# 2NR

# 1NC

### 1NC – Th

#### Interp: The affirmative must correctly tell the negative which aff they will be reading, including any and all changes, at the time of the online flip result. To clarify, they can't change the aff after the flip.

#### Violation: screenshots – they didn’t respond on any platform until 1 minute before the flip, said "evergreening" with a minute left on the flip, and then said the plan text and advantage would change after the flip.Graphical user interface Description automatically generated with low confidenceGraphical user interface, text, application Description automatically generated

Graphical user interface, text, application, email, Teams

Description automatically generated

#### Negate:

#### 1] Prep and clash – forces us to make a flip decision in the dark since we don't know what aff or version they'll choose, and leaves us guessing at whether we'll have prep vs the new plan - it's elims of an octas bid where we could flip neg thinking its evergreening, and they could break new or change the plan to skirt neg pics and disad - a flip decision would heavily be determined by changes to the aff and whether there's a new plan we might not have prep to.

#### 2] No offense for disclosure bad – they posted cites on the wiki for all their affs, but didn't give us the correct aff at the flip - the only offense was forcing us to make a flip decision without knowing the aff and retroactively changing it - proves any responses are in bad faith.

#### Drop the debater – a) they have a 7-6 rebuttal advantage and the 2ar to make args I can’t respond to, b) it deters future abuse and sets a positive norm.

#### Use competing interps – a) reasonability invites arbitrary judge intervention since we don’t know your bs meter, b) collapses to competing interps – we justify 2 brightlines under an offense defense paradigm just like 2 interps.

#### No RVIs – a) illogical – you shouldn’t win for being fair – it’s a litmus test for engaging in substance, b) norming – I can’t concede the counterinterp if I realize I’m wrong which forces me to argue for bad norms.

### 1NC – T

#### **Interp and Violation – intellectual property in the context of medicines is patents only—exclusivity protection is not T.**

#### Medical IP is patents

Oxfam n.d. (Oxfam, [], No date, “Intellectual property and access to medicine“, No Publication, accessed: 8-8-2021, https://www.oxfamamerica.org/explore/issues/economic-well-being/intellectual-property-and-access-to-medicine/) ajs

Intellectual property (IP) has different forms; in the case of access to medicines, we are talking about patents. Patents are a public policy instrument aimed at stimulating innovation. By providing a monopoly through a patent—which gives inventors an economic advantage—governments seek to provide an incentive for R&D. At the same time, the public benefits from technological advancement.

#### Negate for limits – explodes the topic to anything from random trade secrets to trademark pictures and symbols to copyrights which destroys core generics like innovation that obviously don’t link to trademarks – core of the topic is about proprietary rights to ideas and innovations. A big case list with no unifying generics destroy neg prep – disincentivizes in depth topic research and leaves the neg behind.

### 1NC – CP

#### CP: The member nations of the World Trade Organization should allow exclusivity to be extended indefinitely for antimicrobial drugs per Salmieri. The member nations of the World Trade Organization should reduce intellectual property protections for all other medicines by implementing a one-and-done approach for patent and exclusivity protection.

Salmieri 18 “INTELLECTUAL PROPERTY AND THE FREEDOM NEEDED TO SOLVE THE CRISIS OF RESISTANT INFECTIONS” 2018 Gregory Salmieri [Ph.D., Philosophy, 2008, University of Pittsburgh; B.A. 2001, The College of New Jersey. Fellow, The Anthem Foundation for Objectivist Scholarship; Lecturer, Philosophy Department, Rutgers University] <http://georgemasonlawreview.org/wp-content/uploads/2019/04/26-1_7-Salmieri.pdf> SM

This Article suggests another sort of solution, which might be described as a way of incentivizing, by means of a single policy change, both the development of new antimicrobials and the responsible stewardship of these drugs. In its simplest form, the solution is to make the patent terms on these drugs extremely long. The solution has been proposed in this form by Professor John Horowitz and Brian Moehring32 as well as Professor Eric Kades,33 and it is occasionally mentioned in the existing literature.34 However, the case for this broad sort of solution has not been adequately articulated or appreciated. The next part develops the case for a solution of this sort and proposes an alternative version of the solution that is better tailored to the problem and better situated within a theory of IP. Finally, Part III addresses some concerns faced by any solution of this sort.

II. THE RIGHT TO THE VALUE CREATED BY RESPONSIBLE STEWARDSHIP

Consider how the two-fold problem of growing resistance to our current antimicrobial drugs and the dearth of new antimicrobials under development looks once the specifics are omitted. Forget for a moment that the subject is drugs and microbes—or even inventions as opposed to other sorts of property—and just focus on the structure of the predicament.35 There is a resource of immense value that is being used myopically in a way that destroys existing stocks of the resource, and little is being done to find or develop new stocks of it.

This is a pattern one expects to see with unowned resources, but not with owned ones. It is the classic “tragedy of the commons.” When a patch of grazing land is owned in common by everyone—which is just to say it is unowned—everyone has an incentive to make what use of it he can, leading to its overuse and destroying its value. By contrast, an owner can use land judiciously in ways that preserve its value or even to invest in improving the land. This is possible because the owner has exclusive control of the land in the present and therefore can control its uses, and because the owner expects to reap the benefit of the land’s future value. If deeds to land expired after twenty years, with the land reverting to the commons, land owners would have no financial incentives to preserve or enhance the land’s value past the twenty-year window. In this scenario, they could not afford to forgo shortterm gains that came at the expense of the land’s later value. Nor could they afford to invest in long-term improvement projects, such as clearing new land for grazing. This is the predicament with antimicrobial drugs. The profligate use of such drugs in the present destroys their value in a future in which they are unowned.

This suggests the simple solution of extending the patent terms for antimicrobial drugs. So long as the drug remains under patent, the patent holder has both an interest in preserving its usefulness and the ability to control its use so as to preserve its value. How long should the patent term be extended? The five years of extra market exclusivity offered by the GAIN Act is calculated with a view to incentivizing companies to invest in developing new drugs. The aim of the present proposal is different. It is to enable the creators of drugs to profitably exercise their rights over the drugs in a manner that preserves the drugs’ effectiveness over time—ideally into the indefinite future. This requires extending the term of exclusivity not just a few years or decades, but as far into the future as there is reason to hope that the drugs’ effectiveness can be maintained.

There are various ways in which this suggestion could be further developed; perhaps the most promising is simply to allow patents on antimicrobial drugs to be renewed indefinitely, so long as the drugs’ continued effectiveness can be demonstrated. (How exactly continued effectiveness should be demonstrated is a matter of detail, but likely by showing resistance to be below a certain threshold—perhaps 20 percent—in clinical isolates of interest.36) This would allow for a potentially infinite patent term. “Perpetual patents” have occasionally been proposed, 37 but the lack of a fixed term may do violence to the notion of a patent, so it may be better to conceive of this as a proposal for a new type of IP right that combines features of patents and trademarks. Conceptualizing the relevant right in this way highlights its basis. Like a patent, the right would pertain to an invention and would confer market exclusivity; like a trademark, however, it would be renewable in perpetuity on the grounds that the continued value of the property depends on the owner taking continuous action to maintain it. In the case of the right under consideration, the relevant actions would be those of stewarding the drug in such a manner as to prolong its continued effectiveness in the face of resistance.

This new sort of property right could, in principle, be applied to drugs that are already off patent or otherwise ineligible for patent protection. The Chatham House Working Group proposes granting “delinkage rewards” to “firms registering a new antibiotic without patent protection (such as new uses for old drugs),”38 and it may be that the sort of IP protection proposed here would be applicable in such cases as well. If so, the right would be justified by the discovery of the new use for the drug and by the fact that intelligent management of this use is required for it to retain its value. A more difficult case is granting such rights to already known antibiotics that have gone off patent and are now available as generics. Removing these drugs from the commons would make it possible for an owner to profit by stewarding them responsibly. The difficulty here is determining who would own them. Professor Kades considers the possibility of granting a new patent to the original patent holder, but suggests “auctioning the patent rights [to such drugs] to the highest bidder.”39 Both are plausible solutions. Another option, in light of the issue of cross-resistance (which will be discussed in Part III) would be to apportion the IP rights to the relevant drugs among the owners of other drugs with similar mechanisms of action.

Instituting the sort of property right described here (whether or not it is extended to drugs that are currently unpatentable and/or in the public domain) would create an environment in which pharmaceutical companies and other private entities can compete to develop new policies and business models that maximize the total value derived from antimicrobial drugs over time. An important advantage of this proposal is that it does not require policymakers (or authors of law review articles) to know in advance which specific practices would have this auspicious effect. However, some obvious possibilities suggest themselves.

Pharmaceutical companies could sell new antimicrobials at a price high enough to make it prohibitive to use them as anything other than treatments of last resort. In addition to extending the drugs’ useful lives, the high prices would compensate for the lower initial volume of sales, and the drugs could eventually be repriced for wider use as second- and then first-line treatments. This repricing would have to be paced both to the growth of the resistant bacterial population and to the development of new antimicrobial drugs to take their predecessors’ place as treatments of last resort. One can imagine many variations of this strategy with different price points and development cycles.

Pharmaceutical companies could also extend the effective lifespan of their antimicrobials through contractual arrangements with healthcare providers, which restrict the latter’s use of the drugs to certain protocols or best practices. Imagine the new business practices whereby pharmaceutical companies might profit from drugs that are never or hardly ever used. Licensing plans like the one proposed by Commissioner Gottlieb might be employed in innovative ways.40 For example, healthcare providers or insurance companies might pay a monthly fee for the right to use these drugs should it ever become necessary to do so. Or the various parties might negotiate a system whereby a pharmaceutical company (or an entity that has licensed drugs from multiple companies) charges a fixed price for treatment in accordance with a proprietary antimicrobial protocol that makes use of several of their drugs, specifying which drugs can used under which conditions.

The suggestions in the last paragraph all amount to ways in which revenues from the creation of a new drug might be “delinked” from sales volume. In principle, this delinkage could occur simply through market forces, without any additional policy interventions, but since governments and multinational organizations account for most of the spending in the healthcare sector in much of the world, their adopting policies favoring delinkage would likely stimulate the development of these sorts of business models under an IP regime of the sort suggested. Indeed, such delinkage–promoting policies would likely fare better under the proposed IP regime than under the current IP system because, as The Chatham House Working Group observes, “patent expiry” creates some difficulties for such policies.

Obligations for responsible use can be carefully crafted and functional when monopoly rights are in place, but are likely to fail once generic antibiotics are introduced upon the termination of the period of exclusivity. Generic manufacturers ordinarily rely on volume-based rewards, and low prices and large volume of sales without appropriate measures to conserve the antibiotics may be an important driver of indiscriminate use and resistance. A sustainable system will require controls on market entry after termination of the patent, and regulation of the way the generic products are marketed and prescribed.41

It bears emphasizing at this point that the best stewardship policies for antimicrobial drugs remain to be discovered. The Chatham House Working Group report (quoted several times above) represents the cutting edge of research on this issue, and it offers precious few details about the new “delinked” business model it says “needs to be developed.” Successful business models are rarely if ever specified from on high by public policy makers. Securing a long-range IP right to antimicrobial drugs would create the conditions in which the healthcare industry as a whole could invest the resources required to discover the practices, protocols, and business models that maximize the value of these substances. In addition, the ability to capture this value as profit would create an incentive to develop new drugs as needed.

IP rights, and patents in particular, are sometimes understood as bargains between creators and society. The proposal under consideration grants a lot more to the developers of any new antimicrobial drugs than they are granted under current law, but it asks a lot of these developers in return—for it requires them to become good stewards of their drugs by discovering and implementing the means necessary to preserve the drugs’ value over time, so that the maximum potential benefit from them is realized.42 This is work that needs to be done by someone, and the sort of IP regime proposed here would enable those people and firms most qualified to do this work to profit by doing it.

This leads to a deeper point. Although IP rights are often understood as special privileges granted by government and justified on utilitarian grounds, the dominant strand in early American jurisprudence, taking its inspiration from John Locke, regards all property rights as securing to a creator the fruits of his productive work.43 Among the reasons why patents and copyrights are finite in duration, whereas rights to chattels or land can be passed on from generation to generation indefinitely, is that chattels and land generally need to be maintained in order to retain their economic value over time, whereas this is not true of the economic value of an artwork or a method.44 But the case under consideration reveals that the continued economic value of certain methods does depend on an ongoing process of intelligent management by which one uses the method sparingly. It is this very fact that (according to the argument of this Part) justifies extending the IP right to the drug indefinitely. This raises the question of whether there are structurally similar cases in other fields, where the continued commercial value of a potential invention depends on its judicious use. If so, it may be that there are other values being destroyed (or never created) because of tragedies of the commons that could be rectified by policies analogous to the one suggested here.

#### Even if the aff incentivizes innovation they cannot incentivize innovation in anti-microbial research – the problem right now is lack of profit incentives for innovation and responsible stewardship.

Salmieri 18 “INTELLECTUAL PROPERTY AND THE FREEDOM NEEDED TO SOLVE THE CRISIS OF RESISTANT INFECTIONS” 2018 Gregory Salmieri [Ph.D., Philosophy, 2008, University of Pittsburgh; B.A. 2001, The College of New Jersey. Fellow, The Anthem Foundation for Objectivist Scholarship; Lecturer, Philosophy Department, Rutgers University] <http://georgemasonlawreview.org/wp-content/uploads/2019/04/26-1_7-Salmieri.pdf> SM

According to a 2013 report by the Center for Disease Control (“CDC”), two million people in the United States annually contract infections that are “resistant to one or more of the antibiotics designed to treat those infections”; the result is at least 23,000 deaths and (direct and indirect) economic losses that have been estimated at $55 billion (in 2008 dollars).2 The United Kingdom’s Antimicrobial Resistance Review estimates that, worldwide, there will be as many as ten million deaths annually from such infections by 2050.3 A 2017 report by the World Bank Group anticipates the financial toll:

In the optimistic case of low AMR [antimicrobial resistance] impacts, the simulations found that, by 2050, annual global gross domestic product (GDP) would likely fall by 1.1 percent, relative to a base-case scenario with no AMR effects; the GDP shortfall would exceed $1 trillion annually after 2030. In the high AMR-impact scenario, the world will lose 3.8 percent of its annual GDP by 2050, with an annual shortfall of $3.4 trillion by 2030.4

There are two related aspects to this crisis: (1) bacterial populations are evolving resistance to the antimicrobial drugs currently in use, and (2) there are few new drugs in the developmental pipeline that promise to be effective against these bacteria.5 It is widely understood that both aspects are caused or exacerbated by the economic incentives faced by the pharmaceutical industry and the healthcare industry more broadly.6

The eventual obsolescence of any conventional antimicrobial drug is inherent in its use, but it is hastened when the drug is liberally prescribed.7 Such liberal prescription is driven by incentives for both physicians and pharmaceutical companies. Patients’ expectations for prompt treatment sometimes lead doctors to prescribe broad-spectrum antibiotics in cases where it would be more prudent to await testing and prescribe a more targeted antimicrobial—or to prescribe antibiotics for viral infections where they are ineffective. 8 Pharmaceutical companies have an incentive to sell as much volume as possible in the period between the drug’s Food and Drug Administration (“FDA”) approval and the end of its twenty-year patent term.

The problem of liberal prescription of antibiotics has been much discussed in medical and policy circles. 9 It is widely agreed that an important part of the solution is antimicrobial stewardship, which the Infectious Diseases Society of America defines as follows:

Antimicrobial stewardship refers to coordinated interventions designed to improve and measure the appropriate use of antimicrobials by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy, and route of administration. The major objectives of antimicrobial stewardship are to achieve optimal clinical outcomes related to antimicrobial use, to minimize toxicity and other adverse events, to reduce the costs of health care for infections, and to limit the selection for antimicrobial resistant strains.10

The most dramatic outcome thus far of the policy discussion, in the United States at least, is that the Centers for Medicare and Medicaid Services updated its “Conditions of Participation.”11 These updated “Conditions of Participation” (issued as a result of an executive order by President Obama in 2014) require all hospitals participating in Medicare and Medicaid to establish and maintain “antibiotic stewardship programs.”12 These conditions are already in effect for acute care hospitals and are expected to go into effect generally by the end of 2018.13

An additional incentive for too liberal use of antibiotics comes from outside of the healthcare industry. These drugs are useful as a growth promoter for livestock, and it has been shown that this use can lead to the growth of resistant bacteria, which can then infect human beings. 14 Such use of most antibiotics is now banned in the European Union member states, Mexico, New Zealand, and South Korea.15 In the United States and Canada, regulatory agencies have issued guidelines against this use of antibiotics that are deemed medically important.16

The second aspect of the crisis is the dearth of new antimicrobial drugs in development. A 2017 World Health Organization report projects that approximately ten new antibiotics and biologicals will be approved in the next ten years but warns that “these new treatments will add little to the already existing arsenal” because most of them will be “modifications of existing antibiotic classes,” which are “only short term solutions as they usually cannot overcome multiple existing resistance mechanisms and do not control the growing number of pan-resistant pathogens.”17

Few new antimicrobial drugs are in development because there is a low return on the investment needed to discover such drugs and shepherd them through the approval process. This is the reason why Aventis, Bristol-Myers, Squibb, Eli Lilly, Glaxo SmithKline, Proctor and Gamble, Roche, and Wyeth all “greatly curtailed, wholly eliminated or spun off their antibacterial research” between 1999 and 2003.18 The already low return on investment will dwindle as stewardship guidelines are adopted and the drugs are prescribed more judiciously.19

The Chatham House Working Group on New Antibiotic Business Models summarizes the situation thusly:

Today, few large pharmaceutical companies retain active antibacterial drug discovery programmes. One reason is that it is scientifically challenging to discover new antibiotics that are active against the antibiotic-resistant bacterial species of current clinical concern. Another core issue, however, is diminishing economic incentives. Increasingly, there are calls to conserve the use of truly novel antibiotics, which might limit sales severely and discourage greater investment in R&D. Meanwhile, unless they see evidence of superiority, healthcare payers are unwilling to pay prices that would directly support the cost of development, provide a competitive return on investment and reflect the value to society of maintaining a portfolio of antibiotics adequate to overcome growing resistance.

A principal reason for this is the mismatch between the current business model for drugs and combating resistance. The current business model requires high levels of antibiotic use in order to recover the costs of R&D. But mitigating the spread of resistance demands just the opposite: restrictions on the use of antibiotics. Economic incentives play a key role in the global resistance problem, leading to overuse of these precious drugs at the same time as companies are abandoning the field; and the increasing restrictions on inappropriate use of antibiotics make them relatively unprofitable compared with other disease areas.20

#### Economics is the key internal link which short IP terms exacerbate.

Plackett 20 “Why big pharma has abandoned antibiotics” October 21, 2020, Benjamin Plackett [science journalist based in London and the Middle East] <https://www.nature.com/articles/d41586-020-02884-3> SM

Why big pharma has abandoned antibiotics

A lack of financial incentive has meant large pharmaceutical companies have left the market

When scientists, public-health bodies and governments around the world warn that antimicrobial resistance is the next great health crisis, they have good reason. Since the 1960s, bacteria and other microorganisms have become increasingly resistant to antimicrobial drugs, leading to more and more people dying.

Drug-resistant diseases kill around 700,000 people each year, but a United Nations interagency group on antimicrobial resistance estimates that this could swell to 10 million a year by 2050 if no action is taken. This is more than the number of people who currently die from cancer worldwide every year.

Despite the clear need for more antimicrobial agents, such drugs have not been forthcoming. Fewer new antibiotics are reaching the market; the last entirely original class of antibiotic was discovered in the late 1980s. One reason is that discovering and bringing antibiotics to market is often not profitable for pharmaceutical companies.

A 2017 estimate puts the cost of developing an antibiotic at around US$1.5 billion1. Meanwhile, industry analysts estimate that the average revenue generated from an antibiotic’s sale is roughly $46 million per year. “That’s tiny and nowhere near the amount needed to justify the investment,” says Kasim Kutay, chief executive of Novo Holdings, an investment firm in Hellerup, Denmark, focused on the life sciences.

As a result, many large pharmaceutical firms have dropped out of the market in favour of pursuing profitable lines of drug development, such as cancer treatments (see ‘Low approval ratings’). In their place, smaller companies and funding bodies are striving to fill the gap. But fixing the economics of drug development might take a radical approach.

Pipeline problem

Deaths caused by infectious diseases have fallen by 70% since antibiotics were introduced on a large scale in the 1940s, according to the UK biomedical funding charity Wellcome. This could be in jeopardy unless the economics of the market can be re-imagined.

A 2017 review found that in one strain of bacteria, the prevalence of resistance to levofloxacin, an antibiotic used to treat a wide variety of infections, grew from roughly 2% before 2000 to 27% between 2011 and 2015 in the Asia Pacific region2.

“The problem is terrible and not too far away,” warns Asad Khan, a microbiologist at the Aligarh Muslim University in Aligarh, northern India. “I think many governments and funding bodies haven’t yet understood the scale of what we’re facing.”

Many economists have also been slow to act. One review found that only 55 of more than 1 million peer-reviewed economics articles in the EconLit database were related to antimicrobial resistance3. Papers on climate change, by comparison, totalled around 16,000. Yet economics has a significant role in the lack of antibiotics coming to market.

Any type of pharmaceutical development is an expensive process, but for antibiotics it is especially hard. One issue is that the cost–benefit ratio — how much profit will result from an investment — is much less favourable than for other drugs. “Profit is basically volume multiplied by price,” says Richard Smith, a health economist at the University of Exeter, UK. For antibiotics, neither element is high enough to offset the cost of development.

Prices are low because in many countries government agencies have a role in assessing the price, not the manufacturer alone. In the United Kingdom, for instance, the National Institute for Health and Care Excellence (NICE) assesses the clinical strength and cost-effectiveness of new medicines. “The point of NICE is to try and keep drug prices low,” says Smith.

Other countries have a similar set-up. For a new drug to be included in the Australian government’s Pharmaceutical Benefits Scheme, which subsidizes the cost of medication, it has to be approved by a committee of health professionals and economists, who evaluate whether the drug offers value for money. Canada also regulates the price of patented medicines to keep prices low.

At the same time, physicians avoid prescribing new antibiotics to help delay the development of bacterial resistance. This means that governments and health agencies are even less likely to accept a premium for new antibiotics, says Smith. “Antibiotics used to be profitable back in the 1960s when you didn’t have to consider resistance as an issue,” he says. Typically, a drug is granted a 5–10 year exclusivity period, during which the manufacturer is shielded from competition from any generic versions that might be developed. But even this isn’t enough to recoup the vast development costs. Once the exclusivity period expires, other drug makers can enter the market — and, without the need to account for large research expenditures, they can drop the price.

According to a policy review4 by the UK Office of Health Economics, the relatively short treatment cycle for a course of antibiotics reduces the volume that can be sold. Antibiotics are typically prescribed for a couple of weeks, whereas therapies for chronic diseases are taken for months or even years.

In a 2003 study, researchers found that an injectable antibiotic is roughly three times less profitable than are drugs used for the treatment of cancer5. Drugs for musculoskeletal conditions, meanwhile, are around 11 times more lucrative.

### 1NC – ☺

#### Disease won’t cause extinction—

#### Burnout and empirics.

Owen Cotton-Barratt 17, et al, PhD in Pure Mathematics, Oxford, Lecturer in Mathematics at Oxford, Research Associate at the Future of Humanity Institute, 2/3/2017, Existential Risk: Diplomacy and Governance, https://www.fhi.ox.ac.uk/wp-content/uploads/Existential-Risks-2017-01-23.pdf

For most of human history, natural pandemics have posed the greatest risk of mass global fatalities.37 However, there are some reasons to believe that natural pandemics are very unlikely to cause human extinction. Analysis of the International Union for Conservation of Nature (IUCN) red list database has shown that of the 833 recorded plant and animal species extinctions known to have occurred since 1500, less than 4% (31 species) were ascribed to infectious disease.38 None of the mammals and amphibians on this list were globally dispersed, and other factors aside from infectious disease also contributed to their extinction. It therefore seems that our own species, which is very numerous, globally dispersed, and capable of a rational response to problems, is very unlikely to be killed off by a natural pandemic.

One underlying explanation for this is that highly lethal pathogens can kill their hosts before they have a chance to spread, so there is a selective pressure for pathogens not to be highly lethal. Therefore, pathogens are likely to co-evolve with their hosts rather than kill all possible hosts.39

#### Resilience and countermeasures prevent spread – distinct from burnout

Adalja 16

Amesh Adalja is an infectious-disease physician at the University of Pittsburgh, The Atlantic, June 17, 2016, “Why Hasn't Disease Wiped out the Human Race?”, https://www.theatlantic.com/health/archive/2016/06/infectious-diseases-extinction/487514/

But when people ask me if I’m worried about infectious diseases, they’re often not asking about the threat to human lives; they’re asking about the threat to human life. With each outbreak of a headline-grabbing emerging infectious disease comes a fear of extinction itself. The fear envisions a large proportion of humans succumbing to infection, leaving no survivors or so few that the species can’t be sustained.

I’m not afraid of this apocalyptic scenario, but I do understand the impulse. Worry about the end is a quintessentially human trait. Thankfully, so is our resilience.

For most of mankind’s history, infectious diseases were the existential threat to humanity—and for good reason. They were quite successful at killing people: The 6th century’s Plague of Justinian knocked out an estimated 17 percent of the world’s population; the 14th century Black Death decimated a third of Europe; the 1918 influenza pandemic killed 5 percent of the world; malaria is estimated to have killed half of all humans who have ever lived.

Any yet, of course, humanity continued to flourish. Our species’ recent explosion in lifespan is almost exclusively the result of the control of infectious diseases through sanitation, vaccination, and antimicrobial therapies. Only in the modern era, in which many infectious diseases have been tamed in the industrial world, do people have the luxury of death from cancer, heart disease, or stroke in the 8th decade of life. Childhoods are free from watching siblings and friends die from outbreaks of typhoid, scarlet fever, smallpox, measles, and the like.

**Intervening actors check**

**Zakaria 9—**Editor of Newsweek, BA from Yale, PhD in pol sci, Harvard. He serves on the board of Yale University, The Council on Foreign Relations, The Trilateral Commission, and Shakespeare and Company. Named "one of the 21 most important people of the 21st Century" (Fareed, “The Capitalist Manifesto: Greed Is Good,” 13 June 2009, http://www.newsweek.com/id/201935)

Note—Laurie Garrett=science and health writer, winner of the Pulitzer, Polk, and Peabody Prize

It certainly looks like another example of crying wolf. **After bracing ourselves for a global pandemic, we've suffered** something more like **the usual seasonal influenza**. Three weeks ago the World Health Organization declared a health emergency, warning countries to "prepare for a pandemic" and said that the only question was the extent of worldwide damage. **Senior officials prophesied that millions could be infected** by the disease. **But as of last week, the WHO had confirmed only 4,800 cases** of swine flu, with 61 people having died of it. Obviously, these low numbers are a pleasant surprise, but it does make one wonder, what did we get wrong? **Why did** the **predictions of a pandemic turn out to be so exaggerated**? Some people blame an overheated media, but it would have been difficult to ignore major international health organizations and governments when they were warning of catastrophe. I think **there is a** broader **mistake in the way we look at the world.** Once we see a problem, we can describe it in great detail, extrapolating all its possible consequences. But **we** can **rarely anticipate the human response to that crisis. Take** **swine flu. The virus** **had crucial characteristics** **that led researchers to worry that it could spread far and fast**. They described—and the media reported—what would happen if it went unchecked. **But it did not go unchecked**. **In fact, swine flu was met by an extremely vigorous response at its epicenter**, **Mexico. The Mexican government reacted quickly** and massively, quarantining the infected population, testing others, providing medication to those who needed it. **The noted expert on this subject,** Laurie **Garrett, says, "**We should all stand up and scream, **'Gracias, Mexico**!' because the Mexican people and the Mexican government have sacrificed on a level that I'm not sure as Americans we would be prepared to do in the exact same circumstances. They shut down their schools. They shut down businesses, restaurants, churches, sporting events. **They** basically paralyzed their own economy. They've suffered billions of dollars in financial losses still being tallied up, and thereby **really brought transmission to a halt." Every time one of these viruses is detected**, writers and **officials bring up the Spanish influenza** epidemic **of 1918** in which millions of people died. Indeed, during the last pandemic scare, in 2005, President George W. Bush claimed that he had been reading a history of the Spanish flu to help him understand how to respond. **But the world we live in today looks nothing like 1918. Public health-care systems are far better** and more widespread than anything that existed during the First World War. **Even Mexico, a developing country, has a first-rate public-health system**—far better than anything Britain or France had in the early 20th century.

#### Collapse prevents war

Clary 15

* Controls for other confounding factors in its analysis
* Revenues decrease when a recession hits – less money to spend on military / elsewhere
  + Leads to arms control since leaders don’t want to spend precious $ on arms races – empirically proven by Gorbachev, Nixon
* Cooperation due to decline increases cost of conflict
  + Proven by potential warring powers (Saudis, Israel, Egypt, etc) so no war

Christopher Clary, PhD in political science from MIT, MA in national security affairs, postdoctoral fellow, Watson Institute for International Studies, Brown University, “Economic Stress and International Cooperation: Evidence from International Rivalries”, 4/25/15, <http://poseidon01.ssrn.com/delivery.php?ID=719105092024097121124100018083011118038069081083039091121092126090087109098065027066123029119022059121027020065094083094082064017078060077029075100073095001126072113085042032004073009085104092002020027086072104017023079122098123108013079003000082124078&EXT=pdf>, MIT political science department

Do economic downturns generate pressure for diversionary conflict? Or might downturns encourage austerity and economizing behavior in foreign policy? This paper provides new evidence that economic stress is associated with conciliatory policies between strategic rivals. For states that view each other as military threats, the biggest step possible toward bilateral cooperation is to terminate the rivalry by taking political steps to manage the competition. Drawing on data from 109 distinct rival dyads since 1950, 67 of which terminated, the evidence suggests rivalries were approximately twice as likely to terminate during economic downturns than they were during periods of economic normalcy. This is true controlling for all of the main alternative explanations for peaceful relations between foes (democratic status, nuclear weapons possession, capability imbalance, common enemies, and international systemic changes), as well as many other possible confounding variables. This research questions existing theories claiming that economic downturns are associated with diversionary war, and instead argues that in certain circumstances peace may result from economic troubles. I define a rivalry as the perception by national elites of two states that the other state possesses conflicting interests and presents a military threat of sufficient severity that future military conflict is likely. Rivalry termination is the transition from a state of rivalry to one where conflicts of interest are not viewed as being so severe as to provoke interstate conflict and/or where a mutual recognition of the imbalance in military capabilities makes conflict-causing bargaining failures unlikely. In other words, rivalries terminate when the elites assess that the risks of military conflict between rivals has been reduced dramatically. This definition draws on a growing quantitative literature most closely associated with the research programs of William Thompson, J. Joseph Hewitt, and James P. Klein, Gary Goertz, and Paul F. Diehl.1 My definition conforms to that of William Thompson. In work with Karen Rasler, they define rivalries as situations in which “[b]oth actors view each other as a significant politicalmilitary threat and, therefore, an enemy.”2 In other work, Thompson writing with Michael Colaresi, explains further: The presumption is that decisionmakers explicitly identify who they think are their foreign enemies. They orient their military preparations and foreign policies toward meeting their threats. They assure their constituents that they will not let their adversaries take advantage. Usually, these activities are done in public. Hence, we should be able to follow the explicit cues in decisionmaker utterances and writings, as well as in the descriptive political histories written about the foreign policies of specific countries.3 Drawing from available records and histories, Thompson and David Dreyer have generated a universe of strategic rivalries from 1494 to 2010 that serves as the basis for this project’s empirical analysis.4 This project measures rivalry termination as occurring on the last year that Thompson and Dreyer record the existence of a rivalry. Economic crises lead to conciliatory behavior through five primary channels. (1) Economic crises lead to austerity pressures, which in turn incent leaders to search for ways to cut defense expenditures. (2) Economic crises also encourage strategic reassessment, so that leaders can argue to their peers and their publics that defense spending can be arrested without endangering the state. This can lead to threat deflation, where elites attempt to downplay the seriousness of the threat posed by a former rival. (3) If a state faces multiple threats, economic crises provoke elites to consider threat prioritization, a process that is postponed during periods of economic normalcy. (4) Economic crises increase the political and economic benefit from international economic cooperation. Leaders seek foreign aid, enhanced trade, and increased investment from abroad during periods of economic trouble. This search is made easier if tensions are reduced with historic rivals. (5) Finally, during crises, elites are more prone to select leaders who are perceived as capable of resolving economic difficulties, permitting the emergence of leaders who hold heterodox foreign policy views. Collectively, these mechanisms make it much more likely that a leader will prefer conciliatory policies compared to during periods of economic normalcy. This section reviews this causal logic in greater detail, while also providing historical examples that these mechanisms recur in practice. Economic Crisis Leads to Austerity Economic crises generate pressure for austerity. Government revenues are a function of national economic production, so that when production diminishes through recession, revenues available for expenditure also diminish. Planning almost invariably assumes growth rather than contraction, so the deviation in available revenues compared to the planned expenditure can be sizable. When growth slowdowns are prolonged, the cumulative departure from planning targets can grow even further, even if no single quarter meets the technical definition of recession. Pressures for austerity are felt most acutely in governments that face difficulty borrowing to finance deficit expenditures. This is especially the case when this borrowing relies on international sources of credit. Even for states that can borrow, however, intellectual attachment to balanced budgets as a means to restore confidence—a belief in what is sometimes called “expansionary austerity”—generates incentives to curtail expenditure. These incentives to cut occur precisely when populations are experiencing economic hardship, making reductions especially painful that target poverty alleviation, welfare programs, or economic subsidies. As a result, mass and elite constituents strongly resist such cuts. Welfare programs and other forms of public spending may be especially susceptible to a policy “ratchet effect,” where people are very reluctant to forego benefits once they have become accustomed to their availability.6 As Paul Pierson has argued, “The politics [of welfare state] retrenchment is typically treacherous, because it imposes tangible losses on concentrated groups of voters in return for diffuse and uncertain gains.”7 Austerity Leads to Cutbacks in Defense Spending At a minimum, the political costs of pursuing austerity through cutbacks in social and economic expenditures alone make such a path unappealing. In practice, this can spur policymakers to curtail national security spending as a way to balance budgets during periods of economic turmoil. There is often more discretion over defense spending than over other areas in the budget, and it is frequently distantly connected to the welfare of the mass public. Many militaries need foreign arms and foreign ammunition for their militaries, so defense expenditures are doubly costly since they both take up valuable defense budget space while also sending hard currency overseas, rather than constituencies at home. Pursuing defense cuts may also conform to the preferences of the financial sector, which shows a strong aversion to military conflict even if that means policies of appeasement and conciliation.8 During periods of economic expansion, the opportunity costs associated with defense expenditure—the requirement for higher taxes or foregone spending in other areas—are real but acceptable. Economic contraction heightens the opportunity costs by forcing a choice between different types of spending. There is a constituency for defense spending in the armed services, intelligence agencies, and arms industries, but even in militarized economies this constituency tends to be numerically much smaller than those that favor social and economic expenditures over military ones. Defense Cutbacks Encourage Rapprochement An interest in defense cutbacks can lead to conciliatory behavior through two paths. First, the cutbacks themselves serve as a concrete signal to adversaries that the military threat posed by the economically distressed state is declining. This permits the other state to halt that portion of defense spending dedicated to keeping up, breaking the back of ongoing arms races through reciprocated, but non-negotiated moves. Unilateral conventional force reductions were a major element of Gorbachev’s foreign policy in the late 1980s, alongside negotiated strategic arms control, and diplomatic efforts to achieve political understandings with the United States.9 Gorbachev similarly used force reductions in Afghanistan, Mongolia, and the Soviet Far East to signal to China in 1987 that he was serious about political negotiations.10 Elsewhere, non-negotiated, tit-for-tat military redeployments facilitated Argentina-Brazil rapprochement.11 Second, leaders may believe cutbacks are necessary, but would be dangerous in the absence of negotiated improvements with traditional foes. Economic downturns can serve as motivation to pursue arms control or political settlement. During periods of normalcy, such outcomes would be positives, but are viewed as “too hard” by political leaders that move from one urgent problem to the next. During periods of economic crisis, however, arms control or political improvements might allow for much needed cuts in defense spending, and are pursued with greater vigor. The Johnson administration attempted both unilateral and negotiated arms limitations because of budgetary concerns as President Johnson and Secretary McNamara struggled to pay for the “Great Society” domestic programs and the increasingly costly Vietnam War. They first attempted unilateral “caps” on costly nuclear forces and anti-ballistic missile defenses and when this failed to lead to a reciprocal Soviet response they engaged in formal arms control talks. Détente continued in the Nixon administration, accelerating in 1971 and 1972, simultaneous with rising budget deficits and inflation so serious that Nixon instituted price controls. Nixon’s decision to sharply limit anti-ballistic missile defenses to enable arms control talks was contrary to his strategic views, but necessitated by a difficult budgetary environment that made paying for more missile defense emplacements unrealistic.12 As Nixon told his national security advisor Kissinger in an April 1972 discussion of ballistic missile and anti-ballistic missile developments: “You know we've got a hell of a budget problem. We've got to cut it down, we've got to cut 5 billion dollars off next year's defense budget. So, I don't want to [inaudible: do it?] unless we've got some settlement with the Russians.”13 In practice, unilateral defense cuts and force reductions are frequently combined with negotiated political agreements in a sequential, iterative fashion, where a unilateral reduction will signal seriousness that opens the way for political agreement, which in turn permits even deeper reductions. Defense cuts and force reductions are not only a means to achieve rivalry termination, but also a goal in and of themselves that rivalry termination helps secure. Leaders are seeking resources from defense they can use elsewhere. Thus when Argentine leader Raul Alfonsín campaigned for the need for drastic budgetary austerity, his specific “platform was the reduction of military spending to use it for the other ministries, connected with the concept of eliminating the hypothesis of conflict” with Argentinian rivals, according to Adalberto Rodríguez Giavarini, who served in Alfonsín’s ministry of defense (and later was Argentina’s foreign minister).14 Similarly, Gorbachev was motivated to reduce arms in the late 1980s because he determined it was necessary to cut Soviet defense spending and defense production, and repurpose part of the defense industry to make consumer and civilian capital goods, according to contemporary U.S. Central Intelligence Agency classified assessments.15 Thus the “main reason” why strategic arms control breakthroughs occurred from 1986 to 1988 and the Soviet Afghan intervention concluded in 1989 was a realization within the Politburo of “excessively high expenditures on defense,” according to Nikolai Ryzhkov, Gorbachev’s prime minister.16 Economic Downturns Provoke Strategic Reassessment: Threat Deflation and Prioritization Economic downturns encourage leaders to seek new ideas to use to frame their policy problems. During periods of economic difficulty, elites can come to realize that their problems are not amenable to old solutions, and search for new ideas.17 During an economic crisis, politics and policy are “more fluid,” as old answers seem stale and insufficient.18 An ideational entrepreneur that can link economic lemons to foreign policy lemonade can find a patron when leaders are casting about for ways to reframe the world in acceptable ways to their peers and publics. The behavior of an old foe is often ambiguous, and can be viewed as either injurious to one’s interests or neutral toward them. During periods of normalcy, the motivation of defense establishments is tilted toward threat and danger. During periods of economic crisis, national leaders have a counteracting motivation to downplay such dangers, so that the threats faced by a nation are manageable through available resources. Economic difficulties provide a motivation for leaders to view equivocal signals from the international system in a way that is benign. To the extent that rivalries are perpetuated because of threat inflation, economic downturns provide incentives to deflate the threat, potentially disrupting cycles of competition and enmity. South Korean president Kim Dae-jong came to power in the aftermath of the 1998 Asian economic crisis, pursued a “sunshine policy” toward the North, cut South Korean defense spending in nominal and real terms, and pursued a policy toward North Korea that political scientist Dong Sun Lee called “threat deflation” despite the growing North Korean nuclear weapons threat.19 Economic crises can also spur strategic reassessment through another channel. If leaders view economic problems as structural, rather than a temporary gale, they may come to question whether available national resources are sufficient to confront all of the national threats identified in the past. This creates incentives to economize threats, seeking political settlements where possible in order to focus remaining resources on competitions that can be won. A concrete example: in 1904, the chancellor to the Exchequer wrote his cabinet colleagues: “[W]e must frankly admit that the financial resources of the United Kingdom are inadequate to do all that we should desire in the matter of Imperial defense.”20 The result was a British decision to minimize political disagreement with the United States and focus on other defense challenges. While such a decision is in line with realist advice, it occurred not when the power trajectories were evident to British decisionmakers but when the budget situation had reached a crisis that could no longer be ignored. Economic Downturns Increase Incentives for International Economic Cooperation Economic downturns not only create incentives to cut spending, they encourage vigorous pursuit of opportunities for economic cooperation. This, too, can engender conciliatory behavior. Economic downturns can increase motives to pursue trade and investment. Rivalries with old foes often directly impinge on trade and investment with the adversary and may indirectly impinge on trade and investment with third parties, especially if the rivalry is viewed as being likely to generate disruptive military conflict. Additionally, economic aid is sometimes used as an inducement for adversaries to set aside a political dispute. This aid can either serve as a side payment from one rival to another, or it can be offered by a third party to one or both rivals as an incentive to set aside lingering disputes. Such aid is more attractive during periods of economic turmoil than during periods of comparative normalcy. In South Asia, India and Pakistan struggled from 1947 to 1960 with how to manage water resources in the Indus Rivers basin, inheriting a canal system meant to service pre-partitioned India. Pakistan, suffering an economic downturn, and India, reliant on foreign aid to avert economic crisis, agreed to an Indus Waters Treaty in 1960 to resolve the lingering dispute, made possible in substantial part because of World Bank financing that was especially attractive to the struggling economies. In the Middle East, Egypt and Israel made the hard choices necessary for the Camp David accord in 1979 precisely because the Sadat and Begin governments faced difficult economic situations at home that made the U.S. aid guarantee in exchange for a peace agreement especially attractive.21 In 1982, the Yemen’s People’s Republic agreed to stop its attempts to destabilize Oman, because otherwise Yemen would not receive economic assistance from Arab oil producing states that it desperately needed.22 In the late 1990s, El Niño-induced flooding devastated Ecuador and Peru, spurring reconciliation as leaders sought to increase trade, secure investment, and slash military expenditures so they could be used at home.23 As one Western diplomat assessed at the time, Ecuador and Peru “have decided it's better to see reason…. They see foreign companies eager to invest in South America, and if Peru and Ecuador are in conflict, it makes them less attractive than, say, Argentina or Brazil or Chile for investment purposes. That's the last thing either country wants.”24 Economic Downturns Can Cause Meaningful Leadership Change The above mechanisms have identified how economic difficulties can alter the preferences of an incumbent leader. Additionally, economic crises can lead to leadership turnover and, during periods of difficulty, the selection process that determines new leadership can loosen ideological strictures that relate to extant rivalries. Leaders may be selected based on judgments about their ability to cope with economic problems, with greater elite acceptance of ideological heterogeneity in foreign policy beliefs than in periods of normalcy.25 In Stephen Brooks and William Wohlforth’s words, “If everything is going well or is stable, then why select leaders who might subvert the triedand-true identity? But if that identity is leading to increased material difficulties, pressure for change will likely mount. In these circumstances, those who are willing to alter or adjust the hallowed precepts of the existing identity and its associated practices are more likely to assume power.”26 Economic crisis, then, can spur incumbent leaders to either abandon the “baggage” of rivalry or facilitate the selection of new leaders that do not carry such baggage. The most well-known example of an incumbent selectorate looking for a reformer, even one without much foreign policy experience, involves Mikhail Gorbachev’s ascension to the Soviet premiership.

#### Economic growth guarantees civilizational collapse by 2050 – decoupling is impossible and tech is a pipeline dream

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Although driven by political, institutional, and discursive processes, growth is also biophysical. The economic process converts energy, resources, and matter to goods, services, and waste (34). In theory, it seems possible to decouple material throughput from economic output by improving the resource efficiency of production. Ecological economists, however, argue that in practice absolute decoupling is unlikely, even though relative decoupling is common (34). Efficiency should not be confused with scale (35): The more efficiently we use resources, the lower they cost, and the more of them we end up using (36). This is, in essence, growth. Just as increases in labor productivity lead to growth and new jobs, not to less employment, increases in resource productivity increase output and resource use (37). Capitalist economies grow by using more resources and more people, more intensively. Accelerating this is unlikely to spare resources.

Growth can become “cleaner” or “greener” by substituting, for example, fossil fuels with solar power, or scarce, environmentally intensive metals with more abundant and less intensive metals. But new substitutes have resource requirements, and life-cycle impacts that cross space and time. Energy is a vital source of useful work (38); growth has been possible because fossil fuels did things human labor alone could not do. Ending the use of fossil fuels is likely to reduce labor productivity and limit output (34). Solar and wind power are constrained only by their rate of flow, but unlike fossil fuels, they are diffuse—more like rain than a lake (3). To collect and concentrate a diffuse flow of energy, more energy is necessary and more land is required. The EROIs (energy returns on energy investment) of renewable energies are between 10:1 and 20:1, compared to more than 50:1 for earlier deposits of oil and coal (39). An economy powered by a diffuse energy flow is then likely to be an economy of lower net energy and lower output than one powered by concentrated stocks (3). Land use for solar or wind also competes with the use of land for food production, and rare materials are necessary for infrastructures and batteries that store their intermittent flows, with significant environmental effects.

Historical data corroborate ecological economic theory (40). Ayres & Warr (38) find that the use of net energy after conversion losses explains a big portion of the United States’ total factor productivity and economic growth. At the global level, GDP and material use have increased approximately 1:1. Carbon emissions have increased somewhat slower than GDP, but still have increased (34). This is unlikely to be a coincidence. Exceptions may exist, but cross-panel data analysis shows that overall, 1% growth of a national economy is associated with 0.6% to 0.8% increase in its carbon emissions (41) and 0.8% growth in its resource use (42).

Global resource use follows currently the “collapse by 2050” scenario foreseen in the “Limits to Growth” 1971 report (43–45). Domestic material use in some developed OECD economies has reached a plateau, but this is because of globalization and trade. If we take into account imported goods, then the material requirements of products and services consumed in OECD countries have grown hand in hand with GDP, with no decoupling (46). For water use, the effects of growth overwhelm any realistic savings from technologies and efficiency (47); water footprints have increased even in regions such as California where water withdrawals were stabilized (40).

Carbon emissions in some EU (European Union) countries have been declining, even after trade is taken into account, suggesting some substitution of fossil fuels by cleaner energies. [Although recession also played a role (34).] These declines are nowhere near the 8–10%, year-afteryear reductions in carbon emissions required for developed nations under scenarios compatible with a 50% chance of limiting warming to 2◦C (48). Further reductions will be harder to sustain once one-off substitutions of oil or coal with natural gas are exhausted (34).

Resource use or carbon emissions are a product of the scale of the economy (GDP) times its resource or carbon intensity (kg/GDP or kgCO2/GDP). With 1.5% annual increase in global income per capita, carbon intensity has to decline 4.4% each year for staying within 2◦C; with 0% growth, carbon intensity has to fall 2.9% each year (49). In the period 1970–2013, the average annual reduction rate for carbon intensity was less than 1.5%—and this gets harder to sustain as the share of carbon-intensive economies in global output increases (49). As Jackson (50) showed in his seminal work, it is practically impossible to envisage viable climate mitigation scenarios that involve growth. This calls for research on managing, or prospering, without growth (50, 51).

Some scenarios deem possible meeting climate targets while sustaining growth, but these generally assume after 2050 some sort of “negative emissions technology,” geo-engineering or otherwise. According to a recent Nature editorial, these technologies remain currently “magical thinking” (52). Clean energy investments can stimulate the economy in the short run, but in the long run growth may be limited by their low EROIs. Studies suggest that economic growth requires a minimum EROI of close to 11:1 (53). Less EROI means less labor productivity, and hence less growth. Indeed, “Limits to Growth” scenarios do not predict growth ending when resources are exhausted but, rather, when the quality of resources declines to such an extent that further extraction diverts more and more investment away from productive industry (44).

Degrowth is defined by ecological economists as an equitable downscaling of throughput, with a concomitant securing of wellbeing. If there is a fundamental coupling of economic activity and resource use, as ecological economics suggests there is, then serious environmental or climate policies will slow down the economy. Vice versa, a slower economy will use less resources and emit less carbon (40). This is not the same as saying that the degrowth goal is to reduce GDP (54); slowing down the economy is not an end but a likely outcome in a transition toward equitable wellbeing and environmental sustainability.

#### Only stopping growth solves extinction from eco collapse – decoupling is impossible even under perfect conditions, and transition dangers are overhyped

Hickel 18 [Jason Hickel is an anthropologist, author, and a fellow of the Royal Society of Arts. Why Growth Can’t Be Green. Foreign Policy Magazine. September 12, 2018. https://foreignpolicy.com/2018/09/12/why-growth-cant-be-green/]

Warnings about ecological breakdown have become ubiquitous. Over the past few years, major newspapers, including the Guardian and the New York Times, have carried alarming stories on soil depletion, deforestation, and the collapse of fish stocks and insect populations. These crises are being driven by global economic growth, and its accompanying consumption, which is destroying the Earth’s biosphere and blowing past key planetary boundaries that scientists say must be respected to avoid triggering collapse.

Many policymakers have responded by pushing for what has come to be called “green growth.” All we need to do, they argue, is invest in more efficient technology and introduce the right incentives, and we’ll be able to keep growing while simultaneously reducing our impact on the natural world, which is already at an unsustainable level. In technical terms, the goal is to achieve “absolute decoupling” of GDP from the total use of natural resources, according to the U.N. definition.

It sounds like an elegant solution to an otherwise catastrophic problem. There’s just one hitch: New evidence suggests that green growth isn’t the panacea everyone has been hoping for. In fact, it isn’t even possible.

Green growth first became a buzz phrase in 2012 at the United Nations Cosnference on Sustainable Development in Rio de Janeiro. In the run-up to the conference, the World Bank, the Organization for Economic Cooperation and Development, and the U.N. Environment Program all produced reports promoting green growth. Today, it is a core plank of the U.N. Sustainable Development Goals.

But the promise of green growth turns out to have been based more on wishful thinking than on evidence. In the years since the Rio conference, three major empirical studies have arrived at the same rather troubling conclusion: Even under the best conditions, absolute decoupling of GDP from resource use is not possible on a global scale.

A team of scientists led by the German researcher Monika Dittrich first raised doubts in 2012. The group ran a sophisticated computer model that predicted what would happen to global resource use if economic growth continued on its current trajectory, increasing at about 2 to 3 percent per year. It found that human consumption of natural resources (including fish, livestock, forests, metals, minerals, and fossil fuels) would rise from 70 billion metric tons per year in 2012 to 180 billion metric tons per year by 2050. For reference, a sustainable level of resource use is about 50 billion metric tons per year—a boundary we breached back in 2000.

The team then reran the model to see what would happen if every nation on Earth immediately adopted best practice in efficient resource use (an extremely optimistic assumption). The results improved; resource consumption would hit only 93 billion metric tons by 2050. But that is still a lot more than we’re consuming today. Burning through all those resources could hardly be described as absolute decoupling or green growth.

In 2016, a second team of scientists tested a different premise: one in which the world’s nations all agreed to go above and beyond existing best practice. In their best-case scenario, the researchers assumed a tax that would raise the global price of carbon from $50 to $236 per metric ton and imagined technological innovations that would double the efficiency with which we use resources. The results were almost exactly the same as in Dittrich’s study. Under these conditions, if the global economy kept growing by 3 percent each year, we’d still hit about 95 billion metric tons of resource use by 2050. Bottom line: no absolute decoupling.

Finally, last year the U.N. Environment Program—once one of the main cheerleaders of green growth theory—weighed in on the debate. It tested a scenario with carbon priced at a whopping $573 per metric ton, slapped on a resource extraction tax, and assumed rapid technological innovation spurred by strong government support. The result? We hit 132 billion metric tons by 2050. This finding is worse than those of the two previous studies because the researchers accounted for the “rebound effect,” whereby improvements in resource efficiency drive down prices and cause demand to rise—thus canceling out some of the gains.

Study after study shows the same thing. Scientists are beginning to realize that there are physical limits to how efficiently we can use resources. Sure, we might be able to produce cars and iPhones and skyscrapers more efficiently, but we can’t produce them out of thin air. We might shift the economy to services such as education and yoga, but even universities and workout studios require material inputs. Once we reach the limits of efficiency, pursuing any degree of economic growth drives resource use back up.

These problems throw the entire concept of green growth into doubt and necessitate some radical rethinking. Remember that each of the three studies used highly optimistic assumptions. We are nowhere near imposing a global carbon tax today, much less one of nearly $600 per metric ton, and resource efficiency is currently getting worse, not better. Yet the studies suggest that even if we do everything right, decoupling economic growth with resource use will remain elusive and our environmental problems will continue to worsen.

Preventing that outcome will require a whole new paradigm. High taxes and technological innovation will help, but they’re not going to be enough. The only realistic shot humanity has at averting ecological collapse is to impose hard caps on resource use, as the economist Daniel O’Neill recently proposed. Such caps, enforced by national governments or by international treaties, could ensure that we do not extract more from the land and the seas than the Earth can safely regenerate. We could also ditch GDP as an indicator of economic success and adopt a more balanced measure like the genuine progress indicator (GPI), which accounts for pollution and natural asset depletion. Using GPI would help us maximize socially good outcomes while minimizing ecologically bad ones.

But there’s no escaping the obvious conclusion. Ultimately, bringing our civilization back within planetary boundaries is going to require that we liberate ourselves from our dependence on economic growth—starting with rich nations. This might sound scarier than it really is. Ending growth doesn’t mean shutting down economic activity—it simply means that next year we can’t produce and consume more than we are doing this year. It might also mean shrinking certain sectors that are particularly damaging to our ecology and that are unnecessary for human flourishing, such as advertising, commuting, and single-use products.

But ending growth doesn’t mean that living standards need to take a hit. Our planet provides more than enough for all of us; the problem is that its resources are not equally distributed. We can improve people’s lives right now simply by sharing what we already have more fairly, rather than plundering the Earth for more. Maybe this means better public services. Maybe it means basic income. Maybe it means a shorter working week that allows us to scale down production while still delivering full employment. Policies such as these—and countless others—will be crucial to not only surviving the 21st century but also flourishing in it.

### 1NC – Case

#### They don't solve their aff -- all they do is ensure companies only get one protection per invention -- either orphan drug rights, a patent, or data exclusivity -- but theres no brightline for whats a new or old invention, so they cant stop evergreening. Companies will just slightly modify their invention and get a separate new patent and the aff has no litmus test for when an invention is significantlly new/different enough from past inventions

#### Your author pulls warrants from a misleading and incomplete database – dates aren’t updated, protections are misidentified, and years are wrong.

**C-Ip 3/4** (C-Ip2, 3-4-2021, "UC Hastings’ Evergreen Drug Patent Search Database: A Look Behind the Statistics Reveals Problems with this Approach to Identifying and Quantifying So-Called “Evergreening”," Center for Intellectual Property x Innovation Policy, <https://cip2.gmu.edu/2021/03/04/uc-hastings-evergreen-drug-patent-search-database-a-look-behind-the-statistics-reveals-problems-with-this-approach-to-identifying-and-quantifying-so-called-evergreening/#_ftn1>)The problems we have identified with the statistics provided by the Evergreening Database are numerous and multifaceted, and it would be beyond the scope of a single blog post to try to address them all. Instead, we have decided to focus on a single drug, ranolazine, which is used to treat angina and marketed by Gilead under the tradename Ranexa. There is nothing particularly unique about ranolazine—the problems with its statistics are representative of what we have generally observed to be pervasive throughout the Database. The ranolazine entry caught our attention because it purports to show that the drug was a subject of a relatively large number of “protections” (24 of them) and 13 years of “additional protection time,” even though the total time between the approval of the drug and expiration of all associated patents and exclusivities was only a little more than 13 years—about five years less than the average term of a U.S. patent. We will start with an initial explanation of the methodology underlying the Evergreening Database. As mentioned above, the statistics are derived from out-of-date versions of the FDA’s Orange Book, which is published on the FDA’s website and provides information on patents and “exclusivities” associated with FDA-approved drugs. The exclusivities can be any of a variety of non-patent regulatory exclusivities that Congress created to reward innovators that have achieved certain outcomes that Congress sought to incentivize. Examples include the “NCE exclusivity”—five years of data exclusivity awarded for the initial approval of a new active ingredient, i.e., a “new chemical entity”—and the seven years of orphan drug exclusivity awarded to an innovator that develops a drug for a rare disease or condition. The Orange Book provides a listing of these exclusivities, as well as a list of patents relating to the approved drug (i.e., patents claiming the drug’s active ingredient, formulations of the drug, and methods of using the drug). It also provides expiration dates for the patent and exclusivities. The FDA periodically revises the Orange Book, and when it does, it removes from the lists any patents and exclusivities that have expired. The creators of the Evergreening Database compiled this historical data in a Comma Separated Values file (“the CSV file”). The Database uses the patents and exclusivities derived from the CSV file to generate various statistics for each drug, including a total number of “protections” and “extensions,” as well as the “earliest protection date,” “latest protection date,” and the number of “months of additional protection” (which is the time between the earliest protection date and the latest protection date). Presumably, these statistics are intended to shed some light on the purported evergreening practices of pharmaceutical companies. Now let us turn to ranolazine. The Evergreening Database entry for ranolazine provides the New Drug Application (“NDA”) number for the drug (21526), the branded product name (Ranexa), the name of the innovator company associated with the branded drug (Gilead), and the date of FDA approval (January 27, 2006). The ranolazine entry also provides various statistics derived from the raw data, including the number of “protections” (26) and the amount of “additional protection time” (156 months, i.e., 13 years). This seems to provide an example of evergreening. The statistics appear to show that Gilead gamed the system to “artificially extend the protection horizon of its patents” by 13 years. However, a closer examination of the raw data tells a quite different story. First, what are the 26 purported “protections” that Gilead has apparently secured with respect to Ranexa? Eleven of them are patents that were once listed in the Orange Book for the drug. All the listed patents have expired, so none appear in the current Orange Book. While the Database lists the patents, it does not include expiration dates, which are necessary to understand the “protection time” statistics. Worse, the Database provides no information with respect to the other 15 “protections,” i.e., non-patent exclusivities. With some effort, the missing information can be found in the CSV file. The following step-by-step instructions will hopefully make it easier for others interested in following this path. Beginning on the homepage for the Evergreening Database, click on the “About the Data” hyperlink, which will take you to another page which states: To download the original dataset, that was used to develop the results for the article May Your Drug Price Be Evergreen, along with information about researching the FDA’s Orange Book, please see:

#### Secondary patents are necessary for innovation of otherwise mediocre drugs—core to cancer and HIV treatments

**Holman 2018** (Christopher, Professor of Law, University of Missouri-Kansas City School of Law. “Why Follow-On Pharmaceutical Innovations Should Be Eligible For Patent Protection” <https://www.ip-watch.org/2018/09/21/follow-pharmaceutical-innovations-eligible-patent-protection/> September 21, 2018)DR 21

The attack on secondary pharmaceutical patents is based in part on the flawed premise that follow-on innovation is of marginal value at best, and thus less deserving of protection than the primary inventive act of identifying and validating a new drug active ingredient. In fact, follow-on innovation can play a critical role in transforming an interesting drug candidate into a safe and effective treatment option for patients. A good example can be seen in the case of AZT (zidovudine), a drug ironically described in the Guidelines as the “first breakthrough in AIDS therapy.” AZT began its life as a failed attempt at a cancer drug, and it was **only years later that its potential application in the fight against AIDS was realized**. Follow-on research resulted in **a method-of-use patent** directed towards the use of AZT in the treatment of AIDS, and it was this patent that incentivized the investment necessary to bridge the gap between a promising drug candidate and a safe, effective, and FDA-approved pharmaceutical. Significantly, because of the long lag time between the first public disclosure of AZT and the discovery of its use in the treatment of AIDS, patent protection for the molecule per se was unavailable. In a world where follow-on innovation is unpatentable, there would have been no patent incentive to invest in the development of the drug, and without that incentive AZT might have languished on the shelf as simply one more failed drug candidate.

Other examples of important drugs that likely never would have been made available to patients without the availability of a “secondary” patent include Evista (raloxifene, **used in the treatment of** osteoporosis and to reduce the risk of invasive breast cancer), Zyprexa (olanzapine, used in the treatment of schizophrenia), and an orally-administrable formulation of the antibiotic cefuroxime.

Pharmaceutical development is prolonged and unpredictable, and frequently a safe and effective drug occurs only as a result of follow-on innovation occurring long after the initial synthesis and characterization of a pharmaceutically interesting chemical compound. The inventions protected by secondary patents can be just as critical to the development of drugs as a patent on **the active ingredient itself.**

#### One and done model kills innovation—chilling effect

**Magiera 2021** (Melissa S., J.D. Candidate, 2021, Indiana UniversityRobert H. McKinney School of Law; B.S. 2017, Indiana University Purdue University Indianapolis – Indianapolis, Indiana. Recipient of the Papke Prize for Best Note in Volume 54, endowed by and named in honor of David R. Papke, former R. Bruce Townsend Professor of Law and faculty advisor to the Indiana Law Review “Leaving the Evergreening Problem to the Patent Experts--The USPTO, the PTAB, and the Federal Circuit” Indiana Law Review, 54(1), 195-220.)DR 21

Additionally, the pharmaceutical industry spends millions of dollars in researching new uses or safer ways to administer known drugs.94 A new use or method of administering or making a known drug should be rewarded with a patent; if not, many pharmaceutical companies will treat the discovered drugs as “one-and-dones.” 95 Patents are meant to be issued for innovations, not for products.96 Just because a patent is granted on a medicine does not mean that the innovation relating to the drug ends; in fact, many pharmaceutical companies continue to research “new ways to make the medicine, new populations who can benefit from its use, better ways to get it to and into patients, and new versions that expand options for patents.” 97 The effect of this legislation, if enacted, likely would be to focus on lowering the price of medicine for patients at the cost of denying rightful patents to pharmaceutical companies that could have made new medical advances for the good of society. 98 Any pharmaceutical company would be scrutinized for any additional innovation of a drug and may be subject to penalties.99 Eventually, this means that the pharmaceutical companies could halt further research on any patented drug, even if there is a better, undiscovered use for that drug. 100 If enacted, the legislation could also “erode[] incentives and threaten[] innovation,” which is what the patent system was created to protect. 101