well-being will be small. Looked at in the broader context of economic development, climate change will barely slow our progress in the effort to raise living standards." Boisvert proceeds to show how a series of technologies—drought-resistant crops, cheap desalination, widespread adoption of air-conditioning, modern construction techniques—will ameliorate and overcome the problems caused by rising temperatures. He is entirely correct when he notes, "The most inexorable feature of climate-change modeling isn't the advance of the sea but the steady economic growth that will make life better despite global warming." Horgan, Pinker, and Boisvert are all essentially endorsing what I have called "the progress solution" to climate change. As I wrote in 2009, "It is surely not unreasonable to argue that if one wants to help future generations deal with climate change, the best policies would be those that encourage rapid economic growth. This would endow future generations with the wealth and superior technologies that could be used to handle whatever comes at them including climate change." Six years later I added that that "richer is more climate-friendly, especially for developing countries. Why? Because faster growth means higher incomes, which correlate with lower population growth. Greater wealth also means higher agricultural productivity, freeing up land for forests to grow as well as speedier progress toward developing and deploying cheaper non–fossil fuel energy technologies. These trends can act synergistically to ameliorate man-made climate change." Horgan concludes, "Greens fear that optimism will foster complacency and hence undermine activism. But I find the essays of Pinker and Boisvert inspiring, not enervating….These days, despair is a bigger problem than optimism." Counseling despair has always been wrong when human ingenuity is left free to solve problems, and that will prove to be the case with climate change as well.

#### Anti-capitalist alternatives alone foreclose the possibility to explore vulnerabilities within capitalist structures and are a reductionist understanding of the way power manifests.

**Connolly 13** [William, professor of political theory at Johns Hopkins University. 2013. “The Fragility of Things”] JCH-PF

A philosophy attending to the acceleration, expansion, irrationalities, interdependencies, and fragilities of late capitalism suggests that we do not know with confidence, in advance of experimental action, just how far or fast changes in the systemic character of neoliberal capitalism can be made. The structures often seem solid and intractable, and indeed such a semblance may turn out to be true. Some may seem solid, infinitely absorptive, and intractable when they’re in fact punctuated by hidden vulnerabilities, soft spots, uncertainties, and potential lines of flight that become apparent when they are subjected to experimental action, upheaval, testing, and strain. Indeed, no ecology of late capitalism, given the variety of forces to which it is connected by a thousand pulleys, vibrations, impingements, de- pendencies, shocks, and threads, can specify with supreme confidence the solidity or potential flexibility of the structures it seeks to change. The strength of structural theory, at its best, was in identifying, institutional intersections that hold a system together; its conceit, at its worst, was the claim to know in advance how resistant such intersections are to potential change. Without adopting the opposite conceit, it seems important to pursue possible sites of strategic action that might open up room for productive change. Today it seems important to attend to the relation be- tween the need for structural change and identification of multiple sites of potential action. You do not know precisely what you are doing when you participate in such a venture. You combine an experimental temper with the appreciation that living and acting into the future inevitably contain a shifting quotient of uncertainty. The following tentative judgments and sites of action may be pertinent. 1) Neither neoliberal theory, nor socialist productivism, nor deep ecology, nor social democracy in its classic form seems sufficient to the contemporary condition. This is so in part because the powers of market self-regulation are both real and limited in relation to a larger multitude of heterogeneous force fields beyond the human estate with differential powers of self-regulation and metamorphosis. A first task is to challenge neoliberal ideology through critique and by elaborating and publicizing positive alternatives that acknowledge the disparate relations between market processes, other cultural systems, and nonhuman systems. Doing so to render the fragility of things more visible and palpable. Doing so, too, to set the stage for a series of interceded shifts in citizen role performances, social movements, and state action. 2) Those who seek to reshape the ecology of late capitalism might set an interim agenda of radical reform and then recoil back on the initiatives to see how they work. An interim agenda is the best thing to focus on because in a world of becoming the more distant future is too cloudy to engage. We must, for instance, become involved in experimental micropolitics on a variety of fronts, as we participate in role experimentations, social movements, artistic displaces, erotic-political shows, electoral campaigns, and creative interventions on the new media to help recode the ethos that now occupies investment practices, consumption desires, family savings, state priorities, church assemblies, university curricula, and media reporting. It is important to bear in mind how extant ideologies, established role performances, social movements, and commitments to state action intersect. To shift some of our own role performances in the zones of travel, church participation, home energy use, investment, and consumption, for instance, that now implicate us deeply in foreign oil dependence and the huge military expenditures that secure it, could make a minor difference on its own and also lift some of the burdens of institutional implications from us to support participation in more adventurous interpretations, political strategies, demands upon the state, and cross-state citizen actions. 3) Today perhaps the initial target, should be on reconstituting established patterns of consumption by a combination of direct citizen actions in consumption choices, publicity of such actions, the organization of local collectives to modify consumption practices, and social movements to reconstitute the current state- and market-supported infrastructure of consumption. By the infrastructure of consumption I mean publicly supported and subsidized market subsystems such as a national highway system, a system of airports, medical care through private insurance, agribusiness pouring high sugar, salt, and fat content into foods, corporate ownership of the public media, the prominence of corporate 403 accounts over retirement pensions, and so forth that enable some modes of consumption in the zones of travel, education, diet, retirement, medical care, energy use, health, and education and render others much more difficult or expensive to procure.22 To change the infrastructure is also to shift the types of work and investment available. Social movements that work upon the infrastructure and ethos of consumption in tandem can thus make a real difference directly, encourage more people to heighten their critical perspectives, and thereby open more people to a more militant politics if and as the next disruptive event emerges. Perhaps a cross-state citizen goal should construct a pluralist assemblage by moving back and forth between experiments in role performances, the refinement of sensitive modes of perception, revisions in political ideology, and adjustments in political sensibility; doing so to mobilize enough collective energy to launch a general strike simultaneously in several countries in the near future. The aim of such an event would be to reverse the deadly future created by established patterns of climate change by fomenting significant shifts in patterns of consumption, corporate policies, state law, and the priorities of interstate organizations. Again, the dilemma of today is that the fragility of things demands shifting and slowing down intrusions into several aspects of nature as we speed up shifts in identity; role performance, cultural ethos, market regulation, and state policy. 4) The existential forces of hubris (expressed above all in those confident drives to mastery conveyed by military elites, financial economists, financial elites, and CEOs) and of ressentiment (expressed in some sectors of secularism and evangelicalism) now play roles of importance in the shape of consumption practices, investment portfolios, worker routines, managerial demands, and the uneven senses of entitlement that constitute neoliberalism. For that reason activism inside churches, schools, street life, and the media must become increasingly skilled and sensitive. As we proceed, some of us may present the themes of a world of becoming to larger audiences, challenging thereby the complementary notions of a providential world and secular mastery that now infuse too many role performances, market practices, and state priorities in capitalist life. For existential dispositions, do infuse the role priorities of late capitalism. Today it is both difficult for people to perform the same roles with the same old innocence and difficult to challenge those performances amid our own implication in them. Drives by evangelists, the media, neoconservatives, and the neoliberal right to draw a veil of innocence across the priorities of contemporary life make the situation much worse. 5) The emergence of a neofascist or mafia-type capitalism slinks as a dangerous possibility on the horizon, partly because of the expansion and intensification of capital, partly because of the real fragility of things, partly because the identity needs of many facing these pressures encourage them to cling more intensely to a neoliberal imaginary as its bankruptcy becomes increasingly apparent, partly because so many in America insist upon retaining the special world entitlements the country achieved after World War II in a world decreasingly favorable to them, partly because of the crisis tendencies inherent in neoliberal capitalism, and partly because so many resist living evidence around and in them that challenges a couple of secular and theistic images of the cosmos now folded into the institutional life of capitalism. Indeed the danger is that those constituencies now most disinclined to give close attention to public issues could oscillate between attraction to the mythic promises of neoliberal automaticity and attraction to a neofascist movement when the next crisis unfolds. It has happened before. I am not saying that neoliberalism is itself a form of fascism, but that the failures and meltdowns it periodically promotes could once again foment fascist or neofascist responses, as happened in several countries after the onset of the Great Depression. 6) The democratic state, while it certainly cannot alone tame capital or reconstitute the ethos and infrastructure of consumption, must play a significant role in reconstituting our lived relations to climate, weather, resource use, ocean currents, bee survival, tectonic instability, glacier flows, species diversity, work, local life, consumption, and investment, as it also responds favorably to the public pressures we must generate to forge a new ethos.A new, new left will thus experimentally enact new intersections between role performance and political activity, outgrow its old disgust with the very idea of the state, and remain alert to the dangers states can pose. It will do- so because, as already suggested, the fragile ecology of late ca. Most of those movemepital requires state interventions of several sorts. A refusal to participate in the state today cedes too much hegemony to neoliberal markets, either explicitly or by implication. Drives to fascism, remember, rose the last time in capitalist states after market meltdowns failed. But a couple became consolidated through a series of resonances (vibrations) back and forth between industrialists, the state, and vigilante groups in neighborhoods, clubs, churches, the police, the media, and pubs. You do not fight the danger of a new kind of neofascism by withdrawing from either micropolitics or state politics. You do so through a multisited politics designed to infuse a new ethos into the fabric of everyday life. Changes in ethos can in turn open doors to new possibilities of state and interstate action, so that an advance in one domain seeds that in the other. And vice versa. A positive dynamic of mutual amplification might be generated here. Could a series of significant shifts in the routines of state and global capitalism even press the fractured system to a point where it hovers on the edge of capitalism itself? We don’t know. That is one reason it is important to focus on interim goals. Another is that in a world of becoming, replete with periodic and surprising shifts in the course of events, you cannot project far beyond an interim period. Another yet is that activism needs to project concrete, interim possibilities to gain support and propel itself forward. That being said, it does seem unlikely to me, at least, that a positive interim future includes either socialist productivism or the world projected by proponents of deep ecology. 7) To advance such an agenda it is also imperative to negotiate new connections between nontheistic constituencies who care about the future of the Earth and numerous devotees of diverse religious traditions who fold positive spiritualities into their creedal practices. The new, multifaceted movement needed today, if it emerges, will take the shape of a vibrant pluralist assemblage acting at multiple sites within and across states, rather than either a centered movement with a series of fellow travelers attached to it or a mere electoral constellation. Electoral victories are important, but they work best when they touch priorities already embedded in churches, universities, film, music, consumption practices, media reporting, investment priorities, and the like. A related thing to keep in mind is that the capitalist modes of acceleration, expansion, and intensification that heighten the fra- gility of things today also generate pressures to minoritize the world along multiple dimensions at a more rapid pace than heretofore. A new pluralist constellation will build upon the latter developments as it works to reduce the former effects. I am sure that the forgoing comments will appear to some as "optimistic" or "utopian." But optimism and pessimism are both primarily spectatorial views. Neither seems sufficient to the contemporary condition. Indeed pessimism, if you dwell on it long, easily slides into cynicism, and cynicism often plays into the hands of a right wing that applies exclusively to any set of state activities not designed to protect or coddle the corporate estate. That is one reason that "dysfunctional politics" redounds so readily to the advantage of cynics on the right who work to promote it.They want to promote cynicism with respect to the state and innocence with respect to the market. Pure critique as already suggested, does not suffice either. Pure critique too readily carries critics and their followers to the edge of cynicism. It is also true that the above critique concentrates on neoliberal capital- ism, not capitalism writ large. That is because it seems to me that we need to specify the terms of critique as closely as possible and think first of all about interim responses. If we lived under, say, Keynesian capitalism, a somewhat different set of issues would be defined and other strategies identified.25 Capitalism writ large—while it sets a general context that neoliberalism inflects in specific ways—sets too large and generic a target. It can assume multiple forms, as the differences between Swedish and American capitalism suggest; the times demand a set of interim agendas targeting the hegemonic form of today, pursued with heightened militancy at several sites. The point today is not to wait for a revolution that overthrows the whole system. The "system," as we shall see further, is replete with too many loose ends, uneven edges, dicey intersections with nonhuman forces, and uncertain trajectories to make such a wholesale project plausible. Besides, things are too urgent and too many people on the ground are suffering too much now.