# 1NC Emory Round 6

## 1

### CP

#### Text – Private Appropriation of Outer Space except for Space Elevators is Unjust.

#### Space Elevators constitute Appropriation – they impede orbits.

Matignon 19 Louis de Gouyon Matignon 3-3-2019 "LEGAL ASPECTS OF THE SPACE ELEVATOR TRANSPORTATION SYSTEM" <https://www.spacelegalissues.com/space-law-legal-aspects-of-the-space-elevator-transportation-system/> [PhD in space law (co-supervised by both Philippe Delebecque, from Université Paris 1 Panthéon-Sorbonne, France, and Christopher D. Johnson, from Georgetown University || regularly write articles on the website Space Legal Issues so as to popularise space law and public international law]//Elmer

An Earth-based space elevator would consist of a cable with one end attached to the surface near the equator and the other end in space beyond geostationary orbit. An orbit is the curved path through which objects in space move around a planet or a star. The 1967 Treaty’s regime and customary law enshrine the principle of non-appropriation and freedom of access to orbital positions. Space Law and International Telecommunication Laws combined to protect this use against any interference. The majority of space-launched objects are satellites that are launched in Earth’s orbit (a very small part of space objects – scientific objects for space exploration – are launched into outer space beyond terrestrial orbits). It is important to precise that an orbit does not exist: satellites describe orbits by obeying the general laws of universal attraction. Depending on the launching techniques and parameters, the orbital trajectory of a satellite may vary. Sun-synchronous satellites fly over a given location constantly at the same time in local civil time: they are used for remote sensing, meteorology or the study of the atmosphere. Geostationary satellites are placed in a very high orbit; they give an impression of immobility because they remain permanently at the same vertical point of a terrestrial point (they are mainly used for telecommunications and television broadcasting). A geocentric orbit or Earth orbit involves any object orbiting Planet Earth, such as the Moon or artificial satellites. Geocentric (having the Earth as its centre) orbits are organised as follow: 1) Low Earth orbit (LEO): geocentric orbits with altitudes (the height of an object above the average surface of the Earth’s oceans) from 100 to 2 000 kilometres. Satellites in LEO have a small momentary field of view, only able to observe and communicate with a fraction of the Earth at a time, meaning a network or constellation of satellites is required in order to provide continuous coverage. Satellites in lower regions of LEO also suffer from fast orbital decay (in orbital mechanics, decay is a gradual decrease of the distance between two orbiting bodies at their closest approach, the periapsis, over many orbital periods), requiring either periodic reboosting to maintain a stable orbit, or launching replacement satellites when old ones re-enter. 2) Medium Earth orbit (MEO), also known as an intermediate circular orbit: geocentric orbits ranging in altitude from 2 000 kilometres to just below geosynchronous orbit at 35 786 kilometres. The most common use for satellites in this region is for navigation, communication, and geodetic/space environment science. The most common altitude is approximately 20 000 kilometres which yields an orbital period of twelve hours. 3) Geosynchronous orbit (GSO) and geostationary orbit (GEO) are orbits around Earth at an altitude of 35 786 kilometres matching Earth’s sidereal rotation period. All geosynchronous and geostationary orbits have a semi-major axis of 42 164 kilometres. A geostationary orbit stays exactly above the equator, whereas a geosynchronous orbit may swing north and south to cover more of the Earth’s surface. Communications satellites and weather satellites are often placed in geostationary orbits, so that the satellite antennae (located on Earth) that communicate with them do not have to rotate to track them, but can be pointed permanently at the position in the sky where the satellites are located. 4) High Earth orbit: geocentric orbits above the altitude of 35 786 kilometres. The competing forces of gravity, which is stronger at the lower end, and the outward/upward centrifugal force, which is stronger at the upper end, would result in the cable being held up, under tension, and stationary over a single position on Earth. With the tether deployed, climbers could repeatedly climb the tether to space by mechanical means, releasing their cargo to orbit. Climbers could also descend the tether to return cargo to the surface from orbit.

#### Private Companies are pursuing Space Elevators.

Alfano 15 Andrea Alfano 8-18-2015 “All Of These Companies Are Working On A Space Elevator” <https://www.techtimes.com/articles/77612/20150818/companies-working-space-elevator.htm> (Writer at the Tech Times)//Elmer

Space elevators are solid proof that any mundane object sounds way cooler if you stick the word "space" in front of it. But there's much more than coolness at stake when building a space elevator – this technology has the potential to revolutionize space transportation, and the Canadian private space company Thoth Technology that was recently awarded a patent for its space elevator design isn't the only company in the game. One of the other major players is a U.S.-based company called LiftPort Group, founded by space entrepreneur Michael Laine in 2003. Its plan for a space elevator is vastly different from the one for which Thoth received a patent, however. Whereas Thoth's plans entail tethering a 12-mile-high inflatable space elevator to the Earth, LiftPort is shooting for the moon. Originally, LiftPort had planned to build an Earth elevator, too, but it abandoned the idea in 2007 in favor of building a lunar elevator. The basic design for a lunar elevator is an anchor in the moon that is attached to a cable that extends to a space station situated at a very special point. Known as a Lagrange Point, this is the gravitational tipping point between the Earth and the moon, where their gravitational pulls essentially cancel one another out. A robot could then travel up and down the tether, ferrying cargo between the moon and the station. Out farther in space, a counterweight would balance out the system. Both types of space elevator are intended to increase space access, but in very different ways. Thoth's Earth elevator aims to make launches easier by starting off 12 miles above the Earth's surface. LiftPort's space elevator aims to increase access to the moon in particular, because it is much easier to launch a rocket to the Lagrange Point and dock it at a space station than it is to get to the moon directly. There's a third major company based in Japan called Obayashi Corp. whose plans look like a hybrid of Thoth's and LiftPort's. Obayashi is not a space company, however – it's actually a construction company. Like Thoth, Obayashi plans to build an Earth elevator. But its Earth elevator would consist of a cable tethered to the blue planet, a robotic cargo-carrier, a space station, and a counterweight. It essentially looks like LiftPort's plans, but stuck to the Earth instead of to the moon.

#### Yes Space Elevators – NASA confirms.

Snowden 18 Scott Snowden 10-2-2018 "A colossal elevator to space could be going up sooner than you ever imagined" <https://www.nbcnews.com/mach/science/colossal-elevator-space-could-be-going-sooner-you-ever-imagined-ncna915421> (Scott has written about science and technology for 20 years for publications around the world. He covers environmental technology for Forbes.)//Elmer

For more than half a century, rockets have been the only way to go to space. But in the not-too-distant future, we may have another option for sending up people and payloads: a colossal elevator extending from Earth’s surface up to an altitude of 22,000 miles, where geosynchronous satellites orbit. NASA says the basic concept of a space elevator is sound, and researchers around the world are optimistic that one can be built. The Obayashi Corp., a global construction firm based in Tokyo, has said it will build one by 2050, and China wants to build one as soon as 2045. Now an experiment to be conducted soon aboard the International Space Station will help determine the real-world feasibility of a space elevator. “The space elevator is the Holy Grail of space exploration,” says Michio Kaku, a professor of physics at City College of New York and a noted futurist. “Imagine pushing the ‘up’ button of an elevator and taking a ride into the heavens. It could open up space to the average person.”

#### Regardless of completion, Elevators spur investment in Nanotechnology

Liam O’Brien 16. University of Wollongong. 07/2016. “Nanotechnology in Space.” Young Scientists Journal; Canterbury, no. 19, p. 22.

Nanotechnology is at the forefront of scientific development, continuing to astound and innovate. Likewise, the space industry is rapidly increasing in sophistication and competition, with companies such as SpaceX, Blue Origin and Virgin Galactic becoming increasingly prevalent in what could become a new commercial space race. The various space programs over the past 60 years have led to a multitude of beneficial impacts for everyday society. Nanotechnology, through research and development in space has the potential to do the same. Potential applications of nanotechnology in space are numerous, many of them have the potential to capture and inspire generations to come. One of these applications is the space elevator. By using carbon nanotubes, a super light yet strong material, this concept would be an actual physical structure from the surface of the Earth to an altitude of approximately 36 000 km. The tallest building in the world would fit into this elevator over 42 000 times. The counterweight, used to keep the elevator taught, is proposed to be an asteroid. This would need to be at a distance of 100 000 km, a quarter of the distance to the moon. The benefits of such a structure would be enormous. 95% of a space shuttle's weight at take-off is fuel, costing US$ 20 000 per kilogram to send something into space. However, with a space elevator the cost per kilogram can be reduced to as little as US$ 200. Exploration to other planets can begin at the tower, and travel to and from the moon could become as simple as a morning commute to work. Solar sails provide the means to travel large distances and incredible speeds. Much like sails on a boat use wind, the solar sail uses light as a source of propulsion. Ideally these sails would be kilometres in length and only a few micrometres in thickness. This provides us with the ability to travel at speeds previously unheard of. Using carbon nanotubes once again, a solar sail has the capability to travel at 39 756 km/s which is 13% of the speed of light! This sail could reach Pluto in an astonishing 1.7 days, and Alpha Centauri in just 32 years. Space travel to other planets, other stars, could be possible with solar sails. The Planetary Society is funding for a space sail of itself, and has successfully launched one into orbit. NASA has also sent a sail into orbit, allowing it to burn up in the atmosphere after 240 days. Investing time and resources into nanotechnology for space exploration has benefits for society today. Materials such as graphene are being used in modern manufacturing at an increasing rate as the applications become utilised. Carbon nanotubes will change the way we think about materials and their strength. These nanotubes have a tensile strength one hundred times that of steel, yet are only a sixth of the weight. Imagine light weight vehicles using less petrol and energy as well as being just as strong as regular vehicles. With potentials to revolutionize the way we think about space travel, nanotechnology has a bright future. As a new field of science, it has the capability to push the human race to the outer reaches of our galaxy and hopefully one day to other stars. It will inspire generations of explorers and dreamers to challenge themselves and advance the human race into the next era. As Richard Feynman said in his 1959 talk 'There's Plenty of Room at the Bottom' "A field in which little has been done, but in which an enormous amount can be done. There is still plenty more to achieve.

#### Nano tech solves warming

Bhavya Khullar. September 4, 2017. Nanomaterials Could Combat Climate Change and Reduce Pollution. https://www.scientificamerican.com/article/nanomaterials-could-combat-climate-change-and-reduce-pollution/

The list of environmental problems that the world faces may be huge, but some strategies for solving them are remarkably small. First explored for applications in microscopy and computing, nanomaterials—materials made up of units that are each thousands of times smaller than the thickness of a human hair—are emerging as useful for tackling threats to our planet’s well-being. Scientists across the globe are developing nanomaterials that can efficiently use carbon dioxide from the air, capture toxic pollutants from water and degrade solid waste into useful products. “Nanomaterials could help us mitigate pollution. They are efficient catalysts and mostly recyclable. Now, they have to become economical for commercialization and better to replace present-day technologies completely,” says [Arun Chattopadhyay](http://www.iitg.ac.in/arun/), a member of the chemistry faculty at the Center for Nanotechnology, Indian Institute of Technology Guwahati. To help slow the climate-changing rise in atmospheric CO2levels, researchers have developed nanoCO2 harvesters that can suck atmospheric carbon dioxide and deploy it for industrial purposes. “Nanomaterials can convert carbon dioxide into useful products like alcohol. The materials could be simple chemical catalysts or photochemical in nature that work in the presence of sunlight,” says Chattopadhyay, who has been working with nanomaterials to tackle environmental pollutants for more than a decade. Many research groups are working to address a problem that, if solved, could be a holy grail in combating climate change: how to pull CO2 out of the atmosphere and convert it into useful products. Chattopadhyay isn’t alone. Many research groups are working to address a problem that, if solved, could be a holy grail in combating climate change: how to pull CO2 out of the atmosphere and convert it into useful products. Nanoparticles offer a promising approach to this because they have a large surface-area-to-volume ratio for interacting with CO2 and properties that allow them to facilitate the conversion of CO2into other things. The challenge is to make them economically viable. Researchers have tried everything from metallic to carbon-based nanoparticles to reduce the cost, but so far they haven’t become efficient enough for industrial-scale application. One of the most recent points of progress in this area is work by scientists at the CSIR-Indian Institute of Petroleum and the Lille University of Science and Technology in France. The researchers developed a nanoCO2 harvester that uses water and sunlight to convert atmospheric CO2 into methanol, which can be employed as an engine fuel, a solvent, an antifreeze agent and a diluent of ethanol. Made by wrapping a layer of modified graphene oxide around spheres of copper zinc oxide and magnetite, the material looks like a miniature golf ball, captures CO2 more efficiently than conventional catalysts and can be readily reused, according to Suman Jain, senior scientist of the Indian Institute of Petroleum, Dehradun in India, who developed the nanoCO2harvester. Jain says that the nanoCO2 harvester has a large molecular surface area and captures more CO2 than a conventional catalyst with similar surface area would, which makes the conversion more efficient. But due to their small size, the nanoparticles have a tendency to clump up, making them inactive with prolonged use. Jain adds that synthesizing useful nanoparticle-based materials is also challenging because it’s hard to make the particles a consistent size. Chattopadhyay says the efficiency of such materials can be improved further, providing hope for useful application in the future. CLEANSING WATER Most toxic dyes used in textile and leather industries can be captured with nanoparticles. “Water pollutants such as dyes from human-created waste like those from tanneries could get to natural sources of water like deep tube wells or groundwater if wastewater from these industries is left untreated,” says Chattopadhyay. “This problem is rather difficult to solve.” An international group of researchers led by professor Elzbieta Megiel of the University of Warsaw in Poland reports that nanomaterials have been widely studied for removing heavy metals and dyes from wastewater. According to the research team, adsorption processes using materials containing magnetic nanoparticles are highly effective and can be easily performed because such nanoparticles have a large number of sites on their surface that can capture pollutants and don’t readily degrade in water. Chattopadhyay adds that appropriately designed magnetic nanomaterials can be used to separate pollutants such as arsenic, lead, chromium and mercury from water. However, the nanotech-based approach has to be more efficient than conventional water purification technology to make it worthwhile. In addition to removing dyes and metals, nanomaterials can also be used to clean up oil spills. Researchers led by Pulickel Ajayan at Rice University in Houston, Texas, have developed a reusable nanosponge that can remove oil from contaminated seawater.

## 2

### Theory

#### No 1AR Theory—

#### 1] The 2NR must overcover theory since they get 3 minute 2ar collapse on one of the layers and persuasiveness advantage of a 3 minute 2ar

#### 2] Responses to my counter interp will be new which means 1ar theory necessitates intervention— outweighs because it makes the decision arbitrary

#### 3] Jurisdiction- If the judge can’t resolve an argument they don’t have the jurisdiction to vote on it because there is a risk of an incorrect decision

#### 4] Magnitude- resolvability means judge intervention which is worse than a shell with reasonability on it

## Case

### 1NC – AT: Solvency

#### AT Penny – Evidence about the private sector being bad isn’t a reason why the public sector being good – they haven’t made a distinction between private and public so they functionally have no solvency.

#### AT **Aronoff –** **1] This card is about SpaceX and Elon Musk only, 2] Its power tagged and specific to a falcon heavy space launch not private space, 3]** Public sector space growth undermines innovation overall – they are net less productive

**Beames 21** [Charles Beames, Charles is currently the Executive Chairman of York Space Systems, a leader in commercial satellite design and manufacturing, as well as Chairman of the SmallSat Alliance. He is also a retired Air Force Colonel, having served 23 years in space & intelligence leadership positions around the world, 9-30-2021, Forbes, "It Is Time Our Government Stops Competing Against The Commercial Space Industry", <https://www.forbes.com/sites/charlesbeames/2021/09/30/it-is-time-our-government-stops-competing-against-the-commercial-space-industry/> accessed on 12-21-2021] Adam

With its fiery engines and impressive reusable rockets, SpaceX is the most visible example of the power of private enterprise in space. Every month, SpaceX makes another great leap further into the stars with another launch and often carrying satellites from other companies. Conservative estimates suggest that tens of thousands more are scheduled to be launched over the next five years to perform missions limited to the providence of major nations only a decade ago. An outstanding example of an agency leveraging corporate R&D rather than spending its own capital is the Space Development Agency (SDA). When devising its strategy to build the nation’s next-generation missile tracking and communication systems, SDA mandated that the satellites hosting the specialized instruments onboard must be built on an off-the-shelf commodity bus already in rate production. SDA has already awarded four successful companies at a fixed price contract with 10 others deemed competitive, which means we can expect that very little development is required. Every time the government develops their own version of the same technologies, it inhibits the investment and creative thinking necessary for America’s next big play in space. The boldest and most innovative investors and engineers in the commercial sector shy away from space as a business opportunity when the government insists on staying in the ring, because there are no longer the 10-20X multiples on private investment that commercial opportunities in the tech sector can deliver. Institutional investors do still pour capital into traditional defense companies, especially in times of increasing hostilities. Unfortunately for them, however, the valuation multiples on revenue are far lower – about 2X – and only match the pace of government expansion. We must rethink the policy incentive structure of last century’s space industrial model to reward unbounded free market economic growth instead of companies whose market cap only grows with more national defense spending. Admittedly, there are instances in which it is still necessary for the government to develop their own satellite, component or rocket, but it is increasingly rare. The U.S. government once again must transition to become a consumer of commercial space goods and services so that America’s space industry outpaces its adversaries. An organic, commercial space marketplace exists now and must be rewarded, not stifled. We are on a tight schedule, because near-peer competitors like China (and others) are aware of this strategic competition and instead choose to [leverage their nascent technologies to outpace us](https://www.forbes.com/sites/charlesbeames/2020/10/14/the-dragon-is-breathing-down-our-neck-action-is-americas-best-weapon/?sh=67a437724cb5). The role for the government is larger and more strategic than ever before, but it is our capital markets that are our biggest advantage in Great Power competition. We must maximize this strength by encouraging private investments in the new space economy, promoting competition among commercial providers, and not competing against the very technologies we hope to leverage to secure America’s promising future in space.

#### AT Schutz – This is in the context of capitalism on Earth, not in space – they don’t justify how expanding capitalism to space worsens climate change

#### AT **Robinson and O’Keefe – This is in the context of taking capitalism down as a whole, not space capitalism – they haven’t read evidence proving how space is the linchpin of capitalism so don’t grant them full solvency of the advantage**

#### AT **Savage – No distinction between a pre-nationalized space corporation and a private space corporation – they cant solve if the government is capitalist too**

### 1NC – AT: Advantage

#### Capitalism is sustainable - Tech Innovation drives dematerialization that makes Cap Sustainable AND solves warming and alternatives don’t solve

McAfee 19, Andrew. More from Less: The Surprising Story of How We Learned to Prosper Using Fewer Resources—and What Happens Next. Scribner, 2019. Props to DML for finding. (Cofounder and codirector of the MIT Initiative on the Digital Economy at the MIT Sloan School of Management, former professor at Harvard Business School)//Elmer

The decreases in resource use, pollution, and other exploitations of the earth cataloged in the preceding chapters are great news. But are they going to last? It could be that we're just living in a pleasant interlude between the Industrial Era and another rapacious period during which we massively increase our footprint on our planet and eventually cause a giant Malthusian crash. It could be, but I don't think so. Instead, I think we're going to take better care of our planet from now on. I'm confident that the Second Machine Age will mark the time in our history when we started to progressively and permanently tread more lightly on the earth, taking less from it and generally caring for it better, even as we humans continue to become more numerous and prosperous. The work of Paul Romer, who shared the 2018 Nobel Prize in economics, is one of the sources of this confidence. Growth Mindset Romer's largest contribution to economics was to show that **it's best not to think of new technologies as something that companies buy and bring in from the outside, but instead as something they create themselves** (the title of his most famous paper, published in 1990, is "Endogenous Technological Change"). These technologies are like designs or recipes; as Romer put it, they’re "the instructions that we follow for combining raw materials." This is close to the definitions of technology presented in chapter 7. Why do companies invent and improve technologies? Simply, to generate profits. They come up with instructions, recipes, and blueprints that will let them grow revenues or shrink costs. As we saw repeatedly in chapter 7, capitalism provides ample incentive for this kind of tech progress. So far, all this seems like a pretty standard argument for how the first two horsemen work together. Romer's brilliance was to highlight the importance of two key attributes of the technological ideas companies come up with as they pursue profits. The first is that they're nonrival, meaning that they can be used by more than one person or company at a time, and that they don't get used up. This is obviously not the case for most resources made out of atoms—I can't also use the pound of steel that you've just incorporated into the engine of a car—but it is the case for ideas and instructions. The Pythagorean theorem, a design for a steam engine, and a recipe for delicious chocolate chip cookies aren't ever going to get "used up" no matter how much they're used. The second important aspect of corporate technologies is that they're partially excludable. This means that companies can kind of prevent others from using them. They do this by keeping the technologies secret (such as the exact recipe for Coca-Cola), filing for patents and other intellectual-property protection, and so on. However, none of these measures is perfect (hence the words partially and kind of). Trade secrets leak. Patents expire, and even before they expire, they must describe the invention they're claiming and so let others study it. Partial excludability is a beautiful thing. It provides strong incentives for companies to create useful, profit-enhancing new technologies that they alone can benefit from for a time, yet it also ensures that the **new techs will eventually "spill over**"—that with time they’ll diffuse and get adopted by more and more companies, even if that's not what their originators want. Romer equated tech progress to the production by companies of nonrivalrous, partially excludable ideas and showed that these ideas cause an economy to grow. What's more, he also demonstrated that this **idea-fueled growth** doesn't have to slow down with time. It's **not constrained by** the size of the **labor** force, the amount of natural **resources**, or other such factors. Instead, economic growth is limited only by the idea-generating capacity of the people within a market. Romer called this capacity "human capital" and said at the end of his 1990 paper, "The most interesting positive implication of the model is that an economy with a larger total stock of human capital will experience faster growth." This notion, which has come to be called "increasing returns to scale," is as powerful as it is counterintuitive. Most formal models of economic growth, as well as the informal mental ones most of us walk around with, feature decreasing returns—growth slows down as the overall economy gets bigger. This makes intuitive sense; it just feels like it would be easier to experience 5 percent growth in a $1 billion economy than a $1 trillion one. But Romer showed that as long as that economy continued to add to its human capital—the overall ability of its people to come up with new technologies and put them to use—it could actually grow faster even as it grew bigger. This is because the stock of useful, nonrivalrous, nonexcludable ideas would keep growing. As Romer convincingly showed, economies run and grow on ideas. The Machinery of Prosperity Romer's ideas should leave us optimistic about the planetary benefits of digital tools—hardware, software, and networks—for three main reasons. First, countless examples show us how good these tools are at fulfilling the central role of technology, which is to provide "instructions that we follow for combining raw materials." Since raw materials cost money, profit-maximizing companies are particularly keen to find ways to use fewer of them. So they use digital tools to come up with beer cans that use less aluminum, car engines that use less steel and less gas, mapping software that removes the need for paper atlases, and so on and so on. None of this is done solely for the good of the earth—it's done for the pursuit of profit that's at the heart of capitalism—yet it benefits the planet by, as we've seen, causing us to take less from it. Digital tools are technologies for creating technologies, the most prolific and versatile ones we've ever come up with. They're machines for coming up with ideas. Lots of them. The same piece of computer-aided design software can be used to create a thinner aluminum can or a lighter and more fuel-efficient engine. A drone can be used to scan farmland to see if more irrigation is needed, or to substitute for a helicopter when filming a movie. A smartphone can be used to read the news, listen to music, and pay for things, all without consuming a single extra molecule. In the Second Machine Age, the global stock of digital tools is increasing much more quickly than ever before. It's being used in countless ways by profit-hungry companies to combine raw materials in ways that use fewer of them. In advanced economies such as America's, the cumulative impact of this combination of capitalism and tech progress is clear: **absolute dematerialization** of the economy and society, **and thus a smaller footprint on our planet**. The second way Romer's ideas about technology and growth are showing up at present is via decreased excludability. Pervasive digital tools are making it much easier for good designs and recipes to spread around the world. While this is often not what a company wants—it wants to exclude others from its great cost-saving idea— excludability is not as easy as it used to be. This isn't because of weaker patent protection, but instead because of stronger digital tools. Once one company shows what's possible, others use hardware, software, and networks to catch up to the leader. Even if they can't copy exactly because of intellectual-property restrictions, they can use digital tools to explore other means to the same end. So, many farmers learn to get higher yields while using less water and fertilizer, even though they combine these raw materials in different ways. Steve Jobs would certainly have preferred for Apple to be the only provider of smartphones after it developed the iPhone, but he couldn't maintain the monopoly no matter how many patents and lawsuits he filed. Other companies found ways to combine processors, memory, sensors, a touch screen, and software into phones that satisfied billions of customers around the world. The operating system that powers most non-Apple smartphones is Android, which is both free to use and freely modifiable. Google's parent company, Alphabet, developed and released Android without even trying to make it excludable; the explicit goal was to make it as widely imitable as possible. This is an example of the broad trend across digital industries of giving away valuable technologies for free. The Linux operating system, of which Android is a descendant, is probably the best-known example of free and open-source software, but there are many others. The online software repository GitHub maintains that it's "the largest open source community in the world" and hosts millions of projects. The Arduino community does something similar for electronic hardware, and the Instructables website contains detailed instructions for making equipment ranging from air-particle counters to machine tools, all with no intellectual-property protection. Contributors to efforts such as these have a range of motivations (Alphabet's goals with Android were far from purely altruistic—among other things, the parent of Google wanted to achieve a quantum leap in mobile phone users around the world, who would avail themselves of Google Search and services such as YouTube), but they're all part of the trend of technology without excludability, which is great news for growth. As we saw in chapter 10, smartphone use and access to the Internet are increasing quickly across the planet. This means that people no longer need to be near a decent library or school to gain knowledge and improve their abilities. Globally, people are taking advantage of the skill-building opportunities of new technologies. This is the third reason that the spread of digital tools should make us optimistic about future growth: these tools are helping human capital grow quickly. The free Duolingo app, for example, is now the world's most popular way to learn a second language. Of the nearly 15 billion Wikipedia page views during July of 2018, half were in languages other than English. Google's chief economist, Hal Varian, points out that hundreds of millions of how-to videos are viewed every day on YouTube, saying, "We never had a technology before that could educate such a broad group of people anytime on an as-needed basis for free." Romer's work leaves me hopeful because it shows that it's our ability to build human capital, rather than chop down forests, dig mines, or burn fossil fuels that drives growth and prosperity. His model of how economies grow also reinforces how well capitalism and tech progress work together, which is a central point of this book. The surest way to boost profits is to cut costs, and modern technologies, especially digital ones, offer unlimited ways to combine and recombine materials—to swap, slim, optimize, and evaporate—in cost-reducing ways. **There's no reason to expect that the two horsemen of capitalism and tech progress will stop** riding together anytime soon. Quite the contrary. Romer's insights reveal that they're likely to gallop faster and farther as economies grow. Our Brighter, Lighter Future The world still has billions of desperately poor people, but they won't remain that way. All available evidence strongly suggests that most will become much wealthier in the years and decades ahead. As they earn more and consume more, what will be the impact on the planet? The history and economics of the Industrial Era lead to pessimism on this important question. Resource use increased in lockstep with economic growth throughout the two centuries between James Watt's demonstration of his steam engine and the first Earth Day. Malthus and Jevons seemed to be right, and it was just a question of when, not if, we'd run up against the hard planetary limits to growth. But in America and other rich countries something strange, unexpected, and wonderful happened: we started getting more from less. We decoupled population and economic growth from resource consumption, pollution, and other environmental harms. Malthus's and Jevons's ideas gave way to Romer's, and the world will never be the same. This means that instead of worrying about the world's poor becoming richer, we should instead be helping them upgrade economically as much and as quickly as possible. Not only is it the morally correct thing to do, it's also the smart move for our planet. As today’s poor countries get richer, their institutions will improve and most will eventually go through what Ricardo Hausmann calls "the capitalist makeover of production." This makeover doesn't enslave people, nor does it befoul the earth. As today’s poor get richer, they'll consume more, but they'll also consume much differently from earlier generations. They won't read physical newspapers and magazines. They'll get a great deal of their power from renewables and (one hopes) nuclear because these energy sources will be the cheapest. They’ll live in cities, as we saw in chapter 12; in fact, they already are. They'll be less likely to own cars because a variety of transportation options will be only a few taps away. Most important, they'll come up with ideas that keep the growth going, and that benefit both humanity and the planet we live on. Predicting exactly how technological progress will unfold is much like predicting the weather: feasible in the short term, but impossible over a longer time. Great uncertainty and complexity prevent precise forecasts about, for example, the computing devices we’ll be using thirty years from now or the dominant types of artificial intelligence in 2050 and beyond. But even though we can't predict the weather long term, we can accurately forecast the climate. We know how much warmer and sunnier it will be on average in August than in January, for example, and we know that global average temperatures will rise as we keep adding greenhouse gases to the atmosphere. Similarly, we can predict the "climate" of future technological progress by starting from the knowledge that it will be heavily applied in the areas where it can affect capitalism the most. As we've seen over and over, tech progress supplies opportunities to trim costs (and improve performance) via dematerialization, and capitalism provides the motive to do so. As a result, the Second Enlightenment will continue as we move deeper into the twenty-first century. I'm confident that it will accelerate as digital technologies continue to improve and multiply and global competition continues to increase. We’ll see some of the most striking examples of slim, swap, evaporate, and optimize in exactly the places where the opportunities are biggest. Here are a few broad predictions, spanning humanity's biggest industries. Manufacturing. Complex parts will be made not by the techniques developed during the Industrial Era, but instead by three- dimensional printing. This is already the case for some rocket engines and other extremely expensive items. **As 3-D printing** improves and becomes cheaper, it will spread to automobile engine blocks, manifolds and other complicated arrangements of pipes, airplane struts and wings, and countless other parts. Because 3-D printing **generates virtually no waste** and doesn't require massive molds, it accelerates dematerialization.

#### Capitalist Peace Theory is True – it’s anti-Imperialist.

Mousseau 19, Michael. "The end of war: How a robust marketplace and liberal hegemony are leading to perpetual world peace." International Security 44.1 (2019): 160-196. Props to DML for finding. (Professor in the School of Politics, Security, and International Affairs at the University of Central Florida)//Elmer

Is war becoming obsolete? There is wide agreement among scholars that war has been in sharp decline since the defeat of the Axis powers in 1945, even as there is little agreement as to its cause.1 Realists reject the idea that this trend will continue, citing states' concerns with the “security dilemma”: that is, in anarchy states must assume that any state that can attack will; therefore, power equals threat, and changes in relative power result in conflict and war.2 Discussing the rise of China, Graham Allison calls this condition “Thucydides's Trap,” a reference to the ancient Greek's claim that Sparta's fear of Athens' growing power led to the Peloponnesian War.3 This article argues that there is no Thucydides Trap in international politics. Rather, the world is moving rapidly toward permanent peace, possibly in our lifetime. Drawing on economic norms theory,4 I show that what sometimes appears to be a Thucydides Trap may instead be a function of factors strictly internal to states and that these factors vary among them. In brief, leaders of states with advanced market-oriented economies have foremost interests in the principle of self-determination for all states, large and small, as the foundation for a robust global marketplace. War among these states, even making preparations for war, is not possible, because they are in a natural alliance to preserve and protect the global order. In contrast, leaders of states with weak internal markets have little interest in the global marketplace; they pursue wealth not through commerce, but through wars of expansion and demands for tribute. For these states, power equals threat, and therefore they tend to balance against the power of all states. Fearing stronger states, however, minor powers with weak internal markets tend to constrain their expansionist inclinations and, for security reasons, bandwagon with the relatively benign market-oriented powers. I argue that this liberal global hierarchy is unwittingly but systematically buttressing states' embrace of market norms and values that, if left uninterrupted, is likely to culminate in permanent world peace, perhaps even something close to harmony. My argument challenges the realist assertion that great powers are engaged in a timeless competition over global leadership, because hegemony cannot exist among great powers with weak markets; these inherently expansionist states live in constant fear and therefore normally balance against the strongest state and its allies.5 Hegemony can exist only among market-oriented powers, because only they care about global order. Yet, there can be no competition for leadership among market powers, because they always agree with the goal of their strongest member (currently the United States) to preserve and protect the global order

#### Yes Transition Wars and they cause Extinction

Nyquist 5 J.R. Nyquist 2-4-2005 “The Political Consequences of a Financial Crash” [www.financialsense.com/stormw...2005/0204.html](http://www.financialsense.com/stormw...2005/0204.html) (renowned expert in geopolitics and international relations)//Elmer

Should the United States experience a severe economic contraction during the second term of President Bush, the American people will likely support politicians who advocate further restrictions and controls on our market economy – guaranteeing its strangulation and the steady pauperization of the country. In Congress today, Sen. Edward Kennedy supports nearly all the economic dogmas listed above. It is easy to see, therefore, that the coming economic contraction, due in part to a policy of massive credit expansion, will have serious political consequences for the Republican Party (to the benefit of the Democrats). Furthermore, an economic contraction will encourage the formation of **anti-capitalist** majorities and a turning away from the free market system. The danger here is not merely economic. The political left openly favors the collapse of America’s strategic position abroad. The withdrawal of the **U**nited **S**tates from the Middle East, the Far East and Europe would **catastrophically impact an international system that presently allows 6 billion** people to live on the earth’s surface in relative peace. Should anti-capitalist dogmas overwhelm the global market and trading system that evolved under American leadership, the planet’s economy would contract and untold **millions would die of starvation**. Nationalistic totalitarianism, fueled by a politics of blame, would once again bring war to Asia and Europe. But this time the war would be **waged with mass destruction weapons** and the United States would be blamed because it is the center of global capitalism. Furthermore, if the anti-capitalist party gains power in Washington, we can expect to see policies of appeasement and unilateral disarmament enacted. American appeasement and disarmament, in this context, would be an admission of guilt before the court of world opinion. Russia and China, above all, would exploit this admission to justify aggressive wars, invasions and mass destruction attacks. A future financial crash, therefore, must be prevented at all costs.

#### Turns their impact – the transition magnifies every flaw of capitalism

Avrum 97 Mark Avrum 1997 <http://www.foresight.org/Conferences/MNT05/Papers/Gubrud/> “Nanotechnology and International Security” (Graduate Research Assistant – Center for Superconductivity Research at the University of Maryland)//Elmer

With molecular manufacturing, international trade in both raw materials and finished goods can be replaced by decentralized production for local consumption, using locally available materials. The decline of international trade will undermine a powerful source of common interest. Further, artificial intelligence will displace skilled as well as unskilled labor. A world system based on wage labor, transnational capitalism and global markets will necessarily give way. We imagine that a golden age is possible, but we don’t know how to organize one. As global capitalism retreats, it will leave behind a world dominated by politics, and possibly feudal concentrations of wealth and power. Economic insecurity, and fears for the material and moral future of humankind may lead to the rise of demagogic and intemperate national leaders. With almost two hundred sovereign nations, each struggling to create a new economic and social order, perhaps the most predictable outcome is chaos: shifting alignments, displaced populations, power struggles, ethnic conflicts inflamed by demagogues, class conflicts, land disputes, etc. Small and underdeveloped nations will be more than ever dependent on the major powers for access to technology, and more than ever vulnerable to sophisticated forms of control or subversion, or to outright domination. Competition among the leading technological powers for the political loyalty of clients might imply reversion to some form of nationalistic imperialism.

#### Degrowth hammers the third-world and causes global poverty to skyrocket. Growth can’t be decoupled from quality of life.

Piper 21, \*Kelsey Piper, a Staff Writer for Vox's new vertical; (August 3rd, 2021,“Can we save the planet by shrinking the economy?”, https://www.vox.com/future-perfect/22408556/save-planet-shrink-economy-degrowth)

The tension at the heart of degrowth: Can we fix global poverty without economic growth? One big problem with degrowth is this simple fact: In the coming decades, most carbon emissions won’t be coming from rich countries like the US — they’ll be happening in newly middle-income countries, like India, China, or Indonesia. Already, developing nations account for 63 percent of emissions, and they’re expected to account for even more as they develop further and as the rich world decarbonizes. Even if emissions in rich countries go to zero very soon, climate change is set to worsen as poorer countries increase their own emissions. That will, of course, have deeply negative climate impacts. But the alternative is a nonstarter — should the world really prioritize curbing emissions and economic growth if it meant suppressing the growth of those countries? Degrowthers see no dilemma here. What Hickel envisions is global movement in two directions: Poor countries could develop up to a certain level of prosperity and then stop; rich countries could develop down to that level and then stop. Thus, climate catastrophe could be averted, all while making the world’s poor more prosperous. “Rich countries urgently need to reduce their excess energy and resource use to sustainable levels so our sisters and brothers in the global South can live well too,” Hickel put it. “We live on an abundant planet and we can all flourish on it together, but to do so we have to share it more fairly, and build economies that are designed around meeting human needs rather than around perpetual growth.” From a climate change perspective, though, there’s a problem. First, it means that degrowth would do nothing about the bulk of emissions, [which are occurring in developing countries](https://www.cgdev.org/media/developing-countries-are-responsible-63-percent-current-carbon-emissions). Second, the global economy is more interconnected than Hickel implies. When Covid-19 hit, poor countries were devastated not just by the virus but by the [aftershocks of virus-induced slowdowns in consumption in rich countries](https://documents1.worldbank.org/curated/en/799701589552654684/pdf/Costs-and-Trade-Offs-in-the-Fight-Against-the-COVID-19-Pandemic-A-Developing-Country-Perspective.pdf). There’s some genuine appeal to the idea of an end to “consumerism,” but the pandemic offered a taste of how a sudden drop in rich-world consumption would actually affect the developing world. Covid-19 [dramatically curtailed Western imports and tourism for a time](https://documents1.worldbank.org/curated/en/799701589552654684/pdf/Costs-and-Trade-Offs-in-the-Fight-Against-the-COVID-19-Pandemic-A-Developing-Country-Perspective.pdf). The consequences in poor countries were devastating. Hunger rose, and child mortality followed. Covid-19, of course, wreaked direct economic havoc at the same time, with lockdowns having an [especially negative impact on some poor countries](https://www.vox.com/future-perfect/2020/4/18/21212688/coronavirus-lockdowns-developing-world); the effects of the pandemic and international demand shock were combined, and in some cases they’re hard to separate. But the United Nations, the [World Bank](https://documents1.worldbank.org/curated/en/799701589552654684/pdf/Costs-and-Trade-Offs-in-the-Fight-Against-the-COVID-19-Pandemic-A-Developing-Country-Perspective.pdf), and expert analyses point to the decline in global consumption as a significant part of the picture. Degrowthers reject this concern on two fronts: First, they argue that a sustained, deliberate reduction in consumption wouldn’t be anything like a recession. Recessions, they agree, are really bad, but that’s because consumption falls in affected sectors, instead of being targeted at things that don’t improve well-being. Degrowth, they say, would be different. Second, they contend that there is some path to economic growth in poor countries that doesn’t rely on trade with rich ones — certainly some countries managed economic growth when the whole world was poor, after all. Hickel’s perspective is that most trade between rich and poor countries is extractive, not mutually beneficial — and that maybe when that dynamic ceases, poor countries will have the chance for the catch-up growth they merit. That’s one take. But it means that degrowth’s case for not crushing the poor world is predicated on a speculative take on how those countries can grow — one that democratically elected leaders in those countries largely don’t share. What GDP doesn’t capture — and what it can tell us In a way, the debate over degrowth is a debate over the meaning of one economic indicator: gross domestic product (GDP). GDP measures the transactions within an economy — all the occasions when money changes hands in exchange for goods and services. It’s not wealth, but it’s one of the primary ways we measure wealth. It certainly doesn’t capture everything of value. When parents spend a quiet weekend at home teaching their children to read, for example, nothing GDP-generating has happened — but value has certainly been created. Degrowth articles burst with such examples. GDP, they love to point out, includes the production of things like nerve gas, even though that has no social value. And it doesn’t include storytelling, singing, gardening, and other simple human pleasures. “If our washing machines, fridges, and phones lasted twice as long, we would consume half as many (thus the output of those industries would decline), but with zero reduction in our access to those goods,” Hickel told me. If everyone worked half the hours they currently do, and made half the income, they might mostly be better off — at least, assuming that their basic needs were still met. “We propose policies like a living wage, a maximum income ratio, wealth taxes, etc. to accomplish this,” Hickel told me. “Given all of this, the language of poverty really gets it wrong: longer-lasting products, living wages, shorter working weeks, better access to public services and affordable housing — we are calling for the opposite of poverty. Yes, industries like SUVs and fast fashion would decline, but that doesn’t mean poverty. We can replace them with public transportation and longer-lasting fashion, thus meeting everyone’s needs.” There’s a lot of speculation here, and a lot of what degrowth’s critics would call hand-waving. Degrowth is fundamentally premised on the claim that we can cease to focus on growth while getting better than ever at addressing human needs. If that’s true, then that would certainly be great news. But in many ways, it’s a vision more wildly optimistic — disconnected from actual policy results — than any of the more standard “sustainable development” models degrowthers criticize for being out of touch. First, in the world today, there’s an extremely strong association between growth and welfare outcomes of every kind. GDP, while imperfect, is a better predictor of a country’s welfare state, outcomes for poor citizens in that country, and well-being measures like leisure time and life expectancy than any other measure. “GDP does leave out non-commercialized activities that are welfare-enhancing,” economist Branko Milanovic writes in a [rebuttal of degrowth](https://brankomilanovic.substack.com/p/degrowth-solving-the-impasse-by-magical): It is, like every other measure, imperfect and one-dimensional. But ... it is imperfect at the edges while fairly accurate overall. Richer countries are countries that are generally better-off in almost all metrics, from education, life expectancy, child mortality to women’s employment etc. Not only that: richer people are also on average healthier, better educated, and happier. Income indeed buys you health and happiness. (It does not guarantee that you are a better person; but that’s a different topic.) The metric of income or GDP is strongly associated with positive outcomes, whether we compare countries to each other, or people (within a country) to each other. The things degrowthers care about — leisure time, health care, life expectancy — are strongly correlated with societal wealth. The generosity of a welfare state and the availability of transfers to a state’s poorest people are also strongly correlated with societal wealth. Innovation, discovery, invention, and medical technology improvements are also strongly correlated with societal wealth. The strong correlation between child mortality and GDP per capita is apparent on the above graph. There are some outliers — some countries outperform or underperform their GDP somewhat, in terms of preventing child deaths — but in general, wealth strongly predicts child survival. No single, simple medical intervention causes the difference. Wealthier societies on average get better health outcomes across the board. This graph looks at child mortality not just by comparing rich countries to poor ones but also by comparing countries over time, as they get richer: Getting richer improves outcomes for children. Leisure time, too, has increased — and hours worked have declined — as the world has gotten wealthier. It might be possible in principle to do better — to decouple, if you will, health and well-being from access to material resources, so that everyone is well-off with many fewer resources. But the examples degrowthers point to remain speculative ones; if we ought to be skeptical, as degrowthers argue we should be, about the decoupling of wealth from ecological impact, we ought to be at least as skeptical about the prospects of decoupling wealth from living standards. “In the end, economic growth is about the production of stuff that people need and then the consumption of those things by the people who need it,” Max Roser at Our World in Data, a research institute focused on finding, visualizing, and communicating historical economic and health data, told me. He added: The money aspect, and the abstract concept of GDP, distract us and make it less obvious what it’s actually about. People want to have enough food, they need to go to the doctor, they need childcare, they want a good education. People need lots of stuff, and one thing that people care about are goods and services, and they need to be produced, and economic growth is about an increase in the quality and quantity of the goods and services that people need.

#### Every metric flows neg---the world is getting better.

--poverty is declining rapidly post-Industrial revolution

--other metrics are positive: health, education, moral expansion

--tech innovation is increasing

--we’re cognitively biased toward belief in collapse

Dr. Toby Ord 20, Senior Research Fellow in Philosophy at Oxford University, DPhil in Philosophy from the University of Oxford, The Precipice: Existential Risk and the Future of Humanity, p. 17-19

Yet despite these real problems, on average human life today is substantially better than at any previous time. The most striking change may be in breaking free from poverty. Until 200 years ago—the last thousandth of our history25—increases in humanity’s power and prosperity came hand in hand with increases in the human population. Income per person stayed almost unchanged: a little above subsistence in times of plenty; a little below in times of need.26 The Industrial Revolution broke this rule, allowing income to grow faster than population and ushering in an unprecedented rise in prosperity that continues to this day. We often think of economic growth from the perspective of a society that is already affluent, where it is not immediately clear if further growth even improves our lives. But the most remarkable effects of economic growth have been for the poorest people. In today’s world, one out of ten people are so poor that they live on less than two dollars per day—a widely used threshold for “extreme poverty.” That so many have so little is among the greatest problems of our time, and has been a major focus of my life. It is shocking then to look further back and see that prior to the Industrial Revolution 19 out of 20 people lived on less than two dollars a day (even adjusting for inflation and purchasing power). Until the Industrial Revolution, any prosperity was confined to a tiny elite with extreme poverty the norm. But over the last two centuries more and more people have broken free from extreme poverty, and are now doing so more quickly than at any earlier time.27 Two dollars a day is far from prosperity, and these statistics can be of little comfort to those who are still in the grip of poverty, but the trends toward improvement are clear. And it is not only in terms of material conditions that life has improved. Consider education and health. Universal schooling has produced dramatic improvements in education. Before the Industrial Revolution, just one in ten of the world’s people could read and write; now more than eight in ten can do so.28 For the 10,000 years since the Agricultural Revolution, life expectancy had hovered between 20 and 30 years. It has now more than doubled, to 72 years.29 And like literacy, these gains have been felt across the world. In 1800 the highest life expectancy of any country was a mere 43 years, in Iceland. Now every single country has a life expectancy above 50.30 The industrial period has seen all of humanity become more prosperous, educated and long-lived than ever before. But we should not succumb to complacency in the face of this astonishing progress. That we have achieved so much, and so quickly, should inspire us to address the suffering and injustices that remain. We have also seen substantial improvements in our moral thinking.31 One of the clearest trends is toward the gradual expansion of the moral community, with the recognition of the rights of women, children, the poor, foreigners and ethnic or religious minorities. We have also seen a marked shift away from violence as a morally acceptable part of society.32 And in the last sixty years we have added the environment and the welfare of animals to our standard picture of morality. These social changes did not come naturally with prosperity. They were secured by reformers and activists, motivated by the belief that we can—and must—improve. We still have far to go before we are living up to these new ideals, and our progress can be painfully slow, but looking back even just one or two centuries shows how far we have come. Of course, there have been many setbacks and exceptions. The path has been tumultuous, things have often become better in some ways while worse in others, and there is certainly a danger of choosing selectively from history to create a simple narrative of improvement from a barbarous past to a glorious present. Yet at the largest scales of human history, where we see not the rise and fall of each empire, but the changing face of human civilization across the entire globe, the trends toward progress are clear.33 It can be hard to believe such trends, when it so often feels like everything is collapsing around us. In part this skepticism comes from our everyday experience of our own lives or communities over a timespan of years—a scale where downs are almost as likely as ups. It might also come from our tendency to focus more on bad news than good and on threats rather than opportunities: heuristics that are useful for directing our actions, but which misfire when attempting to objectively assess the balance of bad and good.34 When we try to overcome these distortions, looking for global indicators of the quality of our lives that are as objective as possible, it is very difficult to avoid seeing significant improvement from century to century. And these trends should not surprise us. Every day we are the beneficiaries of uncountable innovations made by people over hundreds of thousands of years. Innovations in technology, mathematics, language, institutions, culture, art; the ideas of the hundred billion people who came before us, and shaped almost every facet of the modern world.35 This is a stunning inheritance. No wonder, then, that our lives are better for it.

#### No transition---centuries of history prove societies can’t and won’t shift fast enough.

Rogelio Luque-Lora 21, MSci in History and Philosophy of Science from the University of Cambridge, M.A. in Natural Sciences from the University of Cambridge, “Engaging imaginaries, rejecting utopias: The case for technological progress and political realism to sustain material wellbeing,” Political Geography, Vol. 86, 02-21-2021, https://doi.org/10.1016/j.polgeo.2021.102358

Gómez-Baggethun is right to suspect that the modern myth of progress has theological origins. In fact, it is largely a product of the Christian conception of human history as an inherently meaningful story that has salvation as its end point. Without the belief that there is a teleological coherence to the history of humanity, and that salvation (whether the Christian version of the Kingdom of God on Earth, or the humanist faith in an emancipated and harmonious future) is an earthly event that lies ahead of the present, the idea of progress is groundless. In cultures that are not historically steeped in Western monotheism, the belief that humanity is inexorably marching toward a better state of affairs is largely absent (Gray, 2007, pp. 29–39). Where Gómez-Baggethun's reading of progress misses the mark is in limiting its scope to technology. The central tenet of modern belief in progress is that ethics and politics advance in line with the growth of knowledge, so that as scientific and technological understandings accrue, so too do humans increasingly learn to arrange their societies in rational and ethical ways (Gray, 2002). Contrary to Gómez-Baggethun's assertions, technological progress is a fact. Throughout their history, humans have increasingly learnt to manipulate the environment around them to serve their interests. The reason for this is that scientific knowledge grows cumulatively: past discoveries are not necessarily lost with the advent of new knowledge, but rather can be built upon or thrown into question by these new understandings. In contrast, any historical ‘gains’ in politics and ethics (placed between inverted commas to reflect that such evaluations will depend on the particular values of each generation) are easily undone by regime and cultural changes. It is progress in ethics and politics, not in technology, that is a myth. Viewed in this light, Gómez-Baggethun's assertion that utopias are concrete and plausible if they are scientifically informed, while saying nothing about how assumed radical social change may come about, begs the question of why scientific plausibility is given categorical priority over social and political feasibility. Gómez-Baggethun's analysis fits within a broader tradition; the belief that humans can radically remake the world at will commonly presents itself as having the authority of science (Gray, 2007, p. 20). An historically and politically informed view may well reveal degrowth to be utopian, in the true sense of being a projection into the future of an unrealisable society (Gray, 2007, pp. 20–29). There are no historical examples of humans showing the intelligence or will to voluntarily restructure their societies in the measure that would be required for a global shift to degrowth, let alone at the speed required to avert the climatic changes and ecological collapses predicted for this century. Further complicating things for advocates of degrowth, no contemporary democratic state has been able to survive without sustaining economic growth over the medium and long terms (Gray, 1992, p. 83). Recently, Gray (2019) has written, The trouble is that Green proposals involve a drop in material living standards for large numbers of people, and any such fall will be unsustainable in political terms. Macron's tax on petrol fuelled the rise of the gilets jaunes in France, while the principal beneficiary of Hilary Clinton's election pledge to shut down the coal industry has been Donald Trump. When Green policies impose heavy costs on the poor and the working majority – as they often do – the result is a popular blowback. Gómez-Baggethun's mistake here is to think that degrowth is feasible simply because it is desirable. In political terms, the evidence suggests that it is unfeasible. To resist these facts and to consider degrowth to be the only realistic imaginary reflects a pseudo-religious faith in humans' willingness and ability to convert to an ecological worldview and to radically adjust their institutions accordingly.

#### Capitalism’s not monolithic---regs solve their impacts and preserve positives.

Laura Tyson and Lenny Mendonca 21. Laura Tyson, former chair of the US President's Council of Economic Advisers, is Professor of the Graduate School at the Haas School of Business and Chair of the Blum Center Board of Trustees at the University of California, Berkeley. Lenny Mendonca, Senior Partner Emeritus at McKinsey & Company, is a former chief economic and business adviser to Governor Gavin Newsom of California and chair of the California High-Speed Rail Authority. "Capitalism We Can Believe In". Project Syndicate. 1-15-2021. https://www.project-syndicate.org/commentary/what-to-do-about-declining-trust-in-us-capitalism-by-laura-tyson-and-lenny-mendonca-2021-01

Growing distrust of capitalism follows from its failure to address major socioeconomic challenges, not least climate change and inequalities in opportunity, income, and wealth. While private incentives under capitalism are good at stimulating efficiency, growth, and innovation, they also generate unequal income and wealth distributions (even in a context of intense competition), often at odds with social norms of fairness. Moreover, capitalist systems tend to underinvest in public goods like education, health care, and social insurance – all critical factors in the pandemic response – while also discounting negative externalities such as greenhouse-gas emissions.

These shortcomings of capitalism are predictable, but they are remediable through public policies and institutions. Tax and transfer policies and minimum wages can reduce income and wealth disparities, just as public investment in education, training, and health care can enhance opportunity by providing access to good jobs and fostering the creation of new enterprises. Likewise, a price on carbon dioxide and regulations limiting or banning carbon emissions can help the world avert the existential threat of climate change.

Critics of capitalism often miss (or choose to ignore) that there is no single canonical model. Europe’s various “social market” models differ significantly from the neoliberal variant in the US. And even within the US, there are important differences between states and localities.

Some of these distinctions have been highlighted in the responses to the COVID-19 pandemic and recession. All advanced economies have deployed unprecedented levels of fiscal and monetary stimulus in the face of “K-shaped” or “dual” recessions in which lower-wage workers have suffered disproportionately more than other cohorts. Unlike the US, Germany and several other European countries have deployed measures specifically designed to keep as many workers as possible in their jobs. Because these countries have generous social insurance and benefits, including sick leave and family leave, workers and their families have been able to cope with both COVID-19 and sudden drops in their incomes.

Differences in national health-care models have also become more apparent. Unlike European capitalist systems that provide universal coverage, 14.5% of America’s non-elderly population (ages 18-64) remains uninsured. Moreover, owing to America’s heavy reliance on employer-based insurance, the pandemic has pushed at least 15 million more workers at least temporarily into the uninsured pool.

With their strong public-health systems, many European countries were also better equipped to carry out widespread testing and vaccine distribution. The US, meanwhile, has utterly failed to contain the virus, and is now delegating the vaccination campaign to under-resourced state and local authorities.

In another contrast with the US, Europe has dedicated about one-third of its massive stimulus program to investments aligned with its commitment to achieve carbon neutrality by mid-century. America’s federal stimulus measures have been silent on climate with few conditions of any kind.

Within the US, individual states’ responses to the COVID-19 crisis reflect different variants of capitalism. In California, Governor Gavin Newsom’s recent 2021-22 budget proposal reveals some distinctive features. In terms of health-care coverage, California remains a national leader with a Medicaid program covering more than 13 million people. Despite the pandemic-induced recession, the state is increasing its minimum wage to $14 per hour in 2021, on track to realize the target of $15 per hour in 2022 for all businesses employing 26 or more workers; many municipalities, including Los Angeles and San Francisco, have already achieved or exceeded the $15 target. (On January 1, 2021, 20 other states also raised their minimum wages, whereas the US federal minimum wage has remained unchanged at $7.25 per hour since 2009.)

California has also expanded coverage of its Earned Income Tax Credit (EITC) and Young Child Tax Credit to include undocumented workers who are otherwise denied the benefits of federal stimulus packages. Together, these tax credits applied to 3.6 million California households in 2020, adding $1 billion in total income. The state also passed new legislation significantly expanding unpaid family-leave rights. Employers with as few as five employees now must provide this option as well as more time for paid sick leave for workers forced to self-isolate or quarantine as a result of COVID-19 exposure or diagnosis.

Looking ahead, Newsom has proposed an additional $600 one-time cash payment to all taxpayers who are eligible for the state’s EITC in 2021. His proposed 2021-22 budget also earmarks $372 million to expedite the distribution of COVID-19 vaccines, and includes $4.5 billion for programs to drive economic growth and job creation once restrictions on normal activities have been lifted. These programs include $575 million in grants to small businesses and nonprofits, in addition to the $500 million for such grants implemented in late 2020 amid forced business closures. The proposal also allocates up to an additional $50 million for the California Rebuilding Fund, a public-private partnership, to support up to an additional $125 million of low-interest loans to underserved small businesses throughout the state.

California’s distinctive approach to market capitalism also emphasizes climate sustainability, using both carbon pricing and efficiency standards to achieve ambitious decarbonization targets. Under a 2018 state law, 60% of electricity must come from renewable resources by 2030, and 100% by 2045. California runs the world’s fourth-largest cap-and-trade system and will be setting even lower caps (and thus a higher carbon price) next month. In September 2020, Newsom announced an executive order requiring that zero-emission vehicles account for 100% of new car sales by 2035. His proposed budget seeks $1.5 billion to accelerate the infrastructure investment needed to achieve this goal.

President-elect Joe Biden has just announced a $1.9 trillion emergency rescue plan to counter the pandemic’s surge and provide substantial relief to workers, families, small businesses, and state and local governments. Prompt congressional passage of this plan is a critical first step in the renovation of America’s outdated neoliberal version of capitalism. As the economy recovers from the deep and uneven COVID-19 recession, the US must “build back better” by strengthening its social safety net, increasing public investment in education, health care, and other public goods, and rejoining the global charge against climate change. Lessons from the more successful variants of market capitalism in Europe and California point the way forward.

#### The barrier to climate progress is political, not material---the transition would be so politically disastrous that it’d irreversibly set back political progress against climate change. Speed is key, so only existing dematerialization and renewables can solve in time.

Klein 8/31/21, Opinion Writer at the New York Times, former Founder of Vox, and author of “Why We’re Polarized” (Ezra, “Transcript: Ezra Klein Answers Listener Questions” from ‘The Ezra Klein Show’ podcast, *The New York Times*, <https://www.nytimes.com/2021/08/31/podcasts/transcript-ezra-klein-ask-me-anything.html>, Accessed 09-1-2021)

But now let me talk about degrowth more in the terms of it is a direct political project, which is as an answer to climate change. I would cut this into a few pieces. Is degrowth necessary for addressing climate change? Is it the fastest way to address climate change? And is it desirable? It has to be at least one of those things to be the strategy you’d want to take.

And I don’t think it is. Let’s start with necessary. Many countries in Europe, even the United States, are growing while reducing their carbon footprint. Now, you could say they’re not doing so fast enough depending on the country. But they could all do so much faster if there was enough political will to deploy more renewable technology, to tax carbon, to do a bunch of things that we have not been able to pass. So it is clearly true that we can decouple growth and energy usage.

Hickel, to be fair, will say that that may be true. But given the speed at which we need to act, we can’t just be deploying renewable energy technology. It would also help the situation if we stopped using as much through material consumption. That is, I think, conceptually true and politically false.

I mean, let’s just state that speed is, first and foremost, a political problem. There is a delta between where we are right now in terms of what we are doing on climate change and where we could be. That delta is big, and that delta gets bigger every year because it gets harder every year. And the time we have to act before we start getting some of the really truly catastrophic feedback loops in play is shortening. So you’re now talking here about the speed at which you can move politics.

So for something to be faster, it doesn’t just need to be faster if you implemented it. It needs to be something you can implement such it accelerates the politics of radical climate action. And that’s where I think degrowth completely falls apart. And I have tried to look for the answer people give on this, and I’ve never found one that is convincing.

So again, I’ll quote Hickel on this: “Degrowth has a discriminating approach to reducing economic activity. It seeks to scale down ecologically destructive and socially less necessary production, i.e., the production of S.U.V.s, arms, beef, private transportation, advertising and planned obsolescence” — by which he means there, the fact that expiration dates are built into a lot of our electronics — “while expanding socially important sectors like health care, education, care and conviviality.”

And I’d urge people to think about that for a minute. I mean, you can listen to that and you will assume correctly that I am sympathetic to the idea that a lot of those goods are not great. I’m a vegan. I don’t eat beef. I would like nobody else to eat beef.

I think that if the political demand of the climate movement becomes you don’t get to eat beef, you will set climate politics back so far, so fast, it would be disastrous. Same thing with S.U.V.s. I don’t like S.U.V.s. I don’t drive one. But if you are telling people in rich countries that the climate movement is for them not having the cars they want to have, you are just going to lose. You are going to lose fast.

We watched this happen for years before Elon Musk and some others began inventing cars that were both electrified and were actually cool cars. You weren’t going to get everybody in a Prius. You might, over time, get them into the post-Tesla generations of electronic vehicles.

This is where the politics of it for me fall apart. I’d at least like to see some empirical evidence for the claim that degrowthers are right, and that their appeal will speed the politics of doing hard things on climate change. Because I think it will do the opposite. And I don’t see politicians winning in the countries they would need to win on anything like this platform. Quite the contrary.

I watched the most effective attack against Joe Biden’s climate policies. It dominated the news for a day or two. It was Fox News just making up — just completely making up — a false claim that Biden was going to limit or restrict red meat.

ANNIE GALVIN: Right. [LAUGHS]

EZRA KLEIN: So my worry with degrowth is that it is trying to take the politics out of politics. It is attacking the flaws of the current strategy as not moving fast enough when the impediments are political, but then not accepting the impediments to its own political path forward.

I will say, because I think it’ll be weird to people if I don’t mention this, that there is the big problem, of course, that the rising generation of emissions is coming from China, from India. I think it’s something like ⅔ of emissions are now from middle income countries. That is only going up.

Hickel and other degrowthers will say that, yes, the point of this is that the rich countries, which have already used more than their fair share of the carbon budget, should cut their carbon usage so poor countries can grow. I cannot imagine how you are going to enforce this as a political and economic planning regime. How you will get rich countries to agree to do less so poor countries can have more. I mean, look at what has happened with vaccine hoarding.

I don’t want to say that this isn’t a good moral weight on the conversation or, in the long term, a good push for people to think about different ways of having growth, different ways of human flourishing. But the entirety — as the degrowth people will agree — the entire question of the climate change conversation is speed. And I just don’t see the argument for degrowth as being anything but an extraordinarily slower way of approaching the politics, probably counterproductive compared to what we’re doing, which is I think you can make tremendous strides on climate change by deploying renewable energy technologies and giving people the opportunity to have a more materially fulfilling life atop those technologies.

And by the way, when that happens in rich countries, as we have seen, it ends up subsidizing these renewable energy technological advances for poorer countries. So it is a fact that Germany and other countries did so much to subsidize solar for themselves, it has also made it possible for countries like China and India to have such a rapid advance in solar technology that it’s affordable for them to do a lot of their growth on that platform.

So I also think there are cross-subsidies in rich countries trying to maintain growth renewable energy deployment that end up helping poor countries change what they’re doing in a useful way, too. So that’s my take on degrowth. But I understand its appeal. I just don’t understand its politics.