# 1NC

### 1NC – OFF

#### Interpretation: the aff must disclose their case 30 minutes before the round

#### Violation – they didn’t

Graphical user interface, text, application, chat or text message

Description automatically generated

#### Standards:

**1] Reciprocity- Absent disclosure of broken positions we go into the round in the dark since we don’t know what generic arguments you go for commonly and what kinds of specific positions you have read which means we lose a lot of pre round and pre-tournament prep- but you can prep us out easily since I disclose everything which means you are at a structural advantage going into the round.**

#### 2] Quality engagement – aff disclosure discourages cheap shot affs. If the aff isn't inherent or easily defeated by 20 minutes of research, the case should lose—this will answer the 1ar's claim about innovation—with 30 minutes of prep, there's still an incentive to find a new strategic, well justified aff, but no incentive to cut a horrible, incoherent aff that the neg can't check against the broader literature.

#### 3] Norm setting outweighs in round abuse – a. longevity b. constitutive of theory

#### Every reason fairness is a voter is a reason you can’t read substantive take-outs to the shell since it precludes your evaluation of them.

#### Edu- funded ny schools

#### 1] No RVIs: a. Chills theory – If people know they might lose for reading theory, it will disincentivize them. b. You don’t get to win by being fair. c. Theory Baiting – good theory debaters will bait people into reading theory against certain cases 2] Use competing interpretations: a. Reasonability causes a race to the bottom with testing the limit of it b. Finding the best possible interp makes debate have higher quality arguments c. Judge intervention shouldn’t be allowed bc it produces bias 3] Drop the debater: Drop the debater for being abusive – we can’t restart the round from the 1AC and I’m skewed for the rest of the debate.

### 1NC – OFF

The aff DOES fiat a revolution that destroys ip so the consequence of the aff links to this disad

#### Strong current IP guarantees causes massive Pharma innovation.

* Answers Evergreening/Me-Too Drugs

Stevens and Ezell 20 Philip Stevens and Stephen Ezell 2-3-2020 "Delinkage Debunked: Why Replacing Patents With Prizes for Drug Development Won’t Work" <https://itif.org/publications/2020/02/03/delinkage-debunked-why-replacing-patents-prizes-drug-development-wont-work> (Philip founded Geneva Network in 2015. His main research interests are the intersection of intellectual property, trade, and health policy. Formerly he was an official at the World Intellectual Property Organization (WIPO) in Geneva, where he worked in its Global Challenges Division on a range of IP and health issues. Prior to his time with WIPO, Philip worked as director of policy for International Policy Network, a UK-based think tank, as well as holding research positions with the Adam Smith Institute and Reform, both in London. He has also worked as a political risk consultant and a management consultant. He is a regular columnist in a wide range of international newspapers and has published a number of academic studies. He holds degrees from the London School of Economics and Durham University (UK).)//Elmer

The **Current System** Has **Produced a Tremendous Amount of Life-Sciences Innovation** The frontier for biomedical innovation is seemingly limitless, and the challenges remain numerous—whether it comes to diseases that afflict millions, such as cancer or malaria, or the estimated 7,000 rare diseases that afflict fewer than 200,000 patients.24 And while certainly citizens in developed and developing nations confront differing health challenges, those challenges are increasingly converging. For instance, as of this year, analysts expect that **noncommunicable** diseases such as cardiovascular disease and diabetes will account for 70 percent of natural fatalities **in developing countries**.25 Citizens of low- and middle-income countries bear 80 percent of the world’s death burden from cardiovascular disease.26 Forty-six percent of Africans over 25 suffer from hypertension, more than anywhere else in the world. Similarly, 85 percent of the disease burden of cervical cancer is borne by individuals living in low- and middle-income countries.27 To develop treatments or cures for these conditions, novel biomedical innovation **will be needed from everywhere**. Yet tremendous progress has been made in recent decades. To tackle these challenges, the global pharmaceutical industry invested over **$1.36 trillion in R&D** in the decade from 2007 to 2016—and it’s expected that annual R&D investment by the global pharmaceutical industry will reach $181 billion by 2022.28 In no small part due to that investment, **943 new active substances have been introduced** globally over the prior 25 years.29 The U.S. Food and Drug Administration (FDA) has approved more than **500 new medicines since 2000** alone. And these medicines are getting to more individuals: Global medicine use **in 2020 will reach 4.5 trillion doses**, up 24 percent from 2015.30 Moreover, there are an estimated 7,000 new medicines under development globally (about half of them in the United States), with 74 percent being potentially first in class, meaning they use a new and unique mechanism of action for treating a medical condition.31 In the United States, over 85 percent of all drugs sold are generics (only 10 percent of U.S. prescriptions are filled by brand-name drugs).32 And while some assert that biotechnology companies focus too often on “me-too” drugs that compete with other treatments already on the market, the reality is many drugs currently under development are meant to tackle some of the **world’s most intractable diseases**, **including cancer and Alzheimer’s**.33 Moreover, such arguments miss that many of the drugs developed in recent years have in fact been first of their kind. For instance, in 2014, the FDA approved **41 new medicines** (at that point, the most since 1996) many of which were first-in-class medicines.34 In that year, 28 of the 41 drugs approved were considered biologic or specialty agents, and 41 percent of medicines approved were intended to treat rare diseases.35 Yet even when a new drug isn’t first of its kind, it can still produce benefits for patients, both through **enhanced clinical efficacy** (for instance, taking the treatment as a pill rather than an injection, with a superior dosing regimen, **or better treatment** for some individuals who don’t respond well to the original drug) and by generating competition that exerts downward price pressures. For example, a patient needing a cholesterol drug has a host of statins from which to choose, which is important because some statins produce harmful side effects for some patients. Similarly, patients with osteoporosis can choose from Actonel, Boniva, or Fosomax. Or take for example Hepatitis C, which until recently was an incurable disease eventually requiring a liver transplant for many patients. In 2013, a revolutionary new treatment called Solvadi was released that boosted cure rates to 90 percent. This was followed in 2014 by an improved treatment called Harvoni, which cures the Hepatitis C variant left untouched by Solvadi. Since then, an astonishing six new treatments for the disease have received FDA approval, opening up a wide range of treatment options that take into account patients’ liver and kidney status, co-infections, potential drug interactions, previous treatment failures, and the genotype of HCV virus.36 “If you have to have Hepatitis C, now is the time to have it,” as Douglas Dieterich, a liver specialist at the Icahn School of Medicine at Mount Sinai Hospital in New York, told the Financial Times. “We have these marvellous drugs we can treat you with right now, without side effects,” he added. “And this time next year, we’ll have another round of drugs available.”37 Moreover, the financial potential of this new product category has led to multiple competing products entering the market in quick succession, in turn placing downward pressure on prices.38 As Geoffrey Dusheiko and Charles Gore write in The Lancet, “The market has done its work for HCV treatments: after competing antiviral regimens entered the market, competition and innovative price negotiations have driven costs down from the initially high list prices in developed countries.”39 As noted previously, opponents of the current market- and IP-based system contend patents enable their holders to exploit a (temporary) market monopoly by inflating prices many multiples beyond the marginal cost of production. But rather than a conventional neoclassical analysis, an analysis based on “innovation economics” finds it is exactly this “distortion” that is required for innovation to progress. As William Baumol has pointed out, “Prices above marginal costs and price discrimination become the norm rather than the exception because … without such deviations from behaviour in the perfectly competitive model, innovation outlays and other unavoidable and repeated sunk outlays cannot be recouped.”40 Or, as the U.S. Congressional Office of Technology Assessment found, “Pharmaceutical R&D is a risky investment; therefore, high financial returns are necessary **to induce companies to invest** in researching new chemical entities.”41 This is also why, in 2018, the U.S. Congressional Budget Office estimated that because of high failure rates, biopharmaceutical **companies would need to earn a 61.8 percent rate of return on their successful new drug R&D projects in order to match a 4.8 percent after-tax rate of return on their investment**s.42 Indeed, **it’s the ability to recoup fixed costs, not just marginal** costs, through mechanisms such as patent protection that lies at the heart of all innovation-based industries and indeed all innovation and related economic progress. If companies could not find a way to pay for their R&D costs, and could only charge for the costs of producing the compound, **there would be no new drugs developed**, just as there would be no new products developed in any industry. Innovating in the life sciences remains expensive, risky, difficult, and uncertain. Just 1 in 5,000 drug candidates make it all the way from discovery to market.43 A 2018 study by the Deloitte Center for Health Solutions, “Unlocking R&D productivity: Measuring the return from pharmaceutical innovation 2018,” found that “the average cost to develop an asset [an innovative life-sciences drug] including the cost of failure, has increased in six out of eight years,” and that the average cost to create a new drug has risen to $2.8 billion.44 Related research has found the development of new drugs requires years of painstaking, risky, and expensive research that, for a new pharmaceutical compound, takes an average of 11.5 to 15 years of research, development, and clinical trials, at a cost of $1.7 billion to $**3.2 billion**.45 IP rights—including patents, copyrights, and data exclusivity protections—give innovators, whether in the life sciences or other sectors, the **confidence** to undertake the risky and expensive process of innovation, secure in the knowledge they’ll be able to capture a share of the gains from their efforts. And these gains are often only a small fraction of the true value created. For instance, Yale University economist William Nordhaus estimated inventors capture just 4 percent of the total social gains from their innovations; the rest spill over to other companies and society as a whole.46 Without adequate IP protection, private investors would never find it viable to fund advanced research because lower-cost copiers would be in a position to undercut the legitimate prices (and profits) of innovators, even while still generating substantial profits on their own.47 As the report “Wealth, Health and International Trade in the 21st Century” concludes, “Conferring robust intellectual property rights is, in the pharmaceutical and other technological-development contexts, **in the global public’s long-term interests.** Without adequate mechanisms for directly and indirectly securing the private and public funding of medicines and vaccines, research and development communities across the world will lose future benefits that would far outweigh the development costs involved.”48 Put simply, the current market- and IP-based life-sciences innovation system is producing life-changing biomedical innovation. As Jack Scannell, a senior fellow at Oxford University’s Center for the Advancement of Sustainable Medical Innovation has explained, “I would guess that one can buy today, at rock bottom generic prices, a set of small-molecule drugs that has greater medical utility than the entire set available to anyone, anywhere, at any price in 1995.” He continued, “Nearly all the generic medicine chest was created by firms who invested in R&D to win future profits that they tried pretty hard to maximize; short-term financial gain building a long-term common good.”49 For example, on September 14, 2017, the FDA approved Mvasi, the first biosimilar for Roche’s Avastin, a breakthrough anticancer drug when it came out in the mid-1990s for lung, cervical, and colorectal cancer.50 In other words, a medicine to treat forms of cancer that barely existed 20 years ago is now available as a generic drug today. It’s this dynamic that enables us to imagine a situation wherein drugs to treat diseases that aren’t available anywhere at any price today (for instance, treatments for Alzheimer’s or Parkinson’s) might be available as generics in 20 years. But that will only be the case if we preserve (and improve where possible) a life-sciences innovation system that is generally working. The current system does not require wholesale replacement by a prize-based system that—notwithstanding a meaningful success here or there—has produced nowhere near a similar level of novel biomedical innovation.

#### **Reducing IP protections chills future investment – even the perception of wavering commitment scares off companies.**

Grabowski et al. ’15 (Harry; Professor Emeritus of Economics at Duke, and a specialist in the intersection of the pharmaceutical industry and government regulation of business; February 2015; “The Roles Of Patents And Research And Development Incentives In Biopharmaceutical Innovation”; Health Affairs; <https://www.healthaffairs.org/doi/10.1377/hlthaff.2014.1047>; Accessed: 8-31-2021; AU)

Patents and other forms of **intellectual property** **protection** play **essential roles** in encouraging innovation in biopharmaceuticals. As part of the “21st Century Cures” initiative, Congress is reviewing the policy mechanisms designed to accelerate the discovery, development, and delivery of new treatments. Debate continues about how best to balance patent and intellectual property incentives to encourage innovation, on the one hand, and generic utilization and price competition, on the other hand. We review the current framework for accomplishing these dual objectives and the important role of patents and regulatory exclusivity (together, the patent-based system), given the lengthy, costly, and risky biopharmaceutical research and development process. We summarize existing targeted incentives, such as for orphan drugs and neglected diseases, and we consider the pros and cons of proposed voluntary or mandatory alternatives to the patent-based system, such as prizes and government research and development contracting. We conclude that patents and regulatory exclusivity provisions are likely to remain the core approach to providing incentives for biopharmaceutical research and development. However, prizes and other voluntary supplements could play a useful role in addressing unmet needs and gaps in specific circumstances. Technological innovation is widely recognized as a key determinant of economic and public health progress. 1,2 Patents and other forms of intellectual property protection are generally thought to play essential roles in encouraging innovation in biopharmaceuticals. This is because the process of developing a new drug and bringing it to market is **long, costly, and risky**, and the costs of imitation are low. After a new drug has been approved and is being marketed, its **patents protect it** from competition from chemically identical entrants (or entrants infringing on other patents) for a period of time. **For firms** to have an **incentive** to **continue to invest** in innovative development efforts, they must have an **expectation** that they can **charge enough** during this period to **recoup** costs and make a profit. After a drug’s patent or patents expire, **generic rivals** can enter the market at **greatly reduced development cost** and prices, providing added consumer benefit but **eroding** the **innovator drug** company’s revenues. The Drug Price Competition and Patent Term Restoration Act of 1984 (commonly known as the Hatch-Waxman Act) was designed to balance innovation incentives and generic price competition for new drugs (generally small-molecule chemical drugs, with some large-molecule biologic exceptions) by extending the period of a drug’s marketing exclusivity while providing a regulatory framework for generic drug approval. This framework was later changed to encompass so-called biosimilars for large-molecule (biologic) drugs through the separate Biologics Price Competition and Innovation Act of 2009. Other measures have been enacted to provide research and development (R&D) incentives for antibiotics and drugs to treat orphan diseases and neglected tropical diseases. Discussion continues about whether current innovation incentives are optimal or even adequate, given evolving public health needs and scientific knowledge. For instance, the House Energy and Commerce Committee recently embarked on the “21st Century Cures” initiative, 3 following earlier recommendations by the President’s Council of Advisors on Science and Technology on responding to challenges in “propelling innovation in drug discovery, development, and evaluation.” 4 In this context, we discuss the importance of patents and other forms of intellectual property protection to biopharmaceutical innovation, given the unique economic characteristics of drug research and development. We also review the R&D incentives that complement patents in certain circumstances. Finally, we consider the pros and cons of selected voluntary (“opt-in”) or mandatory alternatives to the current patent- and regulatory exclusivity–based system (such as prizes or government-contracted drug development) and whether they could better achieve the dual goals of innovation incentives and price competition. The essential rationale for patent protection for biopharmaceuticals is that long-term benefits in the form of continued future innovation by pioneer or brand-name drug manufacturers outweigh the relatively short-term restrictions on imitative cost competition associated with market exclusivity. Regardless, the entry of other branded agents remains an important source of therapeutic competition during the patent term. Several economic characteristics make patents and intellectual property protection **particularly important** to **innovation incentives** for the biopharmaceutical industry. 5 The R&D process often takes more than a decade to complete, and according to a recent analysis by Joseph DiMasi and colleagues, per new drug approval (including failed attempts), it involves more than a **billion** dollars in out-of-pocket costs. 6 Only approximately one in eight drug candidates survive clinical testing. 6 As a result of the high risks of failure and the high costs, research and development must be funded by the **few successful, on-market products** (the top quintile of marketed products provide the dominant share of R&D returns). 7,8 Once a new drug’s patent term and any regulatory exclusivity provisions have expired, competing manufacturers are allowed to sell generic equivalents that require the investment of only several million dollars and that have a high likelihood of commercial success. **Absent intellectual property protections** that allow marketing exclusivity, innovative firms would be **unlikely** to make the costly and risky investments needed to bring a new drug to market. Patents confer the right to exclude competitors for a limited time within a given scope, as defined by patent claims. However, **they do not guarantee demand**, nor do they prevent competition from nonidentical drugs that treat the same diseases and fall outside the protection of the patents. New products may enter the same therapeutic class with common mechanisms of action but different molecular structures (for example, different statins) or with differing mechanisms of action (such as calcium channel blockers and angiotensin receptor blockers). 9 Joseph DiMasi and Laura Faden have found that the time between a first-in-class new drug and subsequent new drugs in the same therapeutic class has been dramatically reduced, from a median of 10.2 years in the 1970s to 2.5 years in the early 2000s. 10 Drugs in the same class compete through quality and price for preferred placement on drug formularies and physicians’ choices for patient treatment. Patents play an **essential role** in the economic “ecosystem” of **discovery and investment** that has developed since the 1980s. Hundreds of start-up firms, often backed by venture capital, have been launched, and a robust innovation market has emerged. 11 The value of these development-stage firms is largely determined by their proprietary technologies and the candidate drugs they have in development. As a result, the **strength of intellectual property protection** plays a **key role** in funding and partnership opportunities for such firms. Universities also play a key role in the R&D ecosystem because they conduct basic biomedical research supported by sponsored research grants from the National Institutes of Health (NIH) and the National Science Foundation (NSF). The Patent and Trademark Law Amendments Act of 1980 (commonly known as the Bayh-Dole Act) gave universities the right to retain title to patents and discoveries made through federally funded research. This change was designed to encourage technology transfer through industry licensing and the creation of start-up companies. Universities received only 390 patents for their discoveries in 1980, 12 compared to 4,296 in 2011, with biotechnology and pharmaceuticals being the top two technology areas (accounting for 36 percent of all university patent awards in 2012). 13

#### **R&D’s key to innovation – otherwise, future pandemics.**

Marjanovic et al. ’20 (Sonja; Ph.D. at the University of Cambridge; May 2020; “How to Best Enable Pharma Innovation Beyond the COVID-19 Crisis”; RAND; <https://www.rand.org/pubs/perspectives/PEA407-1.html>; Accessed: 8-31-2021; AU)

As key actors in the healthcare innovation landscape, pharmaceutical and life sciences companies have been called on to **develop** medicines, vaccines and diagnostics for pressing public health challenges. The COVID-19 crisis is one such challenge, but there are many others. For example, MERS, SARS, Ebola, Zika and avian and swine flu are also **infectious diseases** that represent public health threats. Infectious agents such as anthrax, smallpox and tularemia could present threats in a **bioterrorism context**.1 The general threat to public health that is posed by **antimicrobial resistance** is also well-recognised as an area **in need of pharmaceutical innovation**. Innovating in response to these challenges does not always align well with pharmaceutical industry commercial models, shareholder expectations and competition within the industry. However, the expertise, networks and infrastructure that industry has within its reach, as well as public expectations and the moral imperative, make pharmaceutical companies and the wider life sciences sector an **indispensable partner** in the search for solutions that save lives. This perspective argues for the need to establish more sustainable and scalable ways of incentivising pharmaceutical innovation in response to infectious disease threats to public health. It considers both past and current examples of efforts to mobilise pharmaceutical innovation in high commercial risk areas, including in the context of current efforts to respond to the COVID-19 pandemic. In global pandemic crises like COVID-19, the urgency and scale of the crisis – as well as the spotlight placed on pharmaceutical companies – mean that contributing to the search for effective medicines, vaccines or diagnostics is **essential** for socially responsible companies in the sector. 2 It is therefore unsurprising that we are seeing industry-wide efforts unfold at unprecedented scale and pace. Whereas there is always scope for more activity, industry is currently **contributing in a variety of ways**. Examples include pharmaceutical companies donating existing compounds to assess their utility in the fight against COVID19; screening existing compound libraries in-house or with partners to see if they can be repurposed; accelerating trials for potentially effective medicine or vaccine candidates; and in some cases rapidly accelerating in-house research and development to discover new treatments or vaccine agents and develop diagnostics tests.3,4 Pharmaceutical companies are collaborating with each other in some of these efforts and participating in global R&D partnerships (such as the Innovative Medicines Initiative effort to accelerate the development of potential therapies for COVID-19) and supporting national efforts to expand diagnosis and testing capacity and ensure affordable and ready access to potential solutions.3,5,6 The **primary purpose** of such innovation is to benefit patients and wider population health. Although there are also reputational benefits from involvement that can be realised across the industry, there are likely to be relatively few companies that are ‘commercial’ winners. Those who might gain substantial revenues will be under pressure not to be seen as profiting from the pandemic. In the United Kingdom for example, GSK has stated that it does not expect to profit from its COVID-19 related activities and that any gains will be invested in supporting research and long-term pandemic preparedness, as well as in developing products that would be affordable in the world’s poorest countries.7 Similarly, in the United States AbbVie has waived intellectual property rights for an existing combination product that is being tested for therapeutic potential against COVID-19, which would support affordability and allow for a supply of generics.8,9 Johnson & Johnson has stated that its potential vaccine – which is expected to begin trials – will be available on a not-for-profit basis during the pandemic.10 Pharma is mobilising substantial efforts to rise to the COVID-19 challenge at hand. However, we need to consider **how** pharmaceutical **innovation** for **responding to emerging** infectious diseases can best be enabled beyond the current crisis. Many **public health threats (including** those associated with other infectious diseases, bioterrorism agents and antimicrobial resistance) **are urgently in need** of pharmaceutical innovation, even if their impacts are not as visible to society as COVID-19 is in the immediate term. The pharmaceutical industry has responded to previous public health emergencies associated with infectious disease in recent times – for example those associated with Ebola and Zika outbreaks.11 However, it has done so to a lesser scale than for COVID-19 and with contributions from fewer companies. Similarly, levels of activity in response to the threat of antimicrobial resistance are still low.12 There are **important policy questions** as to whether – and how – industry could engage with such public health threats to an even greater extent under **improved innovation conditions.**

#### Evolving superbugs trigger extinction.

Srivatsa ’17 (Kadiyali; specialist in pediatric intensive and critical care medicine in the UK. Invented the bacterial identification tool ‘MAYA’; 1-12-2017; "Superbug Pandemics and How to Prevent Them", American Interest; https://www.the-american-interest.com/2017/01/12/superbug-pandemics-and-how-to-prevent-them/, Accessed: 8-31-2021; AU)

It is by now no secret that the human species is locked in a race of its own making with “superbugs.” Indeed, if popular science fiction is a measure of awareness, the theme has pervaded English-language literature from Michael Crichton’s 1969 Andromeda Strain all the way to Emily St. John Mandel’s 2014 Station Eleven and beyond. By a combination of massive inadvertence and what can only be called stupidity, we must now invent new and effective antibiotics faster than deadly bacteria evolve—and regrettably, they are rapidly doing so with our help. I do not exclude the possibility that bad actors might deliberately engineer deadly superbugs.1 But even if that does not happen, humanity faces an existential threat largely of its own making in the absence of malign intentions. As threats go, this one is entirely predictable. The concept of a “black swan,” Nassim Nicholas Taleb’s term for low-probability but high-impact events, has become widely known in recent years. Taleb did not invent the concept; he only gave it a catchy name to help mainly business executives who know little of statistics or probability. Many have embraced the “black swan” label the way children embrace holiday gifts, which are often bobbles of little value, except to them. But the threat of inadvertent pandemics is not a “black swan” because its probability is not low. If one likes catchy labels, it better fits the term “gray rhino,” which, explains Michele Wucker, is a high-probability, high-impact event that people manage to ignore anyway for a raft of social-psychological reasons.2 A pandemic is a quintessential gray rhino, for it is no longer a matter of if but of when it will challenge us—and of how prepared we are to deal with it when it happens. We have certainly been warned. The curse we have created was understood as a possibility from the very outset, when seventy years ago Sir Alexander Fleming, the discoverer of penicillin, predicted antibiotic resistance. When interviewed for a 2015 article, “The Most Predictable Disaster in the History of the Human Race,” Bill Gates pointed out that one of the costliest disasters of the 20th century, worse even than World War I, was the Spanish Flu pandemic of 1918-19. As the author of the article, Ezra Klein, put it: “No one can say we weren’t warned. And warned. And warned. A pandemic disease is the most predictable catastrophe in the history of the human race, if only because it has happened to the human race so many, many times before.”3 Even with effective new medicines, if we can devise them, we must contain outbreaks of bacterial disease fast, lest they get out of control. In other words, we have a social-organizational challenge before us as well as a strictly medical one. That means getting sufficient amounts of medicine into the right hands and in the right places, but it also means educating people and enabling them to communicate with each other to prevent any outbreak from spreading widely. Responsible governments and cooperative organizations have options in that regard, but even individuals can contribute something. To that end, as a medical doctor I have created a computer app that promises to be useful in that regard—of which more in a moment. But first let us review the situation, for while it has become well known to many people, there is a general resistance to acknowledging the severity and imminence of the danger. What Are the Problems? Bacteria are among the oldest living things on the planet. They are masters of survival and can be found everywhere. Billions of them live on and in every one of us, many of them helping our bodies to run smoothly and stay healthy. Most bacteria that are not helpful to us are at least harmless, but some are not. They invade our cells, spread quickly, and cause havoc that we refer to generically as disease. Millions of people used to die every year as a result of bacterial infections, until we developed antibiotics. These wonder drugs revolutionized medicine, but one can have too much of a good thing. Doctors have used antibiotics recklessly, prescribing them for just about everything, and in the process helped to create strains of bacteria that are resistant to the medicines we have. We even give antibiotics to cattle that are not sick and use them to fatten chickens. Companies large and small still mindlessly market antimicrobial products for hands and home, claiming that they kill bacteria and viruses. They do more harm than good because the low concentrations of antimicrobials that these products contain tend to kill friendly bacteria (not viruses at all), and so clear the way for the mass multiplication of surviving unfriendly bacteria. Perhaps even worse, hospitals have deployed antimicrobial products on an industrial scale for a long time now, the result being a sharp rise in iatrogenic bacterial illnesses. Overuse of antibiotics and commercial products containing them has helped superbugs to evolve. We now increasingly face microorganisms that cannot be killed by antibiotics, antifungals, antivirals, or any other chemical weapon we throw at them. Pandemics are the major risk we run as a result, but it is not the only one. Overuse of antibiotics by doctors, homemakers, and hospital managers could mean that, in the not-too-distant future, something as simple as a minor cut could again become life-threatening if it becomes infected. Few non-medical professionals are aware that antibiotics are the foundation on which nearly all of modern medicine rests. Cancer therapy, organ transplants, surgeries minor and major, and even childbirth all rely on antibiotics to prevent infections. If infections become untreatable we stand to lose most of the medical advances we have made over the past fifty years.

## Case

#### Vote neg on presumption –

#### A) Nothing spills over – there’s no connection between the ballot and chancing people’s attitudes. You encourage more teams to read framework which turns your offense and prevents the alteration of mindsets.

#### B) No warrant for a ballot – the competitive nature of debate coopts any ethical value of advocating the aff – winning rounds only makes it look like they just want to win which proves framework and means advocating by losing is more effective.

#### C) Debate – none of their evidence is specific to it – sets a high threshold for solvency and ignores how communicative norms operate.

#### D) Voting aff doesn’t access social change, but voting neg resolves our procedural impacts.

Ritter ‘13 (JD from U Texas Law (Michael J., “Overcoming The Fiction of “Social Change Through Debate”: What’s To Learn from 2pac’s Changes?,” National Journal of Speech and Debate, Vol. 2, Issue 1)

The structure of competitive interscholastic debate renders any message communicated in a debate round virtually **incapable of creating any social change**, either in the debate community or in general society. And to the extent that the fiction of social change through debate can be proven or disproven through empirical studies or surveys, academics instead have analyzed debate with **nonapplicable** rhetorical **theory** that **fails to account for the unique aspects** of competitive interscholastic debate. Rather, the current debate relating to activism and competitive interscholastic debate concerns the following: “What is the best model to promote social change?” But a more fundamental question that must be addressed first is: **“Can debate cause social change?”** Despite over two decades of opportunity to conduct and publish empirical studies or surveys, academic proponents of the fiction that debate can create social change have chosen **not to prove this fundamental assumption**, which—as this article argues—is **merely a fiction** that is **harmful in** most, if not **all, respects**. The position that competitive interscholastic debate can create social change is more properly characterized as a **fiction** than an argument. A fiction is an invented or fabricated idea purporting to be factual but is **not provable** by any human senses or rational thinking capability or is unproven by valid statistical studies. An argument, most basically, consists of a claim and some support for why the claim is true. If the support for the claim is false or its relation to the claim is illogical, then we can deduce that the particular argument does not help in ascertaining whether the claim is true. Interscholastic competitive debate is premised upon the assumption that debate is argumentation. Because fictions are necessarily not true or cannot be proven true by any means of argumentation, the competitive interscholastic debate community should be **incredibly critical** of those fictions and adopt them only if they promote the activity and its purposes.

### 1NC – Cap Good

Force them to indict every single one of our authors – cant just say all are bad without evidence

#### Growth is sustainable, physical limits aren’t absolute, AND resource use is declining now---degrowth unleashes global disaster

Bailey 18 [Ronald; February 16; 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, “Is Degrowth the Only Way to Save the World?” https://reason.com/2018/02/16/is-degrowth-the-only-way-to-save-the-wor; RP]

Unless us folks in rich countries drastically reduce our material living standards and distribute most of what we have to people living in poor countries, the world will come to an end. Or at least that's the stark conclusion of a study published earlier this month in the journal Nature Sustainability. The researchers who wrote it, led by the Leeds University ecological economist Dan O'Neill, think the way to prevent the apocalypse is "degrowth." Vice, pestilence, war, and "gigantic inevitable famine" were the planetary boundaries set on human population by the 18th-century economist Robert Thomas Malthus. The new study gussies up old-fashioned Malthusianism by devising a set of seven biophysical indicators of national environmental pressure, which they then link to 11 indicators of social outcomes. The aim of the exercise is to concoct a "safe and just space" for humanity. Using data from 2011, the researchers calculate that the annual per capita boundaries for the world's 7 billion people consist of the emission of 1.6 tons of carbon dioxide per year and the annual consumption of 0.9 kilograms of phosphorus, 8.9 kilograms of nitrogen, 574 cubic meters of water, 2.6 tons of biomass (crops and wood), plus the ecological services of 1.7 hectares of land and 7.2 tons of material per person. On the social side, meanwhile, the researchers say that life satisfaction in each country should exceed 6.5 on the 10-point Cantril scale, that healthy life expectancy should average at least 65 years, and that nutrition should be over 2,700 calories per day. At least 95 percent of each country's citizens must have access to good sanitation, earn more than $1.90 per day, and pass through secondary school. Ninety percent of citizens must have friends and family they can depend on. The threshold for democratic quality must exceed 0.8 on an index scale stretching from -1 to +1, while the threshold for equality is set at no higher than 70 on a Gini Index where 0 represents perfect equality and 100 implies perfect inequality. They set the threshold for percent of labor force employed at 94 percent. So how does the U.S. do with regard to their biophysical boundaries and social outcomes measures? We Americans transgress all seven of the biophysical boundaries. Carbon dioxide emissions stand at 21.2 tons per person; we each use an average of 7 kilograms of phosphorus, 59.1 kilograms of nitrogen, 611 cubic meters of water, and 3.7 tons of biomass; we rely on the ecological services of 6.8 hectares of land and 27.2 tons of material. Although the researchers urge us to move "beyond the pursuit of GDP growth to embrace new measures of progress," it is worth noting that U.S. GDP is $59,609 per capita. On the other hand, those transgressions have provided a pretty good life for Americans. For example, life satisfaction is 7.1; healthy life expectancy is 69.7 years; and democratic quality stands at 0.8 points. The only two social indicators we just missed on were employment (91 percent) and secondary education (94.7 percent). On the other hand, our hemisphere is home to one paragon of sustainability—Haiti. Haitians breach none of the researchers' biophysical boundaries. But the Caribbean country performs abysmally on all 11 social indicators. Life satisfaction scores at 4.8; healthy life expectancy is 52.3 years; and Haitians average 2,105 calories per day. The country tallies -0.9 on the democratic quality index. Haiti's GDP is $719 per capita. Other near-sustainability champions include Malawi, Nepal, Myanmar, and Nicaragua. All of them score dismally on the social indicators, and their GDPs per capita are $322, $799, $1,375, and $2,208, respectively. The country that currently comes closest to the researchers' ideal of remaining within its biophysical boundaries while sufficient social indicators is…Vietnam. For the record, Vietnam's per capita GDP is $2,306. "Countries with higher levels of life satisfaction and healthy life expectancy also tend to transgress more biophysical boundaries," the researchers note. A better way to put this relationship is that more wealth and technology tend to make people happier, healthier, and freer. O'Neill and his unhappy team fail drastically to understand how human ingenuity unleashed in markets is already well on the way toward making their supposed planetary boundaries irrelevant. Take carbon dioxide emissions: Supporters of renewable energy technologies say that their costs are already or will soon be lower than those of fossil fuels. Boosters of advanced nuclear reactors similarly argue that they can supply all of the carbon-free energy the world will need. There's a good chance that fleets of battery-powered self-driving vehicles will largely replace private cars and mass transit later in this century. Are we about to run out of phosphorous to fertilize our crops? Peak phosphorus is not at hand. The U.S. Geological Survey (USGS) reports that at current rates of mining, the world's known reserves will last 266 years. The estimated total resources of phosphate rock would last over 1,140 years. "There are no imminent shortages of phosphate rock," notes the USGS. With respect to the deleterious effects that using phosphorus to fertilize crops might have outside of farm fields, researchers are working on ways to endow crops with traits that enable them to use less while maintaining yields. O'Neill and his colleagues are also concerned that farmers are using too much nitrogen fertilizer, which runs off fields into the natural environment and contributes to deoxygenated dead zones in the oceans, among other ill effects. This is a problem, but one that plant breeders are already working to solve. For example, researchers at Arcadia Biosciences have used biotechnology to create nitrogen-efficient varieties of staples like rice and wheat that enable farmers to increase yields while significantly reducing fertilizer use. Meanwhile, other researchers are moving on projects to engineer the nitrogen fixation trait from legumes into cereal crops. In other words, the crops would make their own fertilizer from air. Water? Most water is devoted to the irrigation of crops; the ongoing development of drought-resistant and saline-tolerant crops will help with that. Hectares per capita? Humanity has probably already reached peak farmland, and nearly 400 million hectares will be restored to nature by 2060—an area almost double the size of the United States east of the Mississippi River. In fact, it is entirely possible that most animal farming will be replaced by resource-sparing lab-grown steaks, chops, and milk. Such developments in food production undermine the researchers' worries about overconsumption of biomass. And humanity's material footprint is likely to get smaller too as trends toward further dematerialization take hold. The price system is a superb mechanism for encouraging innovators to find ways to wring ever more value out less and less stuff. Rockefeller University researcher Jesse Ausubel has shown that this process of absolute dematerialization has already taken off for many commodities. After cranking their way through their models of doom, O'Neill and his colleagues lugubriously conclude: "If all people are to lead a good life within planetary boundaries, then the level of resource use associated with meeting basic needs must be dramatically reduced." They are right, but they are entirely backward with regard to how to achieve those goals. Economic growth provides the wealth and technologies needed to lift people from poverty while simultaneously lightening humanity's footprint on the natural world. Rather than degrowth, the planet—and especially its poor people—need more and faster economic growth.

#### No limits to growth---solar, nuclear, and fusion energy solve climate change better than degrowth

Michael Liebreich 18, Visiting Professor at Imperial College’s Energy Future Lab, “The Secret of Eternal Growth,” 10/29/18, http://ifreetrade.org/article/the\_secret\_of\_eternal\_growth\_the\_physics\_behind\_pro\_growth\_environmentalism

The earth, however, is not an isolated system. It may be nearly closed, exchanging limited matter across the planetary boundary, but it is far from isolated, as it receives a huge daily flux of energy from the sun and radiates almost as much away to space. In his book, Georgescu-Roegen even acknowledged the existence of huge solar energy fluxes, but that didn’t stop him from basing his seminal work on a scientific error. Later in his career, after ruefully acknowledging his mistake, he invented a Fourth Law of Thermodynamics, claiming that “material entropy” would forever prevent materials from being perfectly recycled. Pure fake science. Around the same time as Georgescu-Roegen was making up thermodynamic laws, a group of concerned environmentalists calling themselves the Club of Rome invited one of the doyens of the new field of computer modelling, Jay Forrester, to create a simulation of the world economy and its interaction with the environment. In 1972 his marvellous black box produced another best-seller, Limits to Growth (iv), which purported to prove that almost every combination of economic parameters ended up not just with growth slowing, but with an overshoot and collapse. This finding, so congenial to the model’s commissioners, stemmed entirely from errors in its structure, as pointed out by a then fresh-faced young economics professor at Yale, William Nordhaus. A third foundational work in the degrowth canon is Steady State Economics (v) by Herman Daly, later Senior Economist in the Environment Department of the World Bank. In it he explains that “the economy is an open subsystem of a finite and nongrowing ecosystem. Any subsystem of a finite nongrowing system must itself at some point also become nongrowing.” It’s a repeat of Georgescu-Roegen’s error. Daly must have known it too, since he noted that six days’ worth of radiation from the sun contained more useful energy (or exergy, to give it its correct name) than that embodied in all the fossil fuel reserves known at the time. The point here is not that solar power is the key to endless growth, though it could well be - nuclear fission and fusion are other strong contenders. The point is that when you scratch the surface of any of the seminal tracts of the degrowth movement, you find they are based on the same fake science, right through to the present day. Jeremy Rifkin’s 1980 Entropy: a New World View (vi) states that “here on earth material entropy is continually increasing and must ultimately reach a maximum”. In 2009, Professor Tim Jackson, the favourite anti-capitalist of the TED generation, published Prosperity Without Growth (vii). In it he pays homage to Daly’s “pioneering case for a ‘steady state economy’” and cheerfully recommends it to students hungering for alternative wisdom – either not understanding or not caring that it is based on a fallacy. This matters because, for all that the neo-liberal world economy has delivered extraordinary improvements in living standards – in life span, levels of education, infant survival, maternal health, poverty reduction, leisure, and so on (viii) – it is currently failing to address severe, systemic environmental challenges, first and foremost among them climate change. Unless the free-trade, pro-growth, pro-trade right offers a coherent plan, it is ceding the argument to the degrowth, anti-capitalist, anti-trade left. Climate change is real, serious, and urgent. That recent IPCC 1.5°C report is based on rigorous research. Of course climate change is being co-opted by the “Academic Grievance Studies” brigade (ix), but that doesn’t make the underlying physical science less real. As the world continues to burn through its remaining carbon budget, as temperatures continue to rise, as the ‘signal’ of climate damage becomes clearer against the background ‘noise’ of weather, the demand for dramatic action will only increase. Limiting the impact of climate change will require the application of technology, both new and yet-to-be-developed, on a heroic scale. Destroying the ability of the world economy to deliver these solutions is the very opposite of what we should be doing. And that is where Nordhaus and Romer come in. Romer’s great contribution was to identify the contribution of knowledge to economic growth. Before his Endogenous Growth Theory, no one could explain differences in growth rates of as much as 10 percent between countries at a similar stage of development. Romer’s work is the perfect riposte to those who think that economic growth is the same thing as ever-increasing physical material use and pollution; it is also the perfect riposte to those who believe that extractive industries can ever deliver long-term wealth and those who believe the same of agricultural subsidies and import tariffs. Nordhaus, for his part, was the creator of the first Integrated Assessment Models, bringing together the physics of climate change, its economic impact, and the functioning of the economy. He was also the first person to suggest that attaching a cost to emissions – low at first but rising – would squeeze greenhouse gases out of the economy. Nordhaus is no climate fundamentalist, famously diverging from the view propounded in the Stern Review, that the world needs super-high carbon taxes immediately. Nordhaus accepted that environmental challenges and climate change will act as a drag on the economy but, unlike others before him, he quantified the drag and showed that it is highly unlikely to reverse economic growth. Nordhaus and Romer are not the only Nobel Prize-winners whose work suggests that an open, liberal, trade-friendly economy – though one pricing in externalities – will do a better job of addressing climate change and other environmental problems than stalling or reversing economic growth. Simon Kuznets, who won the 1971 Nobel Prize for Economics (x), described how a variable can get worse in the early phases of a country’s development, and then improve as growth continues. He focused mainly on inequality, but the Environmental Kuznets Curves has been shown to govern most forms of local pollution. Ilya Prigogine won the 1977 Nobel Prize in Chemistry for his research into non-equilibrium “dissipative” structures – how a flow of energy across closed system can drive the creation of “order out of chaos” (xi). This is a real scientific expert on entropy proving that the economy can grow for as long as there is still a sun in the sky (which would give us about another five billion years).

#### Extinction’s inevitable---only growth can sustain colonization and solve extinction

**Skran 16** [Dale Skran is Executive Vice President of the National Space Society and a member of the Board of Directors of the Alliance for Space Development. “Settling space is the only sustainable reason for humans to be in space,” <http://www.thespacereview.com/article/2915/1>]

As robotic and artificial intelligence technologies improve and enable increasingly robust exploration without a human presence, eventually there will be only one sustainable reason for humans to be in space: settlement. Research into the recycling technology required for long-term off-Earth settlements will directly benefit terrestrial sustainability. Actively working toward developing and settling space will make available mineral and energy resources for use on Earth on a vast scale. Finally, space settlement offers the hope of long-term species survival that remaining on Earth does not. There are more than seven billion people on the Earth today. No rational space settlement advocate suggests that any significant portion of that population, or even of those who are rich, will be moving to Mars or anywhere else in space. However, a recent essay by Astro Teller, head of Google X Labs, and his wife Danielle, a physician and researcher takes the bold position that “It’s completely ridiculous to think that humans could live on Mars.” This essay, published by Quartz, repeats with little examination some of the hoariest arguments against space settlement. To support this view, the Tellers quote their 12-year-old daughter: “I can’t stand that people think we’re all going to live on Mars after we destroy our own planet.” This quote contains two mischaracterizations that demand refutation: that “we are all” going to live in space and that we are going to live in space after we destroy Earth. Another canard that has long floated about was given form by the recent film Elysium starring Matt Damon: the rich will leave the poor on the Earth and escape to space settlements. Upon examination, all three of these ideas are strawmen. There are more than seven billion people on the Earth today. No rational space settlement advocate suggests that any significant portion of that population, or even of those who are rich, will be moving to Mars or anywhere else in space. Instead, we expect that relatively small numbers of highly qualified individuals, or those who are deeply dedicated to living in space, would form the first settlements. Over a significant period of time, thousands more from the Earth would join those settlements as they become increasingly self-sufficient. Over more time, various possible niches for settlement (Moon, Mars, asteroids, free space, etc.) will be occupied, and eventually the population in space will total many millions, most of whom will have been born in space. So why then do Elon Musk, Stephen Hawking, and many others, including organizations like the National Space Society (NSS) and Alliance for Space Development, believe strongly that space settlement is essential to human survival? Although this may seem surprising, the Earth is not a “safe space.” The destiny of virtually all species on Earth is extinction in a relatively short span of geologic time. The Tellers claim that “we live on a planet that is perfect for us.” This statement is both completely true and total nonsense. We fit well on the Earth because we have evolved over millions of years to become creatures that are both adapted to live here and to like living here. It is truer to say that we are perfect for the Earth than the reverse. In fact, the Earth is not such a commodious place. It is subject to periodic calamities of various sorts, ranging from massive asteroid and comet impacts to titanic volcanic eruptions, and from periodic ice ages to disastrous solar flares. In the short run, the Earth seems balmy and comfortable. Viewed from the perspective of deep time, it starts to look more like a death trap, bedeviled by regular mass extinctions. However, things are actually quite a bit worse. Although there are many potentially bad things that might happen to the human race on the Earth from natural sources, there are many more from unnatural sources. We have been dancing with nuclear disaster for a long time. An apocalyptic atomic war is not inevitable, but it is possible. Add to this scenario the genetically engineered killer virus, “gray goo,” a robot revolt, and other horrors as yet undreamt, and the odds against human survival get longer. Hence, the need to abandon the fiction of Earth as our eternal and unchanging perfect home and to appreciate both the need for, and promise of, space settlement. Not so the rich can escape to an Elysium in the sky, or so we can all leave behind a polluted and overheated Earth, but simply so that the human species and human culture has a chance at surviving and flourishing in the long term. The Tellers believe that sustainability on the Earth has no relationship to what we do in space, but the same technologies that enable deep space settlement will have a profound impact on terrestrial sustainability. The Tellers write, “We haven’t even colonized the Sahara desert, the bottom of the oceans… because it makes no economic sense.” This may be true, but it also makes no sense to settle the Sahara desert, the bottom of the oceans, or Antarctica since these locations are on the Earth, and humans living there will not increase the probability of species survival. Near-Earth free space settlements and lunar bases are just stepping stones to ones much further out that are quarantined from Earth by millions of kilometers of vacuum. Once the motivation of species survival is put front and center, it becomes clear that a settlement in low Earth orbit, on the Moon, at L5, or on the Martian surface is not nearly sufficient. What is needed is a large set of thriving communities distributed throughout the solar system, and even ultimately in the Oort Cloud surrounding the solar system proper. This vision is not a small thing. It will be the work of many generations, just as was the settling of the New World or, even earlier in history, the human diaspora out of Africa along the Asian coast to Australia and beyond. The Tellers believe that sustainability on the Earth has no relationship to what we do in space, but the same technologies that enable deep space settlement will have a profound impact on terrestrial sustainability. Space settlements, of necessity, push the limits of food production per square meter and per liter of water. Space settlement agricultural methods can also be applied to growing food in parched California or in vertical farms in crowded urban areas. Space settlements require humans and technology to co-exist in close proximity. This implies an absolute minimization of pollution and sustained recycling of all waste. Such technologies seem highly applicable to sustainability on Earth as well. We will need to provide the best possible medical care for remote space settlements, which will be far from hospitals on Earth. The technologies that make such medicine effective—“tricorders”, telemedicine, and so on—can also bring medical care to underdeveloped and underserved areas of the Earth. The Tellers raise the specter of “winter-over syndrome” in the Antarctic, writing that “living on Mars would be way, way more miserable than living in Antarctica,” and concluding, “Nobody wants to live there.” Although it is clear that the Tellers will not be going, the large numbers who signed up for Mars One’s sketchy settlement plans suggest that a lot of people do want to live on Mars. There are real challenges to constructing space settlements, but current Antarctic bases are not true settlements. Nobody lives there with their families, with the exception of the coastal Esperanza Base, where about ten families routinely winter over. No real effort is made to create any kind of human environment that is comfortable over a long period of time. Conditions in Antarctica might be better compared to living in a campground than a self-sustaining settlement. Additionally, the current Antarctic Treaty essentially prevents any extraction or use of the natural resources found there, thus making economically independent settlements infeasible. The Tellers think that, from an economic perspective, “Mars has nothing to offer in return.” Here, at least in the short run, they have a point. Let us not shy from the truth. Conditions in the early settlements in the New World were difficult at best, and the casualty rate was high. We should expect the same to hold true for early space settlements. However, Jamestown and Plymouth gave rise to vast cities and a tamed landscape on a scale of hundreds of years. We now bring to the table technological means that would seem magical to the Jamestown settlers. Even as difficult an environment as the Moon can be developed and settled using technology that either exists currently or is an engineering project, as one book suggests. The Tellers think that, from an economic perspective, “Mars has nothing to offer in return.” Here, at least in the short run, they have a point. Although Mars may have more of the natural resources a settlement will need than, say, the Moon, it is at the bottom of a fairly steep gravity well and, for the time being, it is not likely that there will be many Mars-to-Earth exports. However, this is like looking at the resources of the New World via a keyhole, seeing a swamp, and reporting back that there is no point in going there. It is worth keeping in mind the example of “Seward’s Folly.” The purchase of Alaska from Russia was mocked as “Seward’s icebox” and a “polar bear garden.” At the time, the oil and mineral riches of Alaska were undiscovered and undreamt of. Space itself teems with valuable resources, including continuous and abundant solar energy and mineral wealth on a scale beyond imagination just in the near Earth asteroids. Just as the Tellers were dismissing space resources as irrelevant, the US Congress was laying the legal groundwork for asteroid and lunar mining with the passage of the Commercial Space Launch Competitiveness Act, signed by President Obama on November 23, 2015. The Tellers also seem unaware that their leadership at Google, Larry Page and Eric Schmidt, are investors in the asteroid mining firm Planetary Resources. The Tellers say that “we won’t survive [on Earth] unless we learn to live in a resource neutral way.” This statement assumes that that Earth is a closed system, which it is not. The Earth is flooded daily with vast amounts of solar energy that, if exploited, could power just about any civilization we wish to maintain. There is no technical limitation to providing continuous, carbon-free power from space solar power satellites beaming power back to the surface of the Earth anywhere it might be needed. The main opposition to this idea derives from an unwillingness to consider centralized power systems on ideological grounds, combined with the unexpected reality of very cheap natural gas today. Even the most conservative consideration of near-Earth asteroid resources suggests that there is no reason to view the Earth as a closed system to which nothing can be added. The time for the settlement of Mars will come, but first we need to build on our success in developing the resources of Earth orbit, in the form of navigation, Earth observation, communication, and weather satellites, by fully developing the economic potential of the Earth-Moon system. Space settlements must flow out of the development of the economic resources of space if they are to be sustainable in the long term. The NSS has developed a complete description of milestones toward the development of space settlements. In view of the above, Astro Teller was probably right to turn down the “space cadet” who wanted Google X to spend money on Mars settlement. But wait—Google is doing exactly that. A key first step toward space settlement is ensuring a gapless transition from the existing International Space Station to commercially owned and operated LEO space stations as described in the NSS position paper “Next Generation Space Stations.” Next will come the development of the resources of the Moon and neaby asteroids leading to the creation of a self-sustaining Earth-Moon economy. Once we have established an asteroid-Earth-Moon economy that makes the resources found in this region fully available for projects ranging from the construction of solar power satellites to fueling future Mars missions, trips to Mars will be far less of a reach than they are today. In view of the above, Astro Teller was probably right to turn down the “space cadet” who wanted Google X to spend money on Mars settlement. Currently Google’s money would be better spent in low Earth orbit, among the asteroids, and on the Moon, joining forces with the growing number of entrepreneurs seeking their fortunes in space. But wait—Google is doing exactly that by sponsoring the Google Lunar X PRIZE to encourage private groups to send landers to the Moon, and investing $900 million in Elon Musk’s SpaceX. Given that corporate Google (now Alphabet) has just made a massive investment in a company founded to settle Mars, the Tellers’ essay sounds a bit like sour grapes. In any case, the Tellers are completely wrong in their disregard of the potential economic benefits of space development and the underlying motivation for space settlement.

#### 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.

### 1NC – Heg good

#### The aff advocates for a shift away from cap to Marxism – that advocates for the US pulling out of every major geopolitical conflict around the world because they’re in countries like in the Middle East for money – that’s bad. They also link in 1ac cross by defending a revolution, which kills heg

#### Nuanced debates about the necessity of internationalism lock in deep engagement---the public is primed to ignore the benefits of great-power peace in favor of shallow indictments of its cost.

---Card is the 5th of a list of things to help heg ---- here are the other 4

1. Sustain grand strategy
2. Fund/maintain primacy
3. Sustain alliances
4. Use relative restraint

**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 21-23]

Fifth and finally, sustaining America’s post–Cold War strategy entails persuading the American public to recommit to that strategy and the investments it requires. The state of American opinion on that subject is currently ambiguous. Polling data indicates that public support for most key aspects of American internationalism has recovered somewhat from where it was in 2012–13, and is again at or near postwar averages.32 But the 2016 election cycle and its eventual outcome revealed strong support for candidates who advocated rolling back key elements of post–Cold War (and post–World War II) grand strategy, from free trade to U.S. alliances. This atmosphere reflects discontent with the failures and frustrations of U.S. grand strategy in the post–Cold War era, no doubt, yet it also reflects the fact that American strategy seems at risk of becoming a victim of its own success.33 By helping to foster a comparatively stable and congenial environment, American policies have made it more difficult for Americans to remember why significant investments in the global order are needed in the first place.

Today, this ambivalence is becoming increasingly problematic, for the simple reason that properly resourcing American strategy requires making politically difficult trade-offs with respect to entitlements and other ballooning domestic costs. It is also becoming problematic, of course, because even if the American public seems to support particular aspects of American grand strategy, the public has shown itself willing to elect a president who appears to care little for the successful postwar and post–Cold War tradition, even if he has, so far, maintained more aspects of that tradition as president than his campaign rhetoric might have led one to expect. In the future—and indeed, looking beyond Trump’s presidency— sustaining American grand strategy will thus require more intensive political efforts.

American leaders will need to more effectively make the case for controversial but broadly beneficial policies such as free trade, while also addressing the inevitable socioeconomic dislocations such policies cause.34 They will need to more fully articulate the underlying logic and value of alliances and other commitments whose costs are often more visible—not to say greater—than their benefits. They will need to remind Americans that their country’s leadership has not been a matter of charity; it has helped produce an international order that is exceptional in its stability, liberalism, and benefits for the United States. Not least, they will need to make the case that the costs that the country has borne in support of that order are designed to avoid the necessity of bearing vastly higher costs if the international scene returned to a more tumultuous state. After all, the success of American statecraft is often reflected in the bad things that don’t happen as well as in the good things that do. Making this point is essential to reconsolidating domestic support now and in the future—and to preserving a grand strategy that has delivered pretty good results for a quarter century.

#### Education about military strategy is good – it’s key to military effectiveness and humanitarian missions that outweigh.

Toronto 15 [Dr. Nathan W. Toronto is an associate professor of Strategy and Security Studies at the United Arab Emirates National Defense College. 5/26. "Does Military Education Matter?" https://www.e-ir.info/2015/05/26/does-military-education-matter/]

Military education is valuable because it provides an intellectual architecture for battlefield success. It contributes to stable civil-military relations, a culture of reflection, and a capacity for critical analysis. This article specifies these conceptual links between military education and battlefield success, and then suggests statistical correlations linking military education and battlefield success. The main point of this exercise is that questioning the purpose of military education is like questioning the purpose of education, period. National education systems are chock full of students who think they are taking useless general education classes, just as there will always be officers who question why they have to go to military schools. The reason is that, regardless of what people do, education helps them do it better. Military education matters because it cultivates an aspiration to excellence.

This is especially true for military education, because the military usually only has to fix things when they are truly broken, like combating Ebola in West Africa, battling Islamic State, or conducting humanitarian aid and disaster relief operations. We do not give the military the easy problems. We give them the hardest possible problems we can find. What is more, we cannot even predict what those problems will be, much less devise solutions to them ahead of time. For military organizations, which often thrive on predictability and routine, this is the most challenging aspect of the job (Dempsey, 2012; Bruscino, 2013).

This nettlesome environment requires a daunting command of everything from book-learned knowledge of history and social science to hard-won experience from the world’s remotest battlefields and military headquarters. Military officers get this through their education, not only by being exposed to new ideas in the classroom, but also by reflecting on their experience in new ways. Military education becomes a ‘force multiplier,’ meaning that it magnifies the positives in what the military is already doing (Lamb and Porro, 2014). However, war is complex. It will always be the province of reason and passion and chance (Clausewitz, 1989[1832]), so it is unreasonable to expect that more military education will always lead to more military success. This article proposes reasons why military education is related to military success, but the claim is probabilistic. Military education is not an insurance policy against failure, but it is likely to establish the conditions for military success.