## 1NC – Off

#### Interpretation: the affirmative may not spec a government

#### 1] The letter “A” is an indefinite article that modifies “just government” – the resolution must be proven true in all instances, not one particular instance

CCC ND Capital Community College [a nonprofit 501 c-3 organization that supports scholarships, faculty development, and curriculum innovation], “Articles, Determiners, and Quantifiers”, http://grammar.ccc.commnet.edu/grammar/determiners/determiners.htm#articles AG

The three articles — a, an, the — are a kind of adjective. The is called the definite article because it usually precedes a specific or previously mentioned noun; a and an are called indefinite articles because they are used to refer to something in a less specific manner (an unspecified count noun). These words are also listed among the noun markers or determiners because they are almost invariably followed by a noun (or something else acting as a noun). caution CAUTION! Even after you learn all the principles behind the use of these articles, you will find an abundance of situations where choosing the correct article or choosing whether to use one or not will prove chancy. Icy highways are dangerous. The icy highways are dangerous. And both are correct. The is used with specific nouns. The is required when the noun it refers to represents something that is one of a kind: The moon circles the earth. The is required when the noun it refers to represents something in the abstract: The United States has encouraged the use of the private automobile as opposed to the use of public transit. The is required when the noun it refers to represents something named earlier in the text. (See below..) If you would like help with the distinction between count and non-count nouns, please refer to Count and Non-Count Nouns. We use a before singular count-nouns that begin with consonants (a cow, a barn, a sheep); we use an before singular count-nouns that begin with vowels or vowel-like sounds (an apple, an urban blight, an open door). Words that begin with an h sound often require an a (as in a horse, a history book, a hotel), but if an h-word begins with an actual vowel sound, use an an (as in an hour, an honor). We would say a useful device and a union matter because the u of those words actually sounds like yoo (as opposed, say, to the u of an ugly incident). The same is true of a European and a Euro (because of that consonantal "Yoo" sound). We would say a once-in-a-lifetime experience or a one-time hero because the words once and one begin with a w sound (as if they were spelled wuntz and won). Merriam-Webster's Dictionary says that we can use an before an h- word that begins with an unstressed syllable. Thus, we might say an hisTORical moment, but we would say a HIStory book. Many writers would call that an affectation and prefer that we say a historical, but apparently, this choice is a matter of personal taste. For help on using articles with abbreviations and acronyms (a or an FBI agent?), see the section on Abbreviations. First and subsequent reference: When we first refer to something in written text, we often use an indefinite article to modify it. A newspaper has an obligation to seek out and tell the truth. In a subsequent reference to this newspaper, however, we will use the definite article: There are situations, however, when the newspaper must determine whether the public's safety is jeopardized by knowing the truth. Another example: "I'd like a glass of orange juice, please," John said. "I put the glass of juice on the counter already," Sheila replied. Exception: When a modifier appears between the article and the noun, the subsequent article will continue to be indefinite: "I'd like a big glass of orange juice, please," John said. "I put a big glass of juice on the counter already," Sheila replied. Generic reference: We can refer to something in a generic way by using any of the three articles. We can do the same thing by omitting the article altogether. A beagle makes a great hunting dog and family companion. An airedale is sometimes a rather skittish animal. The golden retriever is a marvelous pet for children. Irish setters are not the highly intelligent animals they used to be. The difference between the generic indefinite pronoun and the normal indefinite pronoun is that the latter refers to any of that class ("I want to buy a beagle, and any old beagle will do.") whereas the former (see beagle sentence) refers to all members of that class

#### 2] Government is an indefinite singular– the aff may not defend a specific set of governments

Nebel 20 [Jake Nebel is an assistant professor of philosophy at the University of Southern California and executive director of Victory Briefs. He writes a lot of this stuff lol – duh.] “Indefinite Singular Generics in Debate” Victory Briefs, 19 Sept 2020. no url AG

I agree that if “a democracy” in the resolution just meant “one or more democracy,” then a country-specific affirmative could be topical. But, as I will explain in this topic analysis, that isn’t what “a democracy” means in the resolution. To see why, we first need to back up a bit and review (or learn) the idea of generic generalizations.

The most common way of expressing a generic in English is through a *bare plural*. A bare plural is a plural noun phrase, like “dogs” and “cats,” that lacks an overt determiner. (A determiner is a word that tells us which or how many: determiners include quantifier words like “all,” “some,” and “most,” demonstratives like “this” and “those,” posses- sives like “mine” and “its,” and so on.) LD resolutions often contain bare plurals, and that is the most common clue to their genericity.

We have already seen some examples of generics that are not bare plurals: “A whale is a mammal,” “A beaver builds dams,” and “The woolly mammoth is extinct.” The first two examples use indefinite singulars—singular nouns preceded by the indefinite article “a”—and the third is a *definite singular* since it is preceded by the definite article “the.” Generics can also be expressed with *bare singulars* (“Syrup is viscous”) and even verbs (as we’ll see later on). The resolution’s “a democracy” is an indefinite singular, and so it very well might be—and, as we’ll soon see, is—generic.

But it is also important to keep in mind that, just as not all generics are bare plurals, not all bare plurals are generic. “Dogs are barking” is true as long as some dogs are barking. Bare plurals can be used in particular ways to express existential statements. The key question for any given debate resolution that contains a bare plural is whether that occurrence of the bare plural is generic or existential.

The same is true of indefinite singulars. As debaters will be quick to point out, some uses of the indefinite singular really do mean “some” or “one or more”: “A cat is on the mat” is clearly not a generic generalization about cats; it’s true as long as some cat is on the mat. The question is whether the indefinite singular “a democracy” is existential or generic in the resolution.

Now, my own view is that, if we understand the difference between existential and generic statements, and if we approach the question impartially, without any invest- ment in one side of the debate, we can almost always just tell which reading is correct just by thinking about it. It is clear that “In a democracy, voting ought to be compul- sory” doesn’t mean “There is one or more democracy in which voting ought to be com- pulsory.” I don’t think a fancy argument should be required to show this any more than a fancy argument should be required to show that “A duck doesn’t lay eggs” is a generic—a false one because ducks do lay eggs, even though some ducks (namely males) don’t. And if a debater contests this by insisting that “a democracy” is existen- tial, the judge should be willing to resolve competing claims by, well, judging—that is, by using her judgment. Contesting a claim by insisting on its negation or demanding justification doesn’t put any obligation on the judge to be neutral about it. (Otherwise the negative could make every debate irresolvable by just insisting on the negation of every statement in the affirmative speeches.) Even if the insistence is backed by some sort of argument, we can reasonably reject an argument if we know its conclusion to be false, even if we are not in a position to know exactly where the argument goes wrong. Particularly in matters of logic and language, speakers have more direct knowledge of particular cases (e.g., that some specific inference is invalid or some specific sentence is infelicitious) than of the underlying explanations.

But that is just my view, and not every judge agrees with me, so it will be helpful to consider some arguments for the conclusion that we already know to be true: that, even if the United States is a democracy and ought to have compulsory voting, that doesn’t suffice to show that, in a democracy, voting ought to be compulsory—in other words, that “a democracy” in the resolution is generic, not existential.

Second, existential uses of the indefinite, such as “A cat is on the mat,” are upward- entailing.3 This means that if you replace the noun with a more general one, such as “An animal is on the mat,” the sentence will still be true. So let’s do that with “a democracy.” Does the resolution entail “In a society, voting ought to be compulsory”? Intuitively not, because you could think that voting ought to be compulsory in democracies but not in other sorts of societies. This suggests that “a democracy” in the resolution is not existential.

#### It applies to government:

#### Upward entailment test – spec fails the upward entailment test because saying that China ought to have the unconditional right to strike does not entail that those governments ought to have the unconditional right to strike.

#### Adverb test – adding “usually” to the res doesn’t substantially change its meaning because a recognition is universal and permanent

#### Violation – they only defend the United States

#### Vote neg:

#### Semantics outweigh:

#### T is a constitutive rule of the activity and a basic aff burden – they agreed to debate the topic when they came here

#### Jurisdiction – you can’t vote aff if they haven’t affirmed the resolution

#### It’s the only stasis point we know before the round so it controls the internal link to engagement – there’s no way to use ground if debaters aren’t prepared to defend it

#### Standards:

#### Limits – there are 195 affs accounting for hundreds of governments— unlimited topics incentivize obscure affs that negs won’t have prep on – limits are key to reciprocal prep burden – potential abuse doesn’t justify foregoing the topic and 1AR theory checks PICs.

Banerjee 4/12 [(Vasabjit Banerjee, Assistant Professor of Political Science, Mississippi State University),”How many states and provinces are in the world?” , The Conversation, https://theconversation.com/how-many-states-and-provinces-are-in-the-world-157847, April 12, 2021] SS

There are 195 national governments recognized by the United Nations, but there are as many as nine other places with nationlike governments, including Taiwan and Kosovo, though they are not recognized by the U.N.

Most of these countries are divided into smaller sections, the way the U.S. is broken up into 50 states along with territories, like Puerto Rico and Guam, and a federal district, Washington, D.C.

They are not all called “states,” though: Switzerland has cantons, Bangladesh has divisions, Cameroon has regions, Germany has lander, Jordan has governorates, Montserrat has parishes, Zambia has provinces, and Japan has prefectures – among many other names.

#### Ground – spec guts core generics like the econ DA which rely on all governments having the unconditional right to strike because individual governments don’t have an impact on the global economy as a whole – also means there is no universal DA to spec affs

#### TVA solves – read as an advantage to whole rez

## 1NC – Case

Yes 1ar theory but reasonability and drop the arg – disincentives going all in on theory too early which kills topic ed and checks 2ar judge psychology - no such thing as infinite abuse in finite speech times and 2ar collapse solves the short 1ar – intervention’s inevitable so intervene for substance

### ! Turn

#### Chinese economic collapse is structurally inevitable

Dehejia 10/4 [(Vivek, Professor of Economics at Carleton University, Resident Senior Fellow in Political Economy at IDFC Institute, specializes in international trade, international aspects of economic development, international macroeconomics, PhD in Economics (1995) from Columbia University) “Is this the Schadenfreude moment for China sceptics?” Mint, 10/4/2021] JL

Yet, even absent contagion, the Evergrande saga is but the tip of the iceberg of an overheated and indebted property sector which potentially threatens the edifice of the larger Chinese economy and, therefore, indirectly the global economy too. In a fascinating long read, British-born historian Niall Ferguson makes just such a case (“Evergrande's Fall Shows How Xi Has Created a China Crisis", Bloomberg Opinion, 26 September *bloom.bg/3A9KCWI*).

As Ferguson observes, Evergrande is emblematic of a China that has developed in the past decade with an economic development paradigm premised on “urbanization on steroids". For all of the skyscrapers, both commercial and residential, that dot the landscape of Chinese cities, large and even small, many of them remain empty and their property developers unable to sell enough units to pay-off the debt incurred in putting up the buildings to begin with.

In other words, the property sector in China, larger even than in the US on the eve of the collapse of Lehman, is a ticking time bomb that could have significant macroeconomic consequences beyond the property and financial sectors through the impact on Chinese households, who are heavily invested in a property market that has been in bubble territory for some time. Citing research by Harvard economics professor Kenneth Rogoff and his co-author Yuanchen Yang of Beijing’s Tsinghua University, Ferguson notes that housing wealth accounts for a whopping 78% of total assets in China, much higher than the 35% share in the United States, for instance. The upshot is that consumer spending in China is, as per Rogoff-Yang, “significantly more sensitive to a decline in housing prices" than in the US. The impacts of a more generalized collapse in the property market in China could be large and consequential for the global economy.

For those with a long enough memory, none of these recent developments should come as a surprise. As long ago as 2004, economist James Dean and I argued, and as I summarized for *Mint* readers much later (“Will the elephant overshadow the dragon?", 5 March 2015 *bit.ly/3ixSLyx*), that the Chinese model is characterized by the glaring contradiction between ever-increasing economic freedoms and an authoritarian political dispensation. What is more, the economic development paradigm of the Chinese Communist authorities was focused on an infrastructure-driven, “build and they will come" model, in sharp contrast to, say, the Indian model in which the supply of new infrastructure is driven by the demand for it, rather than the reverse.

The consequence, as Dean and I argued in 2004, was a Chinese development success story that was something of a house of cards, and built upon excessive investment, including in housing—what the Austrian school of economics would call “malinvestment". Chinese growth statistics would, therefore, in an important sense be inflated. After all, if the economy grows rapidly because of a stock of property and infrastructure that ultimately will never be put to use, and which leads to the accumulation of large debts, such rapid growth may be unsustainable and, in a certain sense, illusory.

#### Collapse spills over

Domm 9/20 [(Patti, CNBC Markets Editor, responsible for news coverage of the markets and economy, former equities editor for the Americas at Reuters) “The global economy could feel the effects of China’s Evergrande crisis. Here’s what investors should know,” CNBC, 9/20/2021] JL

There is concern the already slowing China economy will be affected further and that could flow into other economies.

Chang said the Chinese government needs to act quickly since Evergrande is beginning to affect sentiment, after being ignored by global markets.

“It could be a self-fulfilling prophecy. This liquidity issue — real estate is so important to the Chinese economy and the financial well-being of so many Chinese families. Homeownership is over 90%,” said Chang. “So many people buy apartments as an investment, so if this thing is not contained, it could become a real black swan.”

The fact that China’s economy is so large could affect the rest of the world, Chang added. “If China were to have a serious economic issue because of China Evergrande, the rest of the global economy would have contagion from it.”

The Dow Jones Industrial Average ended Monday’s trading session down more than 600 points after steep stock market declines in Europe and Hong Kong and other parts of Asia. The 10-year Treasury yield, which moves opposite price, slid as low as 1.297% as investors sought safety in bonds.

#### Collapse spills over

Curry 9/21 [(Rachel, Business and Finance writer whose work has appeared in Medium, The Startup, Market Realist, Who What Why, Delaware Today, Newark Post, and AgriNews) “Here's What Could Happen If China's Economy Crashes,” Market Realist, 9/21/2021] JL

China accounts for about 20 percent of the world's population, and the country's manufacturing industry plays a pivotal role across the globe. An economic collapse could lead to plant shutdowns and shortages worldwide. Processed foods and groceries, technology parts, chemical fertilizers, cement, and steel are just a handful of industries that would be impacted.

#### Degrowth solves warming – infinite growth relies on burning fossil fuels, depleting natural resources, mining REMS, and pollution – COVID proves transition is possible

Herbert and Mastini 6/8 [(Joe Herbert, a doctoral researcher in Human Geography at Newcastle University) (Riccardo Mastini, a doctoral researcher in Political Ecology in the Institute of Environmental Science and Technology at the Autonomous University of Barcelona) “Economic Growth Can't Go Back to Normal If We Are to Solve the Ecological Crisis” Common Dreams, 6/8/2020] BC

The COVID-19 pandemic has delivered a sharp and sudden shock to the global economy’s usual diet of ever-expanding economic growth. Measures to tackle the virus have seen industries grind to a halt, and high streets become ghost towns. Experts are predicting the worst global recession since the 1930s, and the UK’s Gross Domestic Product (GDP) is forecast to fall by 14% in 2020.

For the beneficiaries of our existing economic system, this hit to growth is a waking nightmare.

Growth is heralded as a rising tide that lifts all boats, creating larger incomes and more jobs, as well as funding essential public services like healthcare and education. Strong and uninterrupted growth is considered an unquestionable good that benefits all of society.

The problems with growth

But what drives economic growth? Our economy relies on burning fossil fuels and depleting natural resources to expand production and consumption, while polluting the environment with the waste. Most of us are forced to work for wages in order to survive, creating the goods and services which generate growth, while a minority siphon off the profits. In 2018, 82% of new wealth created went to the world’s richest 1%, while the poorest half of the global population got nothing.

Most scientists agree that an unprecedented economic transformation is now needed to limit global temperature rise to 1.5°C and avert climate breakdown. Meanwhile, the destruction of ecosystems to claim land and resources in service of more economic growth is contributing to the sixth mass extinction of life on Earth.

“Green growth” has been touted as a solution to these problems. But recent research suggests that growth cannot be decoupled from environmental pressures at a scale or speed sufficient to halt ecological breakdown.

Transitioning to renewable energy can reduce carbon emissions, but it increases pressures on rare Earth minerals and land to build wind and solar farms. Reducing emissions in one country often involves exporting dirty production processes to another. When goods are made more efficient, they become cheaper to produce, and their lower ecological impact is often offset by increased consumption. Think of someone switching to a fuel efficient car but driving more often. Put simply, attempts at “greening” growth often shift, rather than eliminate, environmental impact.

Governments have taken action to reduce the spread of COVID-19 at the expense of economic growth. But as the post-pandemic recession kicks in, rebooting growth will be the priority. This would set us right back on the path of ecological catastrophe.

Yet, polling suggests a public appetite to prioritise wellbeing over growth in the post-COVID economy. To achieve this while tackling ecological crisis would require turning the current short-term disruption to growth into a long-term managed downscaling of the economy. As researchers, we work with a concept which can guide this task: degrowth.

Well-being without growth

Degrowth calls for a fundamental restructuring of the economy to reduce its ecological impact and improve well-being by abolishing economic growth as a social objective.

The pandemic will shrink the global economy, but not in a targeted way that downscales carbon-intensive sectors. For this reason, a degrowth transition would look very different to a crisis-driven recession such as the present one. Still, there are useful lessons to be drawn from COVID-19. Firstly, when confronted with a major crisis, we must stop activities that threaten well-being, regardless of the impact on growth.

Once we have established the necessary boundaries to protect well-being – whether it’s closing non-essential industries to prevent the spread of a virus, or curtailing those which threaten to push global warming beyond 1.5°C – our task as a society is to build an economy which helps everyone live well within those limits. For instance, the appeal during the pandemic to “stay home” could afterwards become “stay grounded”, as we scale down the enormously carbon-intensive aviation industry while expanding green public transport.

Secondly, COVID-19 has also prompted society to reconsider how we value different forms of labour. The heroes of the pandemic are those undervalued by our current economic system, often working for low wages or in poor conditions. They are, among others, the cleaners, shop workers, farmers, nurses, rubbish collectors, teachers, postal workers and food couriers. Feminist economists describe this work - disproportionately done by women - as the “reproductive economy”, so called because it provides the essential services on which the rest of society depends for its day to day functioning.

Lots of vital reproductive work also occurs outside of the waged labour market, such as care of relatives in family homes. If all this unwaged labour were paid, it’s estimated that its global value would total $10.8 trillion per year. A care income could support all those doing unpaid work caring for other people and their local environments.

Reproductive work is central to sustaining well-being, but it also tends to have a lower ecological impact than much of the industrial economy. For these reasons, a degrowth transition could reduce ecological degradation by shrinking the sectors that pollute the most, like the fossil fuel industry and aviation, while expanding reproductive sectors such as health care, education and ecosystems restoration.

The COVID-19 pandemic has undeniably created an upsurge of political imagination. Now, as the restructuring of the post-pandemic economy begins, we must resist the return to infinite growth. The future of life on Earth depends upon it.

**Warming causes extinction – any reduction should be prioritized above other impacts**

**Ramanathan et al. 17** [Veerabhadran Ramanathan is Victor Alderson Professor of Applied Ocean Sciences and director of the Center for Atmospheric Sciences at the Scripps Institution of Oceanography, University of California, San Diego, Dr. William Collins is an internationally recognized expert in climate modeling and climate change science. He is the Director of the Climate and Ecosystem Sciences Division (CESD) for the Earth and Environmental Sciences Area (EESA) at the Lawrence Berkeley National Laboratory (LBNL), Prof. Dr Mark Lawrence, Ph.D. is scientific director at the Institute for Advanced Sustainability Studies (IASS) in Potsdam, Örjan Gustafsson is a Professor in the Department of Environmental Science and Analytic Chemistry at Stockholm University, Shichang Kang is Professor, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences (CAS); CAS Center for Excellence in Tibetan Plateau Earth Sciences, and Molina, M.J., Zaelke, D., Borgford-Parnell, N., Xu, Y., Alex, K., Auffhammer, M., Bledsoe, P., Croes, B., Forman, F., Haines, A., Harnish, R., Jacobson, M.Z., Lawrence, M., Leloup, D., Lenton, T., Morehouse, T., Munk, W., Picolotti, R., Prather, K., Raga, G., Rignot, E., Shindell, D., Singh, A.K., Steiner, A., Thiemens, M., Titley, D.W., Tucker, M.E., Tripathi, S., & Victor, D., authors come from the following 9 countries - US, Switzerland, Sweden, UK, China, Germany, Australia, Mexico, India, “Well Under 2 Degrees Celsius: Fast Action Policies to Protect People and the Planet from Extreme Climate Change,” Report of the Committee to Prevent Extreme Climate Change, September 2017, http://www.igsd.org/wp-content/uploads/2017/09/Well-Under-2-Degrees-Celsius-Report-2017.pdf] TDI

Climate change is becoming an existential threat with warming in excess of 2°C within the next three decades and 4°C to 6°C within the next several decades. Warming of such magnitudes will expose as many as 75% of the world’s population to deadly heat stress in addition to disrupting the climate and weather worldwide. Climate change is an urgent problem requiring urgent solutions. This paper lays out urgent and practical solutions that are ready for implementation now, will deliver benefits in the next few critical decades, and places the world on a path to achieving the longterm targets of the Paris Agreement and near-term sustainable development goals. The approach consists of four building blocks and 3 levers to implement ten scalable solutions described in this report by a team of climate scientists, policy makers, social and behavioral scientists, political scientists, legal experts, diplomats, and military experts from around the world. These solutions will enable society to decarbonize the global energy system by 2050 through efficiency and renewables, drastically reduce short-lived climate pollutants, and stabilize the climate well below 2°C both in the near term (before 2050) and in the long term (post 2050). It will also reduce premature mortalities by tens of millions by 2050. As an insurance against policy lapses, mitigation delays and faster than projected climate changes, the solutions include an Atmospheric Carbon Extraction lever to remove CO2 from the air. The amount of CO2 that must be removed ranges from negligible, if the emissions of CO2 from the energy system and SLCPs start to decrease by 2020 and carbon neutrality is achieved by 2050, to a staggering one trillion tons if the carbon lever is not pulled and emissions of climate pollutants continue to increase until 2030.

There are numerous living laboratories including 53 cities, many universities around the world, the state of California, and the nation of Sweden, who have embarked on a carbon neutral pathway. These laboratories have already created 8 million jobs in the clean energy industry; they have also shown that emissions of greenhouse gases and air pollutants can be decoupled from economic growth. Another favorable sign is that growth rates of worldwide carbon emissions have reduced from 2.9% per year during the first decade of this century to 1.3% from 2011 to 2014 and near zero growth rates during the last few years. The carbon emission curve is bending, but we have a long way to go and very little time for achieving carbon neutrality. We need institutions and enterprises that can accelerate this bending by scaling-up the solutions that are being proven in the living laboratories. We have less than a decade to put these solutions in place around the world to preserve nature and our quality of life for generations to come. The time is now.

The Paris Agreement is an historic achievement. For the first time, effectively all nations have committed to limiting their greenhouse gas emissions and taking other actions to limit global temperature change. Specifically, 197 nations agreed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels,” and achieve carbon neutrality in the second half of this century.

The climate has already warmed by 1°C. The problem is running ahead of us, and under current trends we will likely reach 1.5°C in the next fifteen years and surpass the 2°C guardrail by mid-century with a 50% probability of reaching 4°C by end of century. Warming in excess of 3°C is likely to be a global catastrophe for three major reasons:

• Warming in the range of 3°C to 5°C is suggested as the threshold for several tipping points in the physical and geochemical systems; a warming of about 3°C has a probability of over 40% to cross over multiple tipping points, while a warming close to 5°C increases it to nearly 90%, compared with a baseline warming of less than 1.5°C, which has only just over a 10% probability of exceeding any tipping point.

**•** Health effects of such warming are emerging as a major if not dominant source of concern. Warming of 4°C or more will expose more than 70% of the population, i.e. about 7 billion by the end of the century, to deadly heat stress and expose about 2.4 billion to vector borne diseases such as Dengue, Chikengunya, and Zika virus among others. Ecologists and paleontologists have proposed that warming in excess of 3°C, accompanied by increased acidity of the oceans by the buildup of CO2 , can become a major causal factor for exposing more than 50% of all species to extinction. 20% of species are in danger of extinction now due to population, habitat destruction, and climate change.

The good news is that there may still be time to avert such catastrophic changes. The Paris Agreement and supporting climate policies must be strengthened substantially within the next five years to bend the emissions curve down faster, stabilize climate, and prevent catastrophic warmin**g**. To the extent those efforts fall short, societies and ecosystems will be forced to contend with substantial needs for adaptation—a burden that will fall disproportionately on the poorest three billion who are least responsible for causing the climate change problem**.**

Here we propose a policy roadmap with a realistic and reasonable chance of limiting global temperature to safe levels and preventing unmanageable climate change—an outline of specific science-based policy pathways that serve as the building blocks for a three-lever strategy that could limit warming to well under 2°C. The projections and the emission pathways proposed in this summary are based on a combination of published recommendations and new model simulations conducted by the authors of this study (see Figure 2). We have framed the plan in terms of four building blocks and three levers, which are implemented through 10 solutions. The first building block would be fully implementing the nationally determined mitigation pledges under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC). In addition, several sister agreements that provide targeted and efficient mitigation must be strengthened. Sister agreements include the Kigali Amendment to the Montreal Protocol to phase down HFCs, efforts to address aviation emissions through the International Civil Aviation Organization (ICAO), maritime black carbon emissions through the International Maritime Organization (IMO), and the commitment by the eight countries of the Arctic Council to reduce black carbon emissions by up to 33%. There are many other complementary processes that have drawn attention to specific actions on climate change, such as the Group of 20 (G20), which has emphasized reform of fossil fuel subsidies, and the Climate and Clean Air Coalition (CCAC). HFC measures, for example, can avoid as much as 0.5°C of warming by 2100 through the mandatory global phasedown of HFC refrigerants within the next few decades, and substantially more through parallel efforts to improve energy efficiency of air conditioners and other cooling equipment potentially doubling this climate benefit.

For the second building block, numerous subnational and city scale climate action plans have to be scaled up. One prominent example is California’s Under 2 Coalition signed by over 177 jurisdictions from 37 countries in six continents covering a third of world economy. The goal of this Memorandum of Understanding is to catalyze efforts in many jurisdictions that are comparable with California’s target of 40% reductions in CO2 emissions by 2030 and 80% reductions by 2050—emission cuts that, if achieved globally, would be consistent with stopping warming at about 2°C above pre-industrial levels. Another prominent example is the climate action plans by over 52 cities and 65 businesses around the world aiming to cut emissions by 30% by 2030 and 80% to 100% by 2050. There are concerns that the carbon neutral goal will hinder economic progress; however, real world examples from California and Sweden since 2005 offer evidence that economic growth can be decoupled from carbon emissions and the data for CO2 emissions and GDP reveal that growth in fact prospers with a green economy.

The third building block consists of two levers that we need to pull as hard as we can: one for drastically reducing emissions of short-lived climate pollutants (SLCPs) beginning now and completing by 2030, and the other for decarbonizing the global energy system by 2050 through efficiency and renewables. Pulling both levers simultaneously can keep global temperature rise below 2°C through the end of the century. If we bend the CO2 emissions curve through decarbonization of the energy system such that global emissions peak in 2020 and decrease steadily thereafter until reaching zero in 2050, there is less than a 20% probability of exceeding 2°C. This call for bending the CO2 curve by 2020 is one key way in which this report’s proposal differs from the Paris Agreement and it is perhaps the most difficult task of all those envisioned here. Many cities and jurisdictions are already on this pathway, thus demonstrating its scalability. Achieving carbon neutrality and reducing emissions of SLCPs would also drastically reduce air pollution globally, including all major cities, thus saving millions of lives and over 100 million tons of crops lost to air pollution each year. In addition, these steps would provide clean energy access to the world’s poorest three billion who are still forced to resort to 18th century technologies to meet basic needs such as cooking. For the fourth and the final building block, we are adding a third lever, ACE (Atmospheric Carbon Extraction, also known as Carbon Dioxide Removal, or “CDR”). This lever is added as an insurance against surprises (due to policy lapses, mitigation delays, or non-linear climate changes) and would require development of scalable measures for removing the CO2 already in the atmosphere. The amount of CO2 that must be removed will range from negligible, if the emissions of CO2 from the energy system and SLCPs start to decrease by 2020 and carbon neutrality is achieved by 2050, to a staggering one trillion tons, if CO2 emissions continue to increase until 2030, and the carbon lever is not pulled until after 2030. This issue is raised because the NDCs (Nationally Determined Contributions) accompanying the Paris Agreement would allow CO2 emissions to increase until 2030. We call on economists and experts in political and administrative systems to assess the feasibility and cost-effectiveness of reducing carbon and SLCPs emissions beginning in 2020 compared with delaying it by ten years and then being forced to pull the third lever to extract one trillion tons of CO2

The fast mitigation plan of requiring emissions reductions to begin by 2020, which means that many countries need to cut now, is urgently needed to limit the warming to well under 2°C. Climate change is not a linear problem. Instead, we are facing non-linear climate tipping points that can lead to self-reinforcing and cascading climate change impacts. Tipping points and selfreinforcing feedbacks are wild cards that are more likely with increased temperatures, and many of the potential abrupt climate shifts could happen as warming goes from 1.5°C in 15 years to 2°C by 2050, with the potential to push us well beyond the Paris Agreement goals.

Where Do We Go from Here?

A massive effort will be needed to stop warming at 2°C, and time is of the essence. With unchecked business-as-usual emissions, global warming has a 50% likelihood of exceeding 4ºC and a 5% probability of exceeding 6ºC in this century, raising existential questions for most, but especially the poorest three billion people. A 4ºC warming is likely to expose as many as 75% of the global population to deadly heat**.** Dangerous to catastrophic impacts on the health of people including generations yet to be born, on the health of ecosystems, and on species extinction have emerged as major justifications for mitigating climate change well below 2ºC, although we must recognize that the uncertainties intrinsic in climate and social systems make it hard to pin down exactly the level of warming that will trigger possibly catastrophic impacts. To avoid these consequences, we must act now, and we must act fast and effectively. This report sets out a specific plan for reducing climate change in both the near- and long-term. With aggressive urgent actions, we can protect ourselves. Acting quickly to prevent catastrophic climate change by decarbonization will save millions of lives, trillions of dollars in economic costs, and massive suffering and dislocation to people around the world. This is a global security imperative, as it can avoid the migration and destabilization of entire societies and countries and reduce the likelihood of environmentally driven civil wars and other conflicts.

Staying well under 2°C will require a concerted global effort. We must address everything from our energy systems to our personal choices to reduce emissions to the greatest extent possible. We must redouble our efforts to invent, test, and perfect systems of governance so that the large measure of international cooperation needed to achieve these goals can be realized in practice. The health of people for generations to come and the health of ecosystems crucially depend on an energy revolution beginning now that will take us away from fossil fuels and toward the clean renewable energy sources of the future. It will be nearly impossible to obtain other critical social goals, including for example the UN agenda 2030 with the Sustainable Development Goals, if we do not make immediate and profound progress stabilizing climate, as we are outlining here.

1. The Building Blocks Approach The 2015 Paris Agreement, which went into effect November 2016, is a remarkable, historic achievement. For the frst time, essentially all nations have committed to limit their greenhouse gas emissions and take other actions to limit global temperature and adapt to unavoidable climate change. Nations agreed to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels” and “achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century” (UNFCCC, 2015). Nevertheless, the initial Paris Agreement has to be strengthened substantially within fve years if we are to prevent catastrophic warming; current pledges place the world on track for up to 3.4°C by 2100 (UNEP, 2016b). Until now, no specifc policy roadmap exists that provides a realistic and reasonable chance of limiting global temperatures to safe levels and preventing unmanageable climate change. This report is our attempt to provide such a plan— an outline of specifc solutions that serve as the building blocks for a comprehensive strategy for limiting the warming to well under 2°C and avoiding dangerous climate change (Figure 1). The frst building block is the full implementation of the nationally determined mitigation pledges under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC) and strengthening global sister agreements, such as the Kigali Amendment to the Montreal Protocol to phase down HFCs, which can provide additional targeted, fast action mitigation at scale. For the second building block, numerous sub-national and city scale climate action plans have to be scaled up such as California’s Under 2 Coalition signed by 177 jurisdictions from 37 countries on six continents. The third building block is targeted measures to reduce emissions of shortlived climate pollutants (SLCPs), beginning now and fully implemented by 2030, along with major measures to fully decarbonize the global economy, causing the overall emissions growth rate to stop in 2020-2030 and reach carbon neutrality by 2050. Such a deep decarbonization would require an energy revolution similar to the Industrial Revolution that was based on fossil fuels. The fnal building block includes scalable and reversible carbon dioxide (CO2 ) removal measures, which can begin removing CO2 already emitted into the atmosphere. Such a plan is urgently needed. Climate change is not a linear problem. Instead, climate tipping points can lead to self-reinforcing, cascading climate change impacts (Lenton et al., 2008). Tipping points are more likely with increased temperatures, and many of the potential abrupt climate shifts could happen as warming goes from 1.5°C to 2°C, with the potential to push us well beyond the Paris Agreement goals (Drijfhout et al., 2015). In order to avoid dangerous climate change, we must address these concerns. We must act now, and we must act fast. Reduction of SLCPs will result in fast, near-term reductions in warming, while present-day reductions of CO2 will result in long-term climate benefts. This two-lever approach—aggressively cutting both SLCPs and CO2 –-will slow warming in the coming decades when it is most crucial to avoid impacts from climate change as well as maintain a safe climate many decades from now. To achieve the nearterm goals, we have outlined solutions to be implemented immediately. These solutions to bend down the rising emissions curve and thus bend the warming trajectory curve follow a 2015 assessment by the University of California under its Carbon Neutrality Initiative (Ramanathan et al., 2016). The solutions are clustered into categories of social transformation, governance improvement, market- and regulation-based solutions, technological innovation and transformation, and natural and ecosystem management. Additionally, we need to intensely investigate and pursue a third lever—ACE (Atmospheric Carbon Extraction). While many potential technologies exist, we do not know the extent to which they could be scaled up to remove the requisite amount of carbon from the atmosphere in order to achieve the Paris Agreement goals, and any delay in mitigation will demand increasing reliance on these technologies. Yet, there is still hope. Humanity can come together, as we have done in the past, to collaborate towards a common goal. We have no choice but to tackle the challenge of climate change. We only have the choice of when and how: either now, through the ambitious plan outlined here, or later, through radical adaptation and societal transformations in response to an ever-deteriorating climate system that will unleash devastating impacts—some of which may be beyond our capacity to fully adapt to or reverse for thousands of years.

2. Major Climate Disruptions: How Soon and How Fast? “Without adequate mitigation and adaptation, climate change poses unacceptable risks to global public health.” (WHO, 2016)

The planet has already witnessed nearly 1°C of warming, and another 0.6°C of additional warming is currently stored in the ocean to be released over the next two to four decades, if climate warming emissions are not radically reduced during that time (IPCC, 2013). The impacts of this warming on extreme weather, droughts, and foods are being felt by society worldwide to the extent that many think of this no longer as climate change but as climate disruption. Consider the business as usual scenario:

15 years from now: In 15 years, planetary warming will reach 1.5°C above pre-industrial global mean temperature (Ramanathan and Xu, 2010; Shindell et al., 2012). This exceeds the 0.5°C to 1°C of warming during the Eemian period, 115,000– 130,000 years ago, when sea-levels reached 6-9 meters (20-30 feet) higher than today (Hansen et al., 2016b). The impacts of this warming will affect us all yet will disproportionately affect the Earth’s poorest three billion people, who are primarily subsistence farmers that still rely on 18th century technologies and have the least capacity to adapt (IPCC, 2014a; Dasgupta et al., 2015). They thus may be forced to resort to mass migration into city slums and push across international borders (U.S. DOD, 2015). The existential fate of lowlying small islands and coastal communities will also need to be addressed, as they are primarily vulnerable to sea-level rise, diminishing freshwater resources, and more intense storms. In addition, many depend on fsheries for protein, and these are likely to be affected by ocean acidifcation and climate change. Climate injustice could start causing visible regional and international conficts. All of this will be exacerbated as the risk of passing tipping points increases (Lenton et al., 2008).

30 years from now: By mid-century, warming is expected to exceed 2°C, which would be unprecedented with respect to historical records of at least the last one million years (IPCC, 2014c). Such a warming through this century could result in sea-level rise of as much as 2 meters by 2100, with greater sea-level rise to follow. A group of tipping points are clustered between 1.5°C and 2°C (Figure 2) (Drijfhout et al., 2015). The melting of most mountain glaciers, including those in the Tibetan-Himalayas, combined with mega-droughts, heat waves, storms, and foods, would adversely affect nearly everyone on the planet.

80 years from now: In 80 years, warming is expected to exceed 4°C, increasing the likelihood of irreversible and catastrophic change (World Bank, 2013b). 4ºC warming is likely to expose as much as 75% of the global population to deadly heat (Mora et al., 2017). The 2°C and 4°C values quoted above and in other reports, however, are merely the central values with a 50% probability of occurrence (Ramanathan and Feng, 2008). There is a 5% probability the warming could be as high as 6°C due to uncertainties in the magnitude of amplifying feedbacks (see Section 4). This in turn could lead to major disruptions to natural and social systems, threatening food security, water security, and national security and fundamentally affecting the great majority of the projected 11.2 billion inhabitants of the planet in 2100 (UN DESA, 2015).

3. What Are the Wild Cards for Climate Disruption? Increasing the concentrations of greenhouse gases in the atmosphere increases radiative forcing (the difference between the amount of energy entering the atmosphere and leaving) and thus increases the global temperature (IPCC, 2013). However, climate wild cards exist that can alter the linear connection with warming and anthropogenic emissions by triggering abrupt changes in the climate (Lenton et al., 2008). Some of these wild cards have not been thoroughly captured by the models that policymakers rely on the most. These abrupt shifts are irreversible on a human time scale (<100 years) and will create a notable disruption to the climate system, condemning the world to warming beyond that which we have previously projected. These climate disruptions would divert resources from needed mitigation and upset mitigation strategies that we have already put in place.

1. Unmasking Aerosol Cooling: The frst such wild card is the unmasking of an estimated 0.7°C (with an uncertainty range of 0.3°C to 1.2°C) of the warming in addition to mitigating other aerosol effects such as disrupting rainfall patterns, by reducing emissions of aerosols such as sulfates and nitrates as part of air pollution regulations (Wigley, 1991; Ramanathan and Feng, 2008). Aerosol air pollution is a major health hazard with massive costs to public health and society, including contributing to about 7 million deaths (from household and ambient exposure) each year (WHO, 2014). While some aerosols, such as black carbon and brown carbon, strongly absorb sunlight and warm the climate, others refect sunlight back into space, which cools the climate (Ramanathan and Carmichael, 2008). The net impact of all manmade aerosols is negative, meaning that about 30% of the warming from greenhouse gases is being masked by co-emitted air pollution particles (Ramanathan and Carmichael, 2008). As we reduce greenhouse gas emissions and implement policies to eliminate air pollution, we are also reducing the concentration of aerosols in the air. Aerosols last in the atmosphere for about a week, so if we eliminate air pollution without reducing emissions of the greenhouse gases, the unmasking alone would lead to an estimated 0.7°C of warming within a matter of decades (Ramanathan and Feng, 2008). We must eliminate all aerosol emissions due to their health effects, but we must simultaneously mitigate emissions of CO2 , other greenhouse gases, and black carbon and co-pollutants to avoid an abrupt and very large jump in the near-term warming beyond 2°C (Brasseur and Roeckner, 2005).

2. Tipping Points**:** It is likely that as we cross the 1.5°C to 2°C thresholds we will trigger so called “tipping points” for abrupt and nonlinear changes in the climate system with catastrophic consequences for humanity and the environment (Lenton, 2008; Drijfhout et al., 2015). Once the tipping points are passed, the resulting impacts will range in timescales from: disruption of monsoon systems (transition in a year), loss of sea ice (approximately a decade for transition), dieback of major forests (nearly half a century for transition), reorganization of ocean circulation (approximately a century for transition), to loss of ice sheets and subsequent sea-level rise (transition over hundreds of years) (Lenton et al., 2008). Regardless of timescale, once underway many of these changes would be irreversible (Lontzek et al., 2015). There is also a likelihood of crossing over multiple tipping points simultaneously. Warming of close to 3°C would subject the system to a 46% probability of crossing multiple tipping points, while warming of close to 5°C would increase the risk to 87% (Cai et al., 2016). Recent modeling work shows a “cluster” of these tipping points could be triggered between 1.5°C and 2°C warming (Figure 2), including melting of land and sea ice and changes in highlatitude ocean circulation (deep convection) (Drijfhout et al., 2015). This is consistent with existing observations and understanding that the polar regions are particularly sensitive to global warming and have several potentially imminent tipping points. The Arctic is warming nearly twice as quickly as the global average, which makes the abrupt changes in the Arctic more likely at a lower level of global warming (IPCC, 2013). Similarly, the Himalayas are warming at roughly the same rate as the Arctic and are thus also more susceptible to incremental changes in temperature (UNEP-WMO, 2011). This gives further justifcation for limiting warming to no more than 1.5°C.

While all climate tipping points have the potential to rapidly destabilize climate, social, and economic systems, some are also self-amplifying feedbacks that once set in motion increase warming in such a way that they perpetuate yet even more warming. Declining Arctic sea ice, thawing permafrost, and the poleward migration of cloud systems are all examples of self-amplifying feedback mechanisms, where initial warming feeds upon itself to cause still more warming acting as a force multiplier (Schuur et al., 2015).

#### Growth is terminally unsustainable and contradictory – no decoupling

Dhara and Singh 6/20 [(Chirag, physicist and climatologist at Krea University in Indiana, and Vandana, Associate Professor and Chair of the Department of Physics and Earth Science at Framingham State University in Massachusetts) “The Delusion of Infinite Economic Growth,” Scientific American, 6/20/2021] JL

Let us imagine the “perfect” EV: solar powered, efficient, reliable and affordable. But is it sustainable? EVs powered by renewable energy may help reduce the carbon footprint of transport. Yet, the measure of sustainability is not merely the carbon footprint but the material footprint: the aggregate quantity of biomass, metal ores, construction minerals and fossil fuels used during production and consumption of a product. The approximate metric tonne weight of an EV constitutes materials such as metals (including rare earths), plastics, glass and rubber. Therefore, a global spike in the demand for EVs would drive an increased demand for each of these materials.

Every stage of the life cycle of any manufactured product exacts environmental costs: habitat destruction, biodiversity loss and pollution (including carbon emissions) from extraction of raw materials, manufacturing / construction, through to disposal. Thus, it is the increasing global material footprint that is fundamentally the reason for the twin climate and ecological crises.

The global material footprint has grown in lockstep with the exponentially rising global economy (GDP) since the industrial revolution. This is largely because of egregious consumption by the super-affluent in a socioeconomic system founded on growth without limits. Can we resolve this fundamental conflict between the quest for limitless growth and the consequent environmental destruction?

Technological innovation and efficiency improvements are often cited as pathways to decouple growth in material use from economic growth. While technology undoubtedly has a crucial role to play in the transition to a sustainable world, it is constrained by fundamental physical principles and pragmatic economic considerations.

Examples abound. The engine efficiency of airplanes has improved little for decades since they have long been operating close to their theoretical peak efficiency. Likewise, there is a hard limit on the efficiency of photovoltaic cells of about 35 percent because of the physical properties of the semiconductors that constitute them; in practice few exceed 20 percent for economic and pragmatic reasons. The power generation of large wind farms is limited to about one watt per square meter as a simple yet utterly unavoidable physical consequence of wake effects. The awesome exponential increase in computing power of the past five decades will end by about 2025 since it is physically impossible to make the transistors on the computer chip, already roughly 5 percent of the size of the coronavirus, much smaller.

Whether it is principles of classical, quantum or solid state physics or thermodynamics, each places different but inexorable constraints on technological solutions. Basically, physical principles that have allowed incredible technological leaps over the past century also inevitably limit them. We might consider that extensive recycling of materials would offset efficiency limits. Recycling is crucial; however, while glass and metals can be recycled almost indefinitely without loss of quality, materials such as paper and plastic can be recycled only a few times before becoming too degraded.

Additionally, recycling itself may be an energy- and materials-intensive process. Even if physical laws could be broken (they cannot) to achieve recycling with 100 percent efficiency, added demand from the imperative for economic growth would necessarily require virgin materials. The key point is that efficiency is limited by physics, but there is no sufficiency limit on the socioeconomic construct of “demand.”

Unfortunately, the situation is even more dire. Economic growth is required to be exponential; that is, the size of the economy must double in a fixed period. As referenced earlier, this has driven a corresponding increase in the material footprint. To understand the nature of exponential growth, consider the EV. Suppose that we have enough (easily extractable) lithium for the batteries needed to fuel the EV revolution for another 30 years. Now assume that deep-sea mining provides four times the current amount of these materials. Are we covered for 120 years? No, because the current 10 percent rate of growth in demand for lithium is equivalent to doubling of demand every seven years, which means we would only have enough for 44 years. In effect, we would cause untold, perhaps irreversible, devastation of marine ecosystems to buy ourselves a few extra years’ supply of raw materials.

Exponential growth swiftly, inevitably, swamps anything in finite supply. For a virus, that finite resource is the human population and in the context of the planet it is its physical resources.

The inescapable inference is that it is essentially impossible to decouple material use from economic growth. And this is exactly what has transpired. Wiedmann et al., 2015 did a careful accounting of the material footprint, including those embedded in international trade, for several nations. In the 1990–2008 period covered by the study, no country achieved a planned, deliberate economywide decoupling for a sustained length of time. Claims by the Global North to the contrary conceal the substantial offshoring of its production, and the associated ecological devastation, to the Global South.

Recent proposals for ecocidal deep-sea and fantastical exoplanetary mining are an unsurprising consequence of a growth paradigm that refuses to recognize these inconvenient truths.

These observations lead us to a natural minimum condition for sustainability: all resource use curves must be simultaneously flatlined and all pollution curves simultaneously extinguished. It is this resource perspective that allows us to see why EVs may help offset carbon emissions yet remain utterly unsustainable under the limitless growth paradigm.

We have argued that the inextricable link between material consumption and GDP makes the infinite-growth paradigm incompatible with sustaining ecological integrity. Thus, while EVs constitute a partial answer to the climate question, within the current paradigm they will only exacerbate the larger anthropogenic crises connected to unsustainable resource consumption.

**Insect loss**

Robert **Hunziker 18**, MA in Economic History from DePaul University, environmental journalist for over fifty publications, 3/27/18, “Insect Decimation Upstages Global Warming,” https://www.transcend.org/tms/2018/04/insect-decimation-upstages-global-warming/

Everybody’s heard about global warming. It is one of the most advertised **existential** events of all time. Who isn’t aware? However, there’s a new kid on the block. An alarming **loss of insects** will likely **take down humanity** before global warming hits maximum velocity.

For the immediate future, the Paris Accord is riding the wrong horse, as global warming is a long-term project compared to the insect catastrophe happening right now! Where else is found 40% to 90% species devastation?

The worldwide loss of insects is simply staggering with some reports of 75% up to 90%, happening much faster than the paleoclimate record rate of the past five major extinction events. It is possible that some insect species may **already be close to total extinction!**

It’s established that species evolve and then go extinct over thousands and millions of years as part of nature’s course, but the current rate of devastation is simply “off the charts, and downright scary.”

Without any doubt, it is difficult to imagine how humanity survives without insects, which are dropping dead in bunches right before our eyes. For proof, how many insect splats do people clean off windshields nowadays? Not many…. How many fireflies do children chase at night? Not many….

Several naturalists and environmental writers believe the massive loss of insects has everything to do with three generations of **industrialized farming** and the vast tide of **poisons** pouring over the landscape year-after-year, especially since the end of WWII. Ours is the first-ever pesticide-based agricultural society. Dreadfully, it’s an experiment that is going dead wrong… all of a sudden!

Insects are basic to thousands of food chains; for example, the disappearance of Britain’s farmland birds by over 50% in 40 years. Additionally, North America and Europe species of birds like larks, swallows, and swifts that feast on flying insects have plummeted.

But, these are only a few of many, many recorded examples of massive numbers of wildlife dropping dead right before our eyes.

Significantly, insects are the **primary source for ecosystem creation and support**. The world literally crumbles apart without mischievous burrowing, forming new soil, aerating soil, pollinating food crops, etc. **Nutrition for humans happens because insects pollinate**.

**Chemical emissions**

Julian **Cribb 17**, Fellow of the Australian Academy of Technological Sciences and Engineering, 2017, “The Poisoner,” in Surviving the 21st Century, p. 113-117

There are two essential points about the Earthwide **chemical flood**. First it is quite **new**. It began with the industrial revolution of the late nineteenth century, but expanded dramatically in the wake of the two world wars—where chemicals were extensively used in munitions—and has exploded in deadly earnest in the past 50 years, attaining a new crescendo in the early twenty-first century. It is something our ancestors never faced—and to which we, in consequence, lack any protective adaptations which might otherwise have evolved due to constant exposure to poisons.

Second, the toxic flood is, for the most part, preventable. It is not compulsory—but **is an unwanted by-product of economic growth**. Though driven by powerful industries and interests, it still lies within the powers and rights of citizens, consumers and their governments to demand it be curtailed or ended and to encourage industry to safer, healthier products and production systems.

The issue is whether, or not, a wise humanity would choose to continue poisoning our children, ourselves and our world.

Regulatory Failure

Despite the fact that around 2000 new chemicals are released onto world markets annually, most have not received proper health, safety or environmental screening—especially in terms of their impact on babies and small children. Regulation has so far failed to make any serious curtailment of this flood: only 21 out of 144,000 known chemicals have been banned internationally, and this has not eliminated their use. At such a rate of progress it will take us more than 50,000 years to identify and prohibit or restrict all the chemicals which do us harm. Even then, bans will only apply in a handful of well-regulated countries, and will not protect the Earth system nor humanity at large. Clearly, national regulation holds few answers to what is now an out-of-control global problem.

Furthermore, the chemical industry is relocating from the developed world (where it is quite well regulated and observes its own ethical standards) and into developing countries, mainly in Asia, where it is largely beyond the reach of either ethics or the law. However, its toxic emissions return to citizens in well-regulated countries via wind, water, food, wildlife, consumer goods, industrial products and people. The bottom line is that it doesn’t matter how good your country’s regulations are: you and your family are still exposed to a growing global flood of toxins from which even a careful diet and sensible consumer choices cannot fully protect you.

The wake-up call to the world about the risks of chemical contamination was issued by American biologist Rachel Carson when she published Silent Spring in 1962, in which she warned specifically about the impact of certain persistent pesticides used in agriculture. Since her book came out, the volume of pesticide use worldwide has increased 30-fold, to around four million tonnes a year in the mid-2010s. Since the modern chemical age began there has been a string of high-profile chemical disasters: Minamata, the Love Canal, Seveso, Bhopal, Flixborough, Oppau, Toulouse, Hinkley, Texas City, Jilin, Tianjin. Most of these display a familiar pattern of unproductive confrontation between angry citizens, industry and regulators, involving drawn-out legal battles that deliver justice to nobody. By their spectacular and local nature, such events serve to distract from the far larger, more insidious and ubiquitous, universal toxic flood.

Chemists and chemical makers often claim that their products are ‘safe’ because individual exposure (e.g. in a given product, like a serve of food) is too low to result in a toxic dose, a theory first put forward by the mediaeval scholar Paracelsus in the sixteenth century. This ‘dose related’ argument is disingenuous, if not dishonest—as modern chemists well know—for the following reasons: Most chemicals target a receptor or receptors on certain of your body cells, to cause harm. There may be not one, but hundreds or even thousands of different chemicals all targeting the same receptor, so a particular substance may contribute an unknowable fraction to an overall toxic dose. That does not make it ‘safe’. Chemicals not known to be poisonous in small doses on their own can combine with other substances in water, air, food or your body to create a toxin. No manufacturer can truthfully assert this will not happen to their products. Chemical toxicity is a function of both dose and the length of time you are exposed to it. In the case of persistent chemicals and heavy metals, this exposure may occur over days, months, years, even a lifetime in some cases. Tiny doses may thus accumulate into toxic ones. Most chemical toxicity is still measured on the basis of an exposed adult male. Babies and children being smaller and using much more water, food and air for their bodyweight, are therefore more at risk of receiving a poisonous dose than are adults.

Chemicals and minerals are valuable and extremely useful. They do great good, save many lives and much money. No-one is suggesting they should all be banned. But their value may be for nothing if the current uncontrolled, unmonitored, unregulated and unconscionable mass release and planetary saturation continues.

Chemical Extinction

Two billion years ago, excessive production of one particular poisonous chemical by the inhabitants of Earth caused a colossal die-off and threatened the **extermination of all life**. That chemical was oxygen and it was excreted by the blue-green algae which then dominated the planet, as part of their photosynthetic processes. After several hundred million of years, the planet’s physical ability to soak up the surplus O2 in iron formations, oceans and sediments had reached saturation and the gas began to poison the existing life. This event was known as the ‘oxygen holocaust’, and is probably the nearest life on Earth has ever come to complete disaster before the present (Margulis and Sagan 1986). Since it developed slowly, over tens of millions of years, the poisonous atmosphere permitted some of these primitive organisms to evolve a tolerance to O2—and this in time led to the rise of oxygen-dependent species such as fish, mammals and eventually, us. The takehome learning from this brush with total annihilation is that it is possible for living creatures to **pollute themselves into oblivion**, if they don’t take care to avoid it or rapidly adapt to the new, toxic environment. It’s a message that humans, with our colossal planetary chemical impact, would do well to ponder.

While it is unlikely that human chemical emissions alone could reach such a volume and toxic state as to directly threaten our entire species with extinction (other than through carbon emissions in a runaway global warming event) or even the collapse of civilization, it is likely they will emerge as a serious contributing factor during the twenty-first century in combination with other factors such as war, climate change, pandemic disease and ecosystem breakdown. Credible ways in which man-made chemicals might imperil the human future include: **Undermining the immune systems**, physical and mental health of the population through growing exposure to toxins Reducing the intelligence of current and future generations through the action of nerve poisons on the developing brains and central nervous systems of children, rendering humanity less able to solve its problems and adapt to major changes; and by increasing the level of violent crime and conflict in society, which is closely linked to lower IQ. Bringing down the economy through the massive healthcare costs of having to nurse, treat and maintain a growing proportion of the population disabled by lifelong chronic chemical exposure. By poisoning the ecosystem services—clean air, water, soil, plants, insects and wildlife—on which **humanity depends for its own survival** and thereby contributing to potential global ecosystem breakdown By augmenting the global arsenal of weapons of mass destruction and hence the risk of their use by nations or uncontrollable fanatics.

#### Economic crisis transitions to degrowth society – pessimism about conflict is wrong – only transition can avoid climate catastrophe

Read and Alexander '19 [Rupert and Samuel; June 2019; Associate Professor of Philosophy at the University of East Anglia; lecturer at the University of Melbourne, co-director of the Simplicity Institute, research fellow with the Melbourne Sustainable Society Institute, This Civilization is Finished: Conversations on the end of Empire—and what lies beyond, Chapter 13, p. 52-60]//GJ

SA: You alluded earlier to the saying that every crisis is an opportunity—from which the optimist infers that the more crises there are, the more opportunities there are! Of course, this statement must not be seen to be romanticising or desiring crisis like some dreamy-eyed fool. In fact, our entire dialogue seems to have been based on a deep pessimism about the prospects of smoother and less disruptive modes of societal transformation. So perhaps crisis might be our best hope for disrupting the status quo and initiating the transition to something else.

When the crises of capitalism deepen, as they seem destined to do in coming years and decades, the task will be to ensure that such destabilised conditions are used to advance progressive humanitarian and ecological ends rather than exploited to further entrench the austerity politics of neoliberalism. I recognise, of course, that the latter remains a real possibility, as did the arch-capitalist Milton Friedman, who expressed the point in these terms:

Only a crisis—actual or perceived—produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around. That, I believe, is our basic function: to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes the politically inevitable.

It is not often that I am in agreement with Friedman. With reluctance I have come to the conclusion that it is probably only through deepening crisis that the comfortable global consumer class will become sufficiently perturbed that the sedative and depoliticising effects of affluence might be overcome. In fact, I feel it is better that citizens are not in fact protected from every crisis situation, given that the encounter with crisis can play an essential consciousness raising role, if it triggers a desire for and motivation toward learning about the structural underpinnings of the crisis situation itself.

RR: Yes, the danger, if we are protected from crisis for too long, is that we wait even longer than we would have done otherwise before addressing it. This is why Jared Diamond and others have emphasised the grave danger of highly unequal societies (such as, disastrously, the one we now inhabit): for the elite in such societies can fool themselves into thinking that things are basically OK way past the point of no return, while the masses suffer and start to experience collapse; and then it is surer that the society as a whole will collapse.

SA: And yet, as I have noted, crisis can go in many directions—it might be the wake-up call we need… or it might simply hasten the civilisational degeneration into barbarism. What role does crisis play in your views on transition? Is the world ready for the profound challenges that, in one form or another, lie ahead?

RR: We are now committed to climate disasters, and they will worsen, for a long time to come. But we do not yet know whether we are committed to climate catastrophe. It is just possible that the former may help enable us to avoid the latter. Consider the literature on ‘Disaster Studies’, in particular Rebecca Solnit’s amazing book A Paradise Built in Hell: The Extraordinary Communities that Arise in Disaster. Solnit observes that disasters are often recalled by their survivors as periods of great joy and profoundly meaningful experience.

She argues that this is because, at these moments, the social order is revealed to be ‘something akin to… artificial light: another kind of power that fails in disaster’. Its failure reveals a truer light, that comes from within us, that we can share and grow with one another. It unshackles moral resources which we had available to us all along—within ourselves, and in community waiting to spring into being—allowing ‘a reversion to improvised, collaborative, cooperative and local society’. Moments of crisis allow us to see and to start to make, for the first time, a vision of a world we always sensed was possible, but had been unable to articulate, let alone to instantiate.

This is one vitally important way in which the long crisis we are enter-ing into is without doubt an opportunity. The widespread assumption that disasters always unleash a cruelty or indifference endemic to human nature is false. This is the meaning of the title of Solnit’s book: disasters often spontaneously produce not barbarity but generosity, community, something like a spontaneous non-dogmatic ‘communism’.

The coming ecological and climate disasters could yet yield an improvement in human goodness. And even a consciousness—a determination—that we have to stop such disasters from multiply-ing into catastrophe. It is perhaps unlikely that this will come into being (enough); it is probably likelier that, instead, people’s focus will too often stay narrowly present and local,48 and that the bigger picture will be ignored or even denied. But the possibility of a new consciousness and conscientiousness is one of the few great hopes we have at present of civilisational transformation.

In any case, even if it turns out that the best that we can hope for is the second of the three ‘options’ with which I greeted your opening question to me—the option of seeding a successor-civilisation from the very-likely wreckage of this one—then it’s still imperative to seek out the silver linings of disaster (and even of catastrophe). Learnings that will help us deeply adapt. Such as the way that the survivors of previous ecological collapses seem to have learnt humility with regard to nature. Our indigenous ancestors who decimated the world’s megafauna in Europe, Asia, and Australasia, and who in many cases suffered dire con-sequences from doing so, learned better how to live in harmony with and in natural systems.49 We will learn this lesson. The question is only whether we learn it as we die (1), or as we (or rather, probably, a few of us) survive collapse and start to construct a new way of living (2), or in order to transform ourselves and prevent collapse (3).

Similarly, we will go back to the land in pretty large numbers. The only live issue is whether we will do so in a part-planned and part-voluntary way sooner,50 or in a catastrophically desperate, forced way later.

The crisis we face is above all an opportunity to learn, and to imagine and hope and do better. But some of that learning has to be pre-emptive. By the time collapse occurs, it may/would be too late.

SA: The prospect of societal collapse is gradually getting discussed more regularly these days, even in some mainstream forums, like prominent newspapers and ‘serious’ magazines. If it was once a fringe territory of ‘doomsayers’, today one might even say that col-lapse is the expected course of action. Slavoj Zizek would say this is functioning to ‘normalise the apocalypse’. But for all the attention this notion of collapse is given, it is not always discussed with much rigour or definition. What do you mean when you use the term collapse? Is there any prospect of a ‘prosperous descent’? Or will any collapse scenario necessarily be full of pain and suffering?

RR: This is a crucial question. The way I have been talking about ‘this civilisation’ (as finished) has been shorthand. What for? Basically, for what Joanna Macy calls ‘industrial growth society’. That is what is finished. The fantasy of endless ‘progress’ (aka endless economic growth) is dead. Every further bit of material ‘progress’ now takes us further over the cliff-edge, reduces even further our slim chances of clawing our way to some safety. We are eating into our life-support systems.

Growthism, a central part of the ideology that rules this civilisation globally, is deadly because it always makes our task harder. You and I, Sam, are among those who have shown that net green economic growth while remaining within planetary boundaries is deeply implausible.51 But even if we were somehow wrong about this, it would still be true that growthism tends toward deadliness; for, by making our collective aim into GDP growth, and thus by endlessly increasing pressure upon those boundaries, we provide a rod for our own backs.

Even if net (i.e., economy-wide, not sector-specific) green growth were possible, it’s a rod for our collective backs. The intelligent thing to do, obviously, is to remove the rod!

As for industrialism, nearly everyone assumes that the industrial revolution was an inevitability and obviously a good thing. But this evinces a lack of imagination. As the consequences of industrial-growthism lead us steadily toward the white swan of climate catastrophe and ecological breakdown, with the sixth mass extinction well underway at our hands, surely we have to re-assess this assumption. Surely we have to take up a more critical and thoughtful stance toward it, as the Dark Mountain Project has helpfully done. Surely we have to ask: couldn’t the whole thing have been done with more precaution, more slowly? And couldn’t—mustn’t—we be more selective about which industries we choose to permit and to develop now?

We need to rein in the reckless growth of industry, and to radically roll back the many industries that are killing us and our other-than-human kin, and steadily eliminating our kids’ future. We need to choose which products and processes of industrial society we want to seek to preserve. For example, I hope that, in our radically relocalised future, we may be able to preserve some of the internet as a mode of communication, to help us share knowledge and wisdom, to continue to tackle global issues (such as climate), and to help prevent a growth in xenophobia. But we’ll have to see. Without doubt, much of what we are accustomed to will have to go.

The sheer enormity and audacity of this task, and the way that it contradicts our ruling ideas of the allegedly endless technical ingenuity o

f humanity, the allegedly beneficent nature of technology, the ideology of ‘progress’ and ‘development’, etc., mean that it is hard to see how we could possibly do this. So what I am saying is: such a transformation, resulting in a society on a radically different footing, is not something that any wise person would bet on us succeeding in. A prosperous descent—which is path (3) of the possible paths that I laid out earlier—would be wonderful, and remains possible, and so it is painful (not to mention unbearably frustrating) to admit the fact that humanity appears very unlikely to be capable of it.

This is why, as I argued earlier, we need the insurance policy not only of transformative adaptation but also of deep adaptation; to help prevent path (2)—that of a successor-civilisation after a collapse-event—itself collapsing into being path 1 (total collapse; the default outcome, the white swan that probably awaits us, on even a reformed business-as-usual path). Some kind of collapse, quite likely driven by the interaction of water shortage and consequent food shortage, but quite possibly driven by other things instead or as well (e.g., by pollinator failure due to the insect-apocalypse, or possibly by plague among a climatically-weakened population), has to be considered our likely fate. Not just in Africa, Asia, and the Middle East, but in Australia, Europe, and North America.

Industrial-growth society is finished. We will rapidly transform it into something better, or it will collapse, either to seed something differ-ent or to simply end us. And any collapse event will be chock full of pain. It will be challenging to prevent it from becoming a more or less total collapse; for instance, as we have already discussed, stopping nuclear waste—spent fuel rods, not to mention live reactors—from becoming virtually endless drivers of death and suffering will require concerted effort at a time when we will be ill-placed to make that effort. (In countries like England or the USA, do we even have the collective will to make the sacrifices that may well be required under such circumstances? Is the combination of voluntary and forced heroism that prevented the disaster of Chernobyl from becoming a catastrophe replicable in countries like ours that pride themselves on an ideology of atomised individualism, countries which toy with the idea that there is no such thing as society?)

And yet, where the greatest danger lies, there too can be found the saving power. As we dare at last to gaze into the abyss, as we find the courage to contemplate these matters that you and I are discussing here, as we take the measure of the beauty of what we have and the folly of our squandering it, as we feel the heart-pain of what we are committing our children to, so we can rise to the challenge. Rise up to meet it. The greatest challenge of the entire history of our species is upon us. What an awesome and even thrilling responsibility—and, of course, terrifying.

As I set out in answer to your previous question, one thing that in this great and terrible moment gives me very real hope is that, when human beings are subject to the gravest of threats and the most unexpected of utter challenges, we really do tend spontaneously to become our best selves, selfless and creative of real community.

So it is possible that the disasters which are definitely coming and the collapse which they are likely to lead up to may yet be the making of us.

SA: You are suggesting then that even in a collapse scenario, we might be surprised to discover that some tragic events have a silver lining of sorts. Perhaps you could unpack that counter-intuitive idea a little further.

RR: Yes. We are living, nowadays, in ways that involve us in a virtually permanent absence of community. Disasters enable this to be overcome. They enable us in our small selves, our limited and limiting egos, to be overcome. For such overcomings to be possible and to take place, there must be a full-scale disaster, not merely an accident or something bad. Charles Fritz, who is a key influence on Rebecca Solnit’s work in this area, emphasises this point.52 He writes that disasters need to be big enough to not leave behind ‘an undisturbed, intact social system’. Only if that system is disrupted sufficiently can new and realer forms of community emerge. ‘Disaster provides an unstructured social situation that enables persons and groups to perceive the possibility of introducing desired innovations into the social system,’ according to Fritz.

When we picture collapse, we tend to imagine human beings at their worst. But what is sometimes revealed in disaster is real community identity, which fulfils our modern lack; and this is the very opposite of what the Hobbesian ‘script’ would have us imagine.

The etymology of the word ‘apocalypse’ is uncover/reveal. I am suggesting that, while any collapse will necessarily involve much pain and indeed death, as we will no longer be able to support our artificially bloated population53 and our decadent standard of living, it doesn’t have to reveal a human nature that is red in tooth and fist. If we proceed from a place of love and fellowship rather than from a place of distrust, the human nature that gets revealed even in collapse could be one of unexpected solidarity and care and sacrifice.

Writers such as Margarete Buber-Neumann, Victor Frankl, and Primo Levi have made clear how, even in environments designed to break the human spirit, unexpected possibilities of loving-kindness often flowered. So it won’t be beyond our wit (or our hearts), when under stress, to foster such flowerings in the years of living dangerously to come.

In collapse, our social system would of course get thoroughly—utterly—perturbed. What I am saying is that, in the less structured situation that emerges, there is a very real chance that we can find each other and find some deeper togetherness. So yes, this is a potential silver lining even of collapse, especially if we can turn a partial-col-lapse scenario into a breakthrough of the human spirit. A blitz spirit for our times. An arising of consciousness that could seed a successor-civilisation, a civilisation which someone like Gandhi would think a good idea.

### Taiwan

#### No Taiwan war

Kaplan 11/9 [(Fred, American author and journalist. His weekly "War Stories" column for Slate magazine covers international relations) “Will China Really Invade Taiwan?” Slate, 11/9/2021] JL

The report notes that, in the past year, China “intensified” its “diplomatic, political, and military pressure against Taiwan.” However, the notion of an actual invasion seems beyond China’s capabilities. The report elaborates:

Large-scale amphibious invasion is one of the most complicated and difficult military operations, requiring air and materiel superiority, the rapid buildup and sustainment of supplies onshore, and uninterrupted support. An attempt to invade Taiwan would likely strain [China’s] armed forces and invite international intervention. These stresses, combined with…the complexity of urban warfare and counterinsurgency…make an amphibious invasion of Taiwan a significant political military risk.

Not only that, the Chinese military isn’t even trying to build the things it would need for an invasion. It has just two amphibious assault ships, with a third under construction. There is “no indication,” the report states, that China is “significantly expanding” its force of landing craft, “suggesting [that] a traditional, large-scale direct beach assault operation…remains aspirational”—a polite way of saying: They just can’t do this.

But let’s assume that China does someday build enough boats and other resources to cross the Taiwan Strait, assault the island, and set up a beachhead. The arriving Chinese troops would still have to move inland, occupy territory, including the capital, Taipei (a modern metropolis of 2.6 million people), and fight off an armed resistance.

China’s military is not well equipped to do this either, and its officers seem aware of that fact. According to the Pentagon report, the Chinese army’s “media outlets have noted shortcomings in military training and education,” which have left operational commanders “inadequately prepared for modern warfare.” The media outlets itemize these shortcomings as the “Five Incapables”: some commanders cannot judge situations, deploy forces, understand the intentions of higher authorities, make operational decisions in combat, or manage unexpected developments.

The Chinese military is only beginning to train in “combined arms” (coordinated fighting by two different types of units, e,g., infantry and artillery) or “joint operations” (fighting by two military branches, e,g., the army and the navy). Finally, except for a few brief skirmishes, China hasn’t fought any wars since 1979 (when a border battle with Vietnam ended in a draw), meaning that its current commanders and troops have no combat experience.

So where did Adm. Davidson come up with the idea that China will be set to invade Taiwan in the next six years? Bonnie Glaser, director of the Asia program at the German Marshall Fund, says he inferred too much from a recent goal, set by Chinese President Xi Jinping, to achieve “national rejuvenation” by 2027 (six years from now). That year “is the 100th anniversary of the People’s Liberation Army,” Glaser told me, referring to the official name of the Chinese military. There is “no evidence” of Xi or anyone else tying this date to a takeover of Taiwan.

M. Taylor Fravel, a China expert and director of M.I.T. ‘s Security Studies Program, agrees. “Those who say China can invade Taiwan conflate changed rhetoric with changed capability,” Fravel told me. “It’s a misreading of China’s emphasis on 2027 as a milestone for PLA modernization.”

Glaser and Fravel also note that, even if China improved and expanded its military to the point where it could invade Taiwan, that doesn’t mean it would actually do it. China has increased its global presence and influence in the past few years, through the Belt and Road Initiative (BRI)—a string of loans and investments designed to lure other countries into China’s financial system and economic orbit—and a foreign policy that features (or at least attempts) pressure and intimidation. “Using force against Taiwan,” Glaser says, “would cause backlash from the international community”—not least from the United States, which has sold $23 billion worth of arms to Taiwan since 2015 and has dispatched special forces to train Taiwan’s armed forces.

This doesn’t mean Taiwan is safe and secure. The subjugation of Hong Kong has shown that China can dominate a small island power without resorting to military force. China’s military strategy—which the Pentagon report describes as “active defense”—is designed to keep foreign military forces, especially U.S. forces, as far away as possible from China’s territory. China has done this in part by building artificial islands in the South China Sea—thus widening the area of what it regards as “Chinese sovereign territory”—and then turning the islands into military bases. It has also, in recent years, churned out a staggering number of warships, anti-ship missiles, and air-to-air missiles, as part of a strategy known as “A2/AD,” which stands for “anti-access / area-denial.” This could be seen as a purely defensive strategy—or as a way to keep U.S. military forces at bay, thus enabling the Chinese military to control vital sea lanes in the South China Sea or to pressure Taiwan into compliance with China’s desires.

Yes, Xi has declared the reabsorption of Taiwan into the People Republic of China’s sovereign territory as a long-term goal. However, Thomas Fingar, a China specialist, distinguished fellow at Stanford University, and former chairman of the National Intelligence Council, says that this is nothing new. “Every leader going back to Chou En-lai”— China’s first premier from 1949-76—“has expressed the goal of liberating Taiwan.”

#### Econ downturn decreases the likelihood of diversionary war and improves Sino-US relations

Yin 19 [(George, Dickey Fellow in U.S. Foreign Policy and International Security at Dartmouth College, Ph.D. in government from Harvard) “Domestic repression and international aggression? Why Xi is uninterested in diversionary conflict,” Brookings Institute, 1/22/2019] JL

Crucially, diversionary war theory rests on a number of assumptions, two of which do not hold for Xi today.

Assumption 1: Leaders prefer foreign adventure over addressing domestic troubles.

As discussed earlier, in the realm of domestic policies, Xi has been criticized for primarily two things: his promotion of his cult of personality and a slowing Chinese economy overly focused on inefficient SOEs. It is easy for Xi to dial back his cult of personality, and he has already done so. Reverting his policy of *guo jin min tui* (“as the state advances, the private sector retreats”) is not going to be easy and would entail important financial system and legal reforms (see discussions from the 2018 Chinese Economists 50 forum), but is quite  doable. There is little reason why Xi would want to create international tension to distract his critics when it is much more straightforward to directly address the domestic issues. Furthermore, a diversionary skirmish involving Vietnam or the Philippines over one of the South China Sea islands would hardly be significant enough for diversion. To rally the nation behind him, Xi must pick on Taiwan, Japan, or even the United States. The problem is that a confrontation with either Taiwan or Japan is highly risky. The Chinese military, which has not fought a war since the Sino-Vietnamese conflict in 1979 and is embroiled in corruption scandals, might well suffer defeat. Perhaps China could take on the United States in the economics arena, but China has been unable to react effectively to the ongoing trade war with the United States.

Assumption 2: Key domestic political players want conflict.

Most importantly, the CCP elites do not want international conflict, especially one involving the United States. This is not because the CCP elites like the United States, which is still seen by many as an imperial power that supports Japanese militarism and secessionism in Taiwan, Hong Kong, Tibet, and Xinjiang. However, in Fan’s words, it is important “to deal with domestic issues before pacifying the barbarians” (*an nei rang wai*). In the eyes of his critics, any foreign adventure would indicate that Xi was getting the priorities wrong and further deviate from Deng’s grand strategy of fostering a favorable foreign environment to promote development. A diversionary conflict is therefore likely to further galvanize Xi’s opposition.

In conclusion, the Xi administration’s performance since 2012 has been attacked by a wide range of groups that constitute China’s governing elites; Xi can do little to eliminate rival factions who are waiting for the opportune moment to strike back. Xi is unlikely to be interested in a foreign adventure that would at best distract him from domestic power struggles, and at worst provide more political ammunition for his opponents to use against him. Instead, Xi actually faces a lot of pressure to improve China’s relations with the U.S. in his second term, which could help him deal with his domestic troubles or at least not exacerbate them.

#### Econ growth doesn’t cause war – it encourages decreased defense spending, threat deflation, threat prioritization, international coop, and better leaders.

Clary ’15 (Christopher; 4/25/15; Ph.D. in political science from the Massachusetts Institute of Technology, M.A. in National Security Affairs, Postdoctoral fellow, Watson Institute for International Studies, Brown University; MIT Political Science Department Research Paper, “Economic Stress and International Cooperation: Evidence from International Rivalries,” https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=2597712)

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

### China rise

#### China rise greenlights development of rogue tech:

#### Autonomous weapons

Kania 20 [(Elsa, Adjunct Senior Fellow with the Technology and National Security Program at the Center for a New American Security) “‘AI Weapons’ in China’s military innovation,” Brookings Institute, April 2020] DD  
As the Chinese People’s Liberation Army (PLA) seeks to become a “world-class military,” its progress in advanced weapons systems continues to provoke intense concern from its neighbors and competitors. The Chinese military and China’s defense industry have been pursuing significant investments in robotics, swarming, and other applications of artificial intelligence (AI) and machine learning (ML). Thus far, advances in weapons systems described or advertised as “autonomous” (自主) or “intelligentized” (智能化) have built upon existing strengths in the research and development of unmanned (无人) systems and missile technology. While difficult to evaluate the sophistication of these emerging capabilities, this initial analysis concentrates on indicators of progress in weapons systems that may possess a range of levels of autonomy.

This paper reviews advances in the Chinese military and defense industry to date, evaluates the potential implications of Chinese approaches to arms control and governance, assesses potential future developments, and then considers the strategic implications, as well as policy options for the United States and likeminded democracies. Based on publicly available information, the PLA’s trajectory in the development and potential employment of AI/ML-enabled and autonomous weapons systems remains uncertain. The maturity of these capabilities — as well as if, when, and to what extent weapons systems with greater levels of autonomy have been fielded — cannot be assessed with high confidence at this point. However, as technological competition emerges as an ever more prominent element of great power rivalry, it is clear the Chinese military and defense industry have undertaken active initiatives in research, development, and experimentation. Yet China’s progress will remain contingent upon the capacity to operationalize emerging weapons systems, which will require overcoming current technological and organizational challenges in testing, training, and concepts of operations.

Chinese advances in autonomy and AI-enabled weapons systems could impact the military balance, while potentially exacerbating threats to global security and strategic stability as great power rivalry intensifies. In striving to achieve a technological advantage, the Chinese military could rush to deploy weapons systems that are unsafe, untested, or unreliable under actual operational conditions. The PLA’s strategic choices about which capabilities could prove advantageous will influence the direction of Chinese military innovation. It is encouraging that Chinese military scientists and researchers are starting to debate and engage with safety issues and technical concerns, as well as legal and ethical considerations. Nonetheless, People’s Republic of China (PRC) arms sales to potential adversaries to the United States, and to militaries with little regard for the law of war, threaten U.S. values and interests, while accelerating the proliferation of these capabilities to non-state actors. Going forward, the United States should monitor these trends and pursue measures to mitigate such risks.

#### Advanced biowarfare and genetic engineering capabilities

Kania 19 [(Elsa B., Research Fellow with Georgetown’s Center for Security and Emerging Technology and an Adjunct Senior Fellow with the Technology and National Security Program at the Center for a New American Security, research focuses on Chinese military strategy, military innovation, and emerging technologies, graduate of Harvard College, summa cum laude, Phi Beta Kappa) “Weaponizing Biotech: How China's Military Is Preparing for a 'New Domain of Warfare',” Defense One, 8/14/2019] JL

We may be on the verge of a brave new world indeed. Today’s advances in biotechnology and genetic engineering have exciting applications in medicine — yet also alarming implications, including for military affairs. China’s national strategy of military-civil fusion (军民融合) has highlighted biology as a priority, and the People’s Liberation Army could be at the forefront of expanding and exploiting this knowledge.

The PLA’s keen interest is reflected in strategic writings and research that argue that advances in biology are contributing to changing the form or character (形态) of conflict. For example:

In 2010’s War for Biological Dominance (制生权战争), Guo Jiwei (郭继卫), a professor with the Third Military Medical University, emphasizes the impact of biology on future warfare.

In 2015, then-president of the Academy of Military Medical Sciences He Fuchu (贺福初) argued that biotechnology will become the new “strategic commanding heights” of national defense, from biomaterials to "brain control" weapons. Maj. Gen. He has since become the vice president of the Academy of Military Sciences, which leads China’s military science enterprise.

Biology is among seven "new domains of warfare" discussed in a 2017 book by Zhang Shibo (张仕波), a retired general and former president of the National Defense University, who concludes: “Modern biotechnology development is gradually showing strong signs characteristic of an offensive capability,” including the possibility that “specific ethnic genetic attacks” (特定种族基因攻击) could be employed.

The 2017 edition of Science of Military Strategy(战略学), a textbook published by the PLA’s National Defense University that is considered to be relatively authoritative, debuted a section about biology as a domain of military struggle, similarly mentioning the potential for new kinds of biological warfare to include “specific ethnic genetic attacks.”

These are just a few examples of an extensive and evolving literature by Chinese military scholars and scientists who are exploring new directions in military innovation.

Following these lines of thinking, the PLA is pursuing military applications for biology and looking into promising intersections with other disciplines, including brain science, supercomputing, and artificial intelligence. Since 2016, the Central Military Commission has funded projects on military brain science, advanced biomimetic systems, biological and biomimetic materials, human performance enhancement, and “new concept” biotechnology.

Meanwhile, China has been leading the world in the number of trials of the CRISPR gene-editing technology in humans. Over a dozen clinical trials are known to have been undertaken, and some of these activities have provoked global controversy. It’s not clear whether Chinese scientist He Jiankui, may have received approval or even funding from the government for editing embryos that became the world’s first genetically modified humans. The news provoked serious concerns and backlash around the world and in China, where new legislation has been introduced to increase oversight over such research. However, there are reasons to be skeptical that China will overcome its history and track record of activities that are at best ethically questionable, or at worst cruel and unusual, in healthcare and medical sciences.

But it is striking how many of China’s CRISPR trials are taking place at the PLA General Hospital, including to fight cancer. Indeed, the PLA’s medical institutions have emerged as major centers for research in gene editing and other new frontiers of military medicine and biotechnology. The PLA’s Academy of Military Medical Sciences, or AMMS, which China touts as its “cradle of training for military medical talent,” was recently placed directly under the purview of the Academy of Military Science, which itself has been transformed to concentrate on scientific and technological innovation. This change could indicate a closer integration of medical science with military research.

In 2016, an AMMS doctoral researcher published a dissertation, “Research on the Evaluation of Human Performance Enhancement Technology,” which characterized CRISPR-Cas as one of three primary technologies that might boost troops’ combat effectiveness. The supporting research looked at the effectiveness of the drug Modafinil, which has applications in cognitive enhancement; and at transcranial magnetic stimulation, a type of brain stimulation, while also contending that the “great potential” of CRISPR-Cas as a “military deterrence technology in which China should “grasp the initiative” in development.

#### China eschews multilateral cooperation

Edel and Shullman 9/16 [(Charles,Global Fellow at the Wilson Center and a Senior Fellow at the United States Studies Centre at the University of Sydney, and David O., Director of the China Global Hub at the Atlantic Council, former National Intelligence Officer for East Asia on the National Intelligence Council) “HowChina Exports Authoritarianism,” Foreign Affairs, 9/16/2021] JL

China offers more than simple inspiration for a nondemocratic governance model: it provides the tools, training, and resources that permit leaders to ignore democratic countries’ demands for good governance and respect for individual rights as a condition of aid and investment. The CCP regularly conducts large-scale training programs for foreign officials on how to guide public opinion, control civil society, and implement Chinese-style cybersecurity policies in their home countries. A growing number of countries have drawn inspiration from China to pursue laws controlling social media or to build Internet firewalls modeled on China’s own “Great Firewall.”  China also provides increasingly sophisticated surveillance technology and internal security training to established authoritarian and fragile democratic governments, enabling them to better suppress dissent and control their own citizens. In countries such as Uganda and Zambia, CCP-linked organizations have shared technology and training with autocratic and autocratic-leaning governments, allowing them to monitor their citizens, muzzle media and civil society, and impose repressive Internet rules.

The CCP has also engaged in more explicit political intervention by interfering directly in the political processes of other sovereign countries to support China-friendly politicians and policies and by co-opting local civic groups and journalists to stymie negative portrayals of China’s international engagement and to protect its ties to corrupt local elites. These efforts are not intended to overthrow democracies or other ideologically dissimilar regimes but to help ensure that China-friendly policies and investment climates will prevail regardless of who is in power. Nevertheless, such efforts erode the accountability of leaders to their citizens, weaken the independence of the media and civil society, and ultimately tilt the playing field to favor illiberal leaders looking to import elements of China’s model of governance into their countries’ political systems. This kind of political encroachment maintains the form of a democratic system while hollowing out the actual substance of a functioning democracy from the inside, making the slide toward authoritarianism harder to detect.

It should come as no surprise that the CCP’s vision of successful governance has no room for independent checks on state power, such as a substantive civil society or healthy opposition. In the model that Beijing is selling and that more and more countries are buying, dissent is not a legitimate expression of individual interests but an attempt to sabotage collective nation-building efforts. Opposition, in other words, is not political participation but state subversion. The popularization of these ideas in a growing number of developing countries is helping the CCP realize its vision for a revised global order in which a plurality of governance models—democratic and authoritarian alike—can exist as equally legitimate political choices.

The last category of international antidemocratic actions involves those aimed at weakening international institutions that instill democratic norms and creating new ones that do not, thereby neutering the liberal presumptions that prevail in the current global order. China uses the clout it has gained by consolidating influence in UN agencies to ensure institutional alignment with Chinese priorities: it has wielded its authority in the International Telecommunications Union, for instance, to promote policies that facilitate the authoritarian use of technology to repress citizens. Beijing’s efforts to topple the current liberal order—which China views as an obstacle to its emergence as a great power—are unprecedented. China is enshrining its own ideological concepts and foreign policy strategies into international statements of consensus, substituting Chinese concepts, such as the “right to development” and “Internet sovereignty,” for more widely held values. It is also promoting its own view of human rights, in which governments can cite supposedly unique local conditions to justify disregard for individual or minority rights and in which civil or political rights are secondary to so-called economic and social rights.

Taken together, Beijing’s illiberal efforts undercut democracy in the developed world, the developing world, and in international institutions amount to an assault on the norms, rules, and ethics by which the world is governed. They threaten to usher in an increasingly undemocratic world populated by regimes that are beholden to Beijing and unsympathetic to the interests of the United States and its allies. Such regimes would be less accountable to their populations, less committed to individual rights, less responsible to international institutions that uphold democratic norms and universal values, and more dedicated to controlling and suppressing information. In short, if Beijing isn’t trying to remake the world in its image, it is trying to make the world friendlier to its interests—and more welcoming to the rise of authoritarianism in general.

#### BRI thumps Chinese soft power

Greer 18 [(Tanner, writer and strategist based in Taiwan) “One Belt, One Road, One Big Mistake,” Foreign Policy, 12/6/2018] JL

This might not matter if BRI projects were driving favorable political outcomes. They aren’t. Prolonged exposure to the BRI process has driven opposition to Chinese investment and geopolitical influence across the region. In the Maldives, the pro-Beijing Progressive Party of Maldives was unseated this year by the Maldivian Democratic Party, which ran on an explicitly anti-BRI platform. The Maldives’ new president calls the BRI “a big cheat” and a “debt trap” that must be abandoned or renegotiated.

He has a kindred spirit in Mahathir Mohamad, the new prime minister of Malaysia, who has described BRI projects as a form of “new colonialism” that must be rejected. Beijing’s quest to create a stable pro-China tilt in Sri Lanka has only spawned political instability, with President Maithripala Sirisena sliding up to and away from Sri Lankan politicians connected to China as the situation demands. In Bangladesh authorities recently blacklisted China Harbour Engineering Company, one of the region’s most active BRI construction firms, on accusations of corruption.

Burma was so alarmed by regional trends that it put a hold on its own BRI-funded port project in Kyaukpyu until the Chinese agreed to cut its scale by 80 percent. Nepal and Pakistan have also demanded that China cancel or completely retool ongoing projects in their countries. In western Pakistan opposition to the initiative has turned violent. Last week Baluchi separatists attacked the Chinese consulate in Karachi, treating Chinese infrastructure investment in their region as a threat to their dreams of independence. Chinese analysts who hoped that the BRI investment would help stabilize China’s borderlands and ease the threat it faces from ethnic separatists inside China now must come to terms with an initiative that is embroiling China in conflict with separatists outside of it.