# 1NC

## 1

### 1NC – T

#### Interp: Reductions must be permanent, that’s distinct from a suspension

Reynolds 59 [J. Reynolds “Matter of Montesani v. Levitt” From: Appellate Division of the Supreme Court in the Third Judicial Department, August 13, 1959] [https://casetext.com/case/matter-of-montesani-v-levitt] || SM

Section 83's counterpart with regard to nondisability pensioners, section 84, prescribes a reduction only if the pensioner should again take a public job. The disability pensioner is penalized if he takes any type of employment. The reason for the difference, of course, is that in one case the only reason pension benefits are available is because the pensioner is considered incapable of gainful employment, while in the other he has fully completed his "tour" and is considered as having earned his reward with almost no strings attached. It would be manifestly unfair to the ordinary retiree to accord the disability retiree the benefits of the System to which they both belong when the latter is otherwise capable of earning a living and had not fulfilled his service obligation. If it were to be held that withholdings under section 83 were payable whenever the pensioner died or stopped his other employment the whole purpose of the provision would be defeated, i.e., the System might just as well have continued payments during the other employment since it must later pay it anyway. The section says "reduced", does not say that monthly payments shall be temporarily suspended; it says that the pension itself shall be reduced. The plain dictionary meaning of the word is to diminish, lower or degrade. The word "reduce" seems adequately to indicate permanency.

#### Violation: The aff plan is the TRIPS waiver which is explicitly temporary

WTO 7-21 [World Trade Organization “TRIPS Council agrees to continue discussions on IP response to COVID-19” Published: July 20, 2021; Accessed: September 5, 2021] [https://www.wto.org/english/news\_e/news21\_e/trip\_20jul21\_e.htm] || SM

At a meeting of the Council for Trade-Related Aspects of Intellectual Property Rights (TRIPS) on 20 July 2021, WTO members agreed to continue consideration of the proposal for a temporary waiver of certain TRIPS obligations in response to COVID-19 and other related proposals. Members approved a status report which they tasked the chair to deliver at the General Council at its next meeting on 27-28 July.

#### It’s also clear from their cards, they say “temporary waiver” many times

#### Standards:

#### 1] Limits and ground – Their model allows infinite random suspensions to IP for any reason. Kills neg ground cuz the core of the rez is about an overall reduction of IP protections, not a temporary suspension.

#### 2] Extra T is a voter – means the res is no longer a stable basis and they can defend whatever they want which kills neg engagement and clash.

#### Drop the debater:

#### 1] The abuse already occurred and shifted my time allocation

#### 2] It’s the same as DTA since we indict your whole aff

#### Use Competing Interps for T:

#### 1] There’s no way to be “reasonably” topical, it’s a yes/no binary

#### 2] Reasonability collapses since we use offense defense to determine what’s reasonable

## 2

### 1NC – T

#### Interpretation: The aff must defend all member nations of the WTO reduce IP protections, they can’t specify

#### Violation: They only defend \_\_\_ but the WTO has 164 members

<https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm>

#### Standards:

#### 1] Semantics – “The” indicates reference to a noun as a whole

Webster’s 5 (Merriam Webster’s Online Dictionary, http://www.m-w.com/cgi-bin/dictionary)

4 -- used as a function word before a noun or a substantivized adjective to indicate reference to a group as a whole <the elite>

#### Semantics first – A] key to predictability since the res is the only stable stasis point for pre round prep, B] the only brightline for affs is topical or not and their model allows affs to be completely non-T, C] pragmatics collapses to semantics cuz our interp of the res is based on the textbook definition

#### 2] Limits and Ground – Their model allows them to defend any of 164 states and their INFINITE permutations. Generics don’t work since each has its own political situation and the aff will always be ahead. Leads to random state of the week affs which destroys reciprocal prep burden.

#### 3] TVA Solves – read the aff as an advantage and defend whole res. PICs don’t matter cuz they have built in asymmetry solvency deficits.

#### Cross apply voters from the previous shell.

## 3

### 1NC – CP – COVID Vaccines

#### Counterplan Text: The US should contract with vaccine manufacturers to buy and distribute vaccines to developing countries at no cost.

#### The CP solves access to covid vaccines, gives companies the incentive they need to manufacture

Kazaz PhD et al 21 [Burak Kazaz, Scott Webster, Prashant Yadav “Incentivizing COVID-19 Vaccine Developers to Expand Manufacturing Capacity” Published: Center for Global Development, March 2021] [https://www.cgdev.org/publication/incentivizing-covid-19-vaccine-developers-expand-manufacturing-capacity] [Kazaz: PhD from Purdue, Kannert School of Management. Professor of Supply Chain Management at the Whitman School of Management, Syracuse University.] [Webster: Professor and Chair in supply chain management at the W.P. Carey School of Business at Arizona State University. Previously worked at Syracuse, Wisco, Queens University in Canada. PhD in operations management and decision sciences from Indiana University.] [Yadav: Senior fellow at the Center for Global Development and Affiliate Professor of Technology and Operations Management at INSEAD. Previously worked as Strategy Leader-Supply Chain at the Bill and Melinda Gates Foundation, Professor of Supply Chain Management at the MIT-Zargoza International Logistics Program.] || SM

We examine three types of instruments that can be used by national governments, development finance institutions, and supranational agencies to incentivize manufacturing capacity expansion: capacity subsidy, concessional loan and volume guarantee. Our findings suggest that

1. A full loan for the capital expenditure is never sufficient to increase the vaccine developer’s capacity to the social investor’s preferred level.

2. When the forecasts of the vaccine developer and the social investor are aligned, the least costly instrument in each of the scenarios analyzed is the combination of a concessional loan with additional capacity subsidy.

3. When the medium-term demand forecast of the social investor is higher than the vaccine developer (in both scenarios of 25% and 50% greater demand), volume guarantee is the only viable instrument to incentivize socially optimal manufacturing capacity.

Depending on the differences in the social investor’s and the vaccine developer’s forecast of future vaccine demand, either a concessional loan combined with capacity subsidy or a demand/volume guarantee are the best ways to incentivize vaccine developers to expand production capacity. Such instruments should be evaluated not only for final steps of vaccine manufacturing capacity, but for all critical inputs, such as glass vials, lipids, and single-use bioreactors. The framework developed can be easily extended to evaluate the least expensive instruments for expanding capacity of key input materials.

The success and applicability of specific instruments depends on policy cooperation across country governments, global agencies, private philanthropies, and development finance institutions who are all working to figure out ways expand vaccine production. But if we can achieve policy cooperation and select the right instruments as described in this note, we can expand production capacity to serve global needs. Expanding production will speed up the pace of vaccination across countries and will reduce the ongoing conflicts over access to scarce vaccine doses.

#### The Aff misses the boat on vaccine roadblocks and kills development due to private sector dropout, government coop is key

Hamre interviews Coons 4-22 [John Hamre interviews Senator Chris Coons “The Importance of Intellectual Property in Healthcare Innovation during COVID-19” Published: CSIS, April 22, 2021] [https://www.csis.org/analysis/importance-intellectual-property-healthcare-innovation-during-covid-19] [Coons: B.A. in Chem and Poli Sci from Amherst. JD from Yale Law School, masters in ethics from Yale Divinity School. Junior Senator from Delaware] || SM

There is a move right now at the WTO by a number of countries – India and South Africa in particular – and some in our own country, and some of my colleagues here in the Senate to try and press for a broad waiver of IP rights – as if somehow IP rights have been a critical impediment to the availability of vaccines and therapeutics. Everything I’ve seen suggests that’s not the case. That some of the barriers to scaling up manufacturing and distribution of vaccines and therapeutics at the scale and on the timeline the world needs are just that – barriers to manufacturing and distribution.

And that the willingness of the key inventors and developers of mRNA vaccines and other vaccines and other therapeutics – their willingness to license and to manufacture and distribute at cost or as donations – these vital tools in the global war on this COVID pandemic suggests that it’s not IP rights that are really centrally at issue. In fact, if anything, IP has enabled historic licensing and partnerships. Some of the IP waivers and some of the collaboration that’s happened in the midst of this pandemic I think points to the ways in which IP has actually not been a barrier, but a facilitator of critical, cutting-edge innovation.

If we were to simply open up to the world all of the IP at the core of these groundbreaking developments, I think we would then be at risk of losing the private sector investment and development that’s critical to this moment of personalized medicine, of breakthrough vaccines, of breakthrough medical diagnostics. And I think, frankly, I think the world would suffer as a result. So as I said, I don’t think that waiving IP rights will suddenly enable other countries the ability to ramp up the manufacturing of complex vaccines. Instead, I am urging that the Biden administration and the private sector work together in a coordinated effort to manufacture, distribute, and administer vaccines rapidly and equitably globally.

## 4

### 1NC – DA

#### Midterms are super close but Dems are using Republican abortion bills to rally voters to the polls and tip them in their favor

Godfrey 9-3 [Elaine Godfrey “Is This How Democrats Break Their Midterm Curse?” Published: The Atlantic, September 3, 2021] [https://www.theatlantic.com/politics/archive/2021/09/texas-abortion-law-means-midterms/619966/] [Godfrey: Staff writer at the Atlantic, covering politics. Iowa State University B.S. in Journalism and Mass Communication, Minor in Political Science.] || SM

The new Texas law that bans abortion after a fetal heartbeat is detected—and which the Supreme Court has so far declined to block—is an enormous blow to abortion rights in America. But Democrats, who tend to support abortion access, aren’t all doom-and-gloom about the measure. The thinking among some in the party goes like this: An abortion ban is terrible for women—but it’s great for ginning up voter enthusiasm.

Democrats need the help. Republicans generally show up to the polls much more consistently in off-year elections, and next year, the primary target of Democratic voters’ ire—Donald Trump—won’t be on the ballot. Democrats have spent the past few months trying to decide how to zap their voters back to attention, and the party appears to have settled on a strategy of telling voters that Republicans are all extremists. They see the Texas abortion law as an example they can run with. “When you have Joe Biden in the White House and a Democratic Congress, you feel a little more calm than you did the last four years. You think you can watch Bachelor in Paradise in peace,” Lanae Erickson, a vice president at the moderate think tank Third Way, told me. “But this shows what the stakes really are.”

Democrats have public opinion on their side: Abortion bans aren’t broadly popular in any state, and although the Texas law isn’t a full ban, it comes close—and it will allow Democrats to paint Republicans as hard-liners who are out of touch with public opinion. This issue could very well be the tipping point in districts that are heavily suburban, with a lot of educated women. “It’s ultimately possible that Democrats are going to break their midterm curse,” the progressive pollster Sean McElwee told me. McElwee says his firm, Data for Progress, has already seen a jump in its own small-dollar donations following the Texas law’s passage. The Texas law allows private citizens to sue abortion providers and anyone else who “aids or abets” an abortion, and he expects that “each individual civil suit is going to be a rage-inducing piece of content for Democratic small-dollar donor fundraisers.”

#### The aff is massively unpopular – majority of voters oppose the aff – regardless of political affiliation

Schulte 5-4 [Gabriela Schulte, 5-4-2021, “Poll: Majority oppose proposal to temporarily waive intellectual property rights on COVID-19 vaccines” The Hill, Accessed 8-11-2021, <https://thehill.com/hilltv/what-americas-thinking/551797-poll-majority-oppose-proposal-to-temporarily-waive-intellectual> ww

A majority of voters oppose the proposal to temporarily waive intellectual property rights on COVID-19 vaccines, a new Hill-HarrisX poll finds.¶ The survey comes as the Biden administration faces mounting pressure to support a proposal led by India and South Africa that would waive an international intellectual property agreement that protects pharmaceutical trade secrets.¶ Backers of the move argue it would enable lower-income countries to manufacture the vaccines themselves while those opposed say it could make the vaccine less safe and damper production in existing locations.¶ Fifty-seven percent of registered voters in the May 3-4 survey said they oppose the proposal to waive intellectual property rights on COVID-19 vaccines. By contrast, 43 percent of respondents said they support the proposal. ¶ Sixty-four percent of Republican voters along with 52 percent of both Democratic and independent voters said they oppose waiving the intellectual property rights of vaccines.¶ "This is a complex issue with a remarkably sophisticated understanding by the public. The tension is as follows: On one hand you have the need to protect the intellectual property rights of the scientists and companies that brought about the fastest vaccine in history, and will likely need to produce new versions of the shot even faster to battle evolving strains," Dritan Nesho, chief researcher and CEO of HarrisX, told Hill.TV.¶ "On the other hand there’s the need to save lives, reaching global heard immunity and providing access to the vaccine as broadly and equitably as as possible," Nesho continued.¶ "Today a majority of 57 percent of U.S. voters would like to protect the intellectual property of vaccine makers, but as more and more people are vaccinated in advanced economies, voter pressure for broader and more equitable distribution will rise," Nesho added. "Already we see Democrats and independents here split on the issue of whether or not to waive IP rights to provide greater access to the vaccines."¶ President Biden is expected to weigh in on the proposal at a World Trade Organization meeting on Wednesday.¶ The most recent Hill-HarrisX poll was conducted online among 939 registered voters. It has a margin of error of 3.2 percentage points.

#### Midterm success k2 long term climate initiatives

Piotrowski et al 20 [Matt Piotrowski and Emma McMahon and Joshua McBee and Kyle Saukas, 12-14-2020, “Biden’s Climate Path Through the 2022 Midterms” Climate Advisers, <https://climateadvisers.org/blogs/bidens-climate-path-up-to-the-2022-midterms/> ww

\*Figures omitted\*

Joe Biden ran on a climate change agenda and has laid out his plans for early action, but what might the ‘medium-term’ for climate action and the 2022 midterms look like?¶ Beyond 2021¶ Although the configuration of the current Senate is not yet decided, political operatives are already looking forward to the 2022 mid-term election. If Democrats do not win both special elections in Georgia in January 2021, they will not have the majority in the Senate, which, as noted in earlier blogs, will greatly hamper the Democrats’ legislative agenda and make wide-ranging climate legislation a virtual impossibility.¶ However, they could capture the majority in 2022. U.S. Senators serve six-year terms, meaning that the same seats are up for re-election on a rotating six-year schedule. The seats up for re-election in 2022 pose better opportunities for Democratic gains than did the elections in 2018 or 2020, with three vulnerable Republican seats (see Figure 1 below).¶ It is too soon to tell what will happen in the mid-term elections, but the most recent data show Republicans are well-positioned to take back the House. Still, some Democrats are confident they can hold onto the House. If Democrats win majorities in both houses of Congress in 2022, then the second half of the Biden administration’s term could, unusually, be more productive than his first. This would give him greater opportunity to pass comprehensive climate legislation, which could include a carbon tax, major investments in green technology and infrastructure, and regulation of the energy sector. If Republicans maintain their lead in the Senate, with or without a majority in the House, it is unlikely that any of these would pass during Biden’s presidency.¶ With Congress shifting its focus to the mid-term elections in 2022, the Biden administration will still take advantage of its ability to advance climate initiatives in the executive branch. Increasing the use of clean fuels through government procurement, particularly in the military, is one major goal. The U.S. government spends approximately $500 billion per year on procurement, providing a large opportunity to develop a zero-emission transportation fleet. There will also be opportunities in rewriting agency rules and regulations (President Trump rolled back more than 100 environmental rules), increasing research and development in programs such as the Department of Energy’s Advanced Research Projects Agency-Energy, and prioritizing the climate issue in diplomacy.¶ At the state and local level, Republicans performed better than expected in this year’s election, gaining seats in state legislatures, giving them the advantage in the redistricting process next year. Whichever party has the ability to redraw districts, which is done every 10 years, has the power to increase the number of districts in their favor. This dynamic may help Republicans retake the U.S. House of Representatives and hold onto the majority for some time as they did from 2010-18. In the map below, the Republicans hold both the legislatures and the governorships of the states in red.¶ These state-level legislatures and governorships could set the political map for a decade to come in Republicans’ favor. This could lead to more state-level opposition to President Biden’s executive actions. The recently failed attempt by Texas’ Attorney General to sue swing states whose electoral votes secured Biden’s victory that was supported by the Attorney Generals of 17 other states is an early-warning sign of state vs. federal animosity. Additionally, these state wins for Republicans could influence voting laws to favor Republicans to be elected at the Federal level, further frustrating Biden and future Democrats’ efforts to pursue ambitious climate legislation.

#### Extinction.

Kareiva 18 [Peter,Ph.D. in ecology and applied mathematics from Cornell University, director of the Institute of the Environment and Sustainability at UCLA, Pritzker Distinguished Professor in Environment & Sustainability at UCLA, et al., September 2018, “Existential risk due to ecosystem collapse: Nature strikes back,” Futures, Vol. 102, p. 39-50

In summary, six of the nine proposed planetary boundaries (phosphorous, nitrogen, biodiversity, land use, atmospheric aerosol loading, and chemical pollution) are unlikely to be associated with existential risks. They all correspond to a degraded environment, but in our assessment do not represent existential risks. However, the three remaining boundaries (climate change, global freshwater cycle, and ocean acidification) do pose existential risks. This is because of intrinsic positive feedback loops, substantial lag times between system change and experiencing the consequences of that change, and the fact these different boundaries interact with one another in ways that yield surprises. In addition, climate, freshwater, and ocean acidification are all directly connected to the provision of food and water, and shortages of food and water can create conflict and social unrest. Climate change has a long history of disrupting civilizations and sometimes precipitating the collapse of cultures or mass emigrations (McMichael, 2017). For example, the 12th century drought in the North American Southwest is held responsible for the collapse of the Anasazi pueblo culture. More recently, the infamous potato famine of 1846–1849 and the large migration of Irish to the U.S. can be traced to a combination of factors, one of which was climate. Specifically, 1846 was an unusually warm and moist year in Ireland, providing the climatic conditions favorable to the fungus that caused the potato blight. As is so often the case, poor government had a role as well—as the British government forbade the import of grains from outside Britain (imports that could have helped to redress the ravaged potato yields). Climate change intersects with freshwater resources because it is expected to exacerbate drought and water scarcity, as well as flooding. Climate change can even impair water quality because it is associated with heavy rains that overwhelm sewage treatment facilities, or because it results in higher concentrations of pollutants in groundwater as a result of enhanced evaporation and reduced groundwater recharge. Ample clean water is not a luxury—it is essential for human survival. Consequently, cities, regions and nations that lack clean freshwater are vulnerable to social disruption and disease. Finally, ocean acidification is linked to climate change because it is driven by CO2 emissions just as global warming is. With close to 20% of the world’s protein coming from oceans (FAO, 2016), the potential for severe impacts due to acidification is obvious. Less obvious, but perhaps more insidious, is the interaction between climate change and the loss of oyster and coral reefs due to acidification. Acidification is known to interfere with oyster reef building and coral reefs. Climate change also increases storm frequency and severity. Coral reefs and oyster reefs provide protection from storm surge because they reduce wave energy (Spalding et al., 2014). If these reefs are lost due to acidification at the same time as storms become more severe and sea level rises, coastal communities will be exposed to unprecedented storm surge—and may be ravaged by recurrent storms. A key feature of the risk associated with climate change is that mean annual temperature and mean annual rainfall are not the variables of interest. Rather it is extreme episodic events that place nations and entire regions of the world at risk. These extreme events are by definition “rare” (once every hundred years), and changes in their likelihood are challenging to detect because of their rarity, but are exactly the manifestations of climate change that we must get better at anticipating (Diffenbaugh et al., 2017). Society will have a hard time responding to shorter intervals between rare extreme events because in the lifespan of an individual human, a person might experience as few as two or three extreme events. How likely is it that you would notice a change in the interval between events that are separated by decades, especially given that the interval is not regular but varies stochastically? A concrete example of this dilemma can be found in the past and expected future changes in storm-related flooding of New York City. The highly disruptive flooding of New York City associated with Hurricane Sandy represented a flood height that occurred once every 500 years in the 18th century, and that occurs now once every 25 years, but is expected to occur once every 5 years by 2050 (Garner et al., 2017). This change in frequency of extreme floods has profound implications for the measures New York City should take to protect its infrastructure and its population, yet because of the stochastic nature of such events, this shift in flood frequency is an elevated risk that will go unnoticed by most people. 4. The combination of positive feedback loops and societal inertia is fertile ground for global environmental catastrophes. Humans are remarkably ingenious, and have adapted to crises throughout their history. Our doom has been repeatedly predicted, only to be averted by innovation (Ridley, 2011). However, the many stories of human ingenuity successfully addressing existential risks such as global famine or extreme air pollution represent environmental challenges that are largely linear, have immediate consequences, and operate without positive feedbacks. For example, the fact that food is in short supply does not increase the rate at which humans consume food—thereby increasing the shortage. Similarly, massive air pollution episodes such as the London fog of 1952 that killed 12,000 people did not make future air pollution events more likely. In fact it was just the opposite—the London fog sent such a clear message that Britain quickly enacted pollution control measures (Stradling, 2016). Food shortages, air pollution, water pollution, etc. send immediate signals to society of harm, which then trigger a negative feedback of society seeking to reduce the harm. In contrast, today’s great environmental crisis of climate change may cause some harm but there are generally long time delays between rising CO2 concentrations and damage to humans. The consequence of these delays are an absence of urgency; thus although 70% of Americans believe global warming is happening, only 40% think it will harm them (http://climatecommunication.yale.edu/visualizations-data/ycom-us-2016/). Secondly, unlike past environmental challenges, the Earth’s climate system is rife with positive feedback loops. In particular, as CO2 increases and the climate warms, that very warming can cause more CO2 release which further increases global warming, and then more CO2, and so on. Table 2 summarizes the best documented positive feedback loops for the Earth’s climate system. These feedbacks can be neatly categorized into carbon cycle, biogeochemical, biogeophysical, cloud, ice-albedo, and water vapor feedbacks. As important as it is to understand these feedbacks individually, it is even more essential to study the interactive nature of these feedbacks. Modeling studies show that when interactions among feedback loops are included, uncertainty increases dramatically and there is a heightened potential for perturbations to be magnified (e.g., Cox, Betts, Jones, Spall, & Totterdell, 2000; Hajima, Tachiiri, Ito, & Kawamiya, 2014; Knutti & Rugenstein, 2015; Rosenfeld, Sherwood, Wood, & Donner, 2014). This produces a wide range of future scenarios. Positive feedbacks in the carbon cycle involves the enhancement of future carbon contributions to the atmosphere due to some initial increase in atmospheric CO2. This happens because as CO2 accumulates, it reduces the efficiency in which oceans and terrestrial ecosystems sequester carbon, which in return feeds back to exacerbate climate change (Friedlingstein et al., 2001). Warming can also increase the rate at which organic matter decays and carbon is released into the atmosphere, thereby causing more warming (Melillo et al., 2017). Increases in food shortages and lack of water is also of major concern when biogeophysical feedback mechanisms perpetuate drought conditions. The underlying mechanism here is that losses in vegetation increases the surface albedo, which suppresses rainfall, and thus enhances future vegetation loss and more suppression of rainfall—thereby initiating or prolonging a drought (Chamey, Stone, & Quirk, 1975). To top it off, overgrazing depletes the soil, leading to augmented vegetation loss (Anderies, Janssen, & Walker, 2002). Climate change often also increases the risk of forest fires, as a result of higher temperatures and persistent drought conditions. The expectation is that forest fires will become more frequent and severe with climate warming and drought (Scholze, Knorr, Arnell, & Prentice, 2006), a trend for which we have already seen evidence (Allen et al., 2010). Tragically, the increased severity and risk of Southern California wildfires recently predicted by climate scientists (Jin et al., 2015), was realized in December 2017, with the largest fire in the history of California (the “Thomas fire” that burned 282,000 acres, https://www.vox.com/2017/12/27/16822180/thomas-fire-california-largest-wildfire). This catastrophic fire embodies the sorts of positive feedbacks and interacting factors that could catch humanity off-guard and produce a true apocalyptic event. Record-breaking rains produced an extraordinary flush of new vegetation, that then dried out as record heat waves and dry conditions took hold, coupled with stronger than normal winds, and ignition. Of course the record-fire released CO2 into the atmosphere, thereby contributing to future warming. Out of all types of feedbacks, water vapor and the ice-albedo feedbacks are the most clearly understood mechanisms. Losses in reflective snow and ice cover drive up surface temperatures, leading to even more melting of snow and ice cover—this is known as the ice-albedo feedback (Curry, Schramm, & Ebert, 1995). As snow and ice continue to melt at a more rapid pace, millions of people may be displaced by flooding risks as a consequence of sea level rise near coastal communities (Biermann & Boas, 2010; Myers, 2002; Nicholls et al., 2011). The water vapor feedback operates when warmer atmospheric conditions strengthen the saturation vapor pressure, which creates a warming effect given water vapor’s strong greenhouse gas properties (Manabe & Wetherald, 1967). Global warming tends to increase cloud formation because warmer temperatures lead to more evaporation of water into the atmosphere, and warmer temperature also allows the atmosphere to hold more water. The key question is whether this increase in clouds associated with global warming will result in a positive feedback loop (more warming) or a negative feedback loop (less warming). For decades, scientists have sought to answer this question and understand the net role clouds play in future climate projections (Schneider et al., 2017). Clouds are complex because they both have a cooling (reflecting incoming solar radiation) and warming (absorbing incoming solar radiation) effect (Lashof, DeAngelo, Saleska, & Harte, 1997). The type of cloud, altitude, and optical properties combine to determine how these countervailing effects balance out. Although still under debate, it appears that in most circumstances the cloud feedback is likely positive (Boucher et al., 2013). For example, models and observations show that increasing greenhouse gas concentrations reduces the low-level cloud fraction in the Northeast Pacific at decadal time scales. This then has a positive feedback effect and enhances climate warming since less solar radiation is reflected by the atmosphere (Clement, Burgman, & Norris, 2009). The key lesson from the long list of potentially positive feedbacks and their interactions is that runaway climate change, and runaway perturbations have to be taken as a serious possibility. Table 2 is just a snapshot of the type of feedbacks that have been identified (see Supplementary material for a more thorough explanation of positive feedback loops). However, this list is not exhaustive and the possibility of undiscovered positive feedbacks portends even greater existential risks. The many environmental crises humankind has previously averted (famine, ozone depletion, London fog, water pollution, etc.) were averted because of political will based on solid scientific understanding. We cannot count on complete scientific understanding when it comes to positive feedback loops and climate change.