# R3 1NC

## 1

#### Interpretation: The affirmative may not specify a just government.

#### “A” is an indefinite article that modifies “just government” in the res – means that you have to prove the resolution true in a vacuum, not a particular instance

CCC (“Articles, Determiners, and Quantifiers”, http://grammar.ccc.commnet.edu/grammar/determiners/determiners.htm#articles, Capital Community College Foundation, a nonprofit 501 c-3 organization that supports scholarships, faculty development, and curriculum innovation) LHSLA JC/SJ

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

#### The article “a” implies a nonspecific or generic reading of the word “just government”.

Walden 20 Walden University [The Writing Center provides a broad range of writing instruction and editing services for students at Walden University, including writing assistance for undergraduates, graduate students, and doctoral capstone writers], “"A" or "An"” last modified July 14 2020, <https://academicguides.waldenu.edu/writingcenter/grammar/articles> SM

When to Use "A" or "An" "A" and "an" are used with singular countable nouns when the noun is nonspecific or generic. I do not own a car. In this sentence, "car" is a singular countable noun that is not specific. It could be any car. She would like to go to a university that specializes in teaching. "University" is a singular countable noun. Although it begins with a vowel, the first sound of the word is /j/ or “y.” Thus, "a" instead of "an" is used. In this sentence, it is also generic (it could be any university with this specialization, not a specific one). I would like to eat an apple. In this sentence, "apple" is a singular countable noun that is not specific. It could be any apple.

#### “just government” is a generic indefinite singular.

Leslie 12 Leslie, Sarah-Jane. “Generics.” In Routledge Handbook of Philosophy of Language, edited by Gillian Russell and Delia Fara, 355–366. Routledge, 2012. <https://www.princeton.edu/~sjleslie/RoutledgeHandbookEntryGenerics.pdf> SM

GENERICS VS. EXISTENTIALS The interpretation of sentences containing bare plurals, indefinite singulars, or definite singulars can be either generic as in (1) respectively or existential/specific as in (2): (1) Tigers are striped A tiger is striped The tiger is striped. (2) Tigers are on the front lawn A tiger is on the front lawn The tiger is on the front lawn. The subjects in (1) are prima facie the same as in (2), yet their interpretations in (1) are intuitively quite different from those in (2). In (2) we are talking about some particular tigers, while in (1) we are saying something about tigers in general. There are some tests that are helpful in distinguishing these two readings. For example, the existential interpretation is upward entailing, meaning that the statement will always remain true if we replace the subject term with a more inclusive term. For example, if it is true that tigers are on the lawn, then it will also be true that animals are on the lawn. This is not so if the sentence is interpreted generically. For example, it is true that tigers are striped, but it does not follow that animals are striped (Lawler 1973 Laca 1990; Krifka et al 1995). Another test concerns whether we can insert an adverb of quantification (in the sense of Lewis 1975) with minimal change of meaning (Krifka et al 1995). For example, inserting “usually” in the sentences in (1) (e.g. “tigers are usually striped”) produces only a small change in meaning, while inserting “usually” in (2) dramatically alters the meaning of the sentence (e.g. “tigers are usually on the front lawn). (For generics such as “mosquitoes carry malaria”, the adverb “sometimes” is perhaps better used than “usually”.)

#### This applies to the res –

#### 1 - Upward entailment test – “Egypt ought to recognize the right to strike” doesn’t entail “just governments ought to recognize the right to strike” because there are just governments other than india

#### 2 - Adverb test – adverb test – adding “always” doesn’t change its meaning because recognition is unconditional.

#### Violation: They specify US

#### Standards:

#### 1 - Precision – the counter-interp justifies them arbitrarily doing away with random words in the resolution which decks negative ground and preparation because the aff is no longer bounded by the resolution. Independent voter for jurisdiction – the judge doesn’t have the jurisdiction to vote aff if there wasn’t a legitimate aff.

#### 2 - Limits – there are infinite governments that could be just – explodes limits since there are tons of independent affs plus functionally infinite combinations, all with different advantages in different political situations. Kills neg prep and debatability since there are no DAs that apply to every aff – i.e. laws about the right to strike in the US are different than in New Zealand – means the aff is always more prepared and wins just for speccing.

#### 3 - TVA – just read your aff as an advantage under a whole adv, solves your offense

#### Paradigm:

#### Fairness – Debate is a competitive activity governed by rules. You can’t evaluate who did better debating if the round is structurally skewed, so fairness is a gateway to substantive debate.

#### DTD – Time spent on theory cant be compensated for, the 1nc was already skewed, and its key to deterring abuse.

#### Prefer Competing interps -

#### 1. reasonability is arbitrary and invites judge intervention.

#### 2. it Causes a race to the bottom where debaters push the limit as to how reasonably abusive, they can be.

#### No RVI’s -

#### 1. Chills some debaters from reading theory against abusive postions.

#### 2. incentivizes theory baiting where you can just bait theory to win.

## 2

#### Interpretation: The affirmative debater must articulate a distinct ROB in the form of a delineated text in the 1AC speech.

#### Violation:

#### Standards:

#### 1 - Strat Skew – Absent a text in the 1AC, they can read multiple pieces of offense under different ROBs and then read a new one in the 1AR so they never substantively lose debates under the ROB. They can warrant things like condo logic, consequentialist policy-making offense for their aff, or kritikal impacts that deviate from their plan and then read an incredibly nuanced ROB in the 1ar that makes it so only the conceded or under-covered offense matters. Stable advocacies are key to fairness since otherwise you aren’t bound by anything you say. Infinite abuse – Reading a new ROB in the 1AR makes it so all you have to do is dump on the 1N ROB and marginally extend your warrants in the 2ar and the neg can’t do anything about it since there is no 3NR to answer the 2ar weighing or extrapolations, you already have conceded offense, all you need is the ROB.

#### 2 - Reciprocity –

#### A - restarting the ROB debate in the 1ar puts you at a 7-6 advantage on the framing debate since I have to propose one in the 1N since 2N arguments are new – putting it in the aff makes it 13-13

#### B - you have one more speech to contest my ROB and weigh, I can only possibly answer your ROB in the 2n but you can do comparative weighing in the 2ar

#### C - I can only read a ROB in the 1N so you should read it in your first speech as well – that’s definitionally an equal burden.

## 3

#### Interpretation: the affirmative must defend that only just governments ought to recognize an unconditional right to strike.

#### Just governments respect liberties.

Dorn 12 James A. Dorn, Cato Journal, "The Scope of Government in a Free Society", Fall 2012, https://www.cato.org/sites/cato.org/files/serials/files/cato-journal/2012/12/v32n3-10.pdf

If laws are just, liberty and property are secure. The most certain test of justice is negative—that is, justice occurs when injustice (the violation of natural rights to life, liberty, and property) is prevented. The emphasis here is on what Hayek (1967) called “just rules of conduct,” not on the fairness of outcomes. No one has stated the negative concept of justice better than the 19th century French classical liberal Frederic Bastiat ([1850] 1964: 65): When law and force confine a man within the bounds of justice, they do not impose anything on him but a mere negation. They impose on him only the obligation to refrain from injuring others. They do not infringe on his personality, or his liberty or his property. They merely safeguard the personality, the liberty, and the property of others. They stand on the defensive; they defend the equal rights of all. They fulfill a mission whose harmlessness is evident, whose utility is palpable, and whose legitimacy is uncontested. In short, the purpose of a just government is not to do good with other people’s money, but to prevent injustice by protecting property and securing liberty.

#### Violation: They defend unjust US

#### The US is not just – their court system is racist and doesn’t respect liberty.

Nellis 18, Ph.D., 18, Report to the United Nations on Racial Disparities in the U.S. Criminal Justice System, https://www.sentencingproject.org/publications/un-report-on-racial-disparities/, Sentencing Project,

The United States criminal justice system is the largest in the world. At yearend 2015, over 6.7 million individuals1) were under some form of correctional control in the United States, including 2.2 million incarcerated in federal, state, or local prisons and jails.2) The U.S. is a world leader in its rate of incarceration, dwarfing the rate of nearly every other nation.3) Such broad statistics mask the racial disparity that pervades the U.S. criminal justice system, and for African Americans in particular. African Americans are more likely than white Americans to be arrested; once arrested, they are more likely to be convicted; and once convicted, and they are more likely to experience lengthy prison sentences. African-American adults are 5.9 times as likely to be incarcerated than whites and Hispanics are 3.1 times as likely.4) As of 2001, one of every three black boys born in that year could expect to go to prison in his lifetime, as could one of every six Latinos—compared to one of every seventeen white boys.5) Racial and ethnic disparities among women are less substantial than among men but remain prevalent.6) The source of such disparities is deeper and more systemic than explicit racial discrimination. The United States in effect operates two distinct criminal justice systems: one for wealthy people and another for poor people and people of color. The wealthy can access a vigorous adversary system replete with constitutional protections for defendants. Yet the experiences of poor and minority defendants within the criminal justice system often differ substantially from that model due to a number of factors, each of which contributes to the overrepresentation of such individuals in the system. As former Georgetown Law Professor David Cole states in his book No Equal Justice.

#### The US commits eminent domain abuse, which violates property and does it against minorities and the poor which is not impartial.

Ilya **Somin 17**, [Contributor, The Volokh Conspiracy which is is a blog co-founded in 2002 by law professor Eugene Volokh,[3] covering legal and political issues[4][5][6] from an ideological orientation it describes as "generally libertarian, conservative, centrist, or some mixture of these."], May 26, 2017 at 10:40 a.m. EDT, “The American experience with eminent domain – and its possible lessons for others” <https://www.washingtonpost.com/news/volokh-conspiracy/wp/2017/05/26/the-american-experience-with-eminent-domain-and-its-possible-lessons-for-others/> //LHP AV

This week, the Volokh Conspiracy hosted a guest-blogging symposium with posts by contributors to my new book Eminent Domain: A Comparative Perspective (co-edited with Iljoong Kim and Hojun Lee). My last post about the book includes links to a free version of the Introduction to the volume, and to posts by other contributors. In addition to co-editing the volume, I also wrote the chapter on eminent domain in the United States. In this post, I summarize key elements of the American experience with condemnation, building on my chapter in the book and my earlier work on the history of takings in the US. **The United States has the reputation of** being a nation with a strong **commitment to property rights** and constitutional limits on government power. In some ways, that reputation is well deserved. **But**, in some other key respects, it **is** **undercut by our painful history of eminent domain abuse.** The Fifth Amendment and nearly all state constitutions mandate that government may only take private property for a “public use.” Almost from the very beginning, there has been conflict between advocates of the “narrow” and “broad” interpretations of this rule. The former allows takings only for publicly owned projects (such as a public road), or private ones that have a legal duty to serve the entire public, such as a public utility. Under the broad view, virtually anything that might benefit the public in some way qualifies as a public use. The narrow view predominated throughout most of the first century or more of American constitutional history. But the broad view eventually triumphed in the mid-twentieth century, culminating in cases like Berman v. Parker (1954). As a result**, state and federal courts upheld large-scale “blight” and “economic development” takings that forcibly displaced hundreds of thousands of people, most of them poor, politically weak, or members of racial and ethnic minorities**. Often, these takings also destroyed more economic value than they created**, wiping out homes and small businesses, and destroying neighborhood “social capital.”** **Such abuses persist to the present day**, though on a considerably smaller scale than at the height of “urban renewal” takings in the 1950s and 1960s. The Supreme Court reaffirmed the broad view in its controversial 2005 decision in Kelo v. City of New London, which ruled that it is permissible to take property from one private owner and give it to another simply because it might lead to greater “economic development” in the area. But Kelo was a close 5-4 decision that turned out to be enormously controversial, generating a massive political backlash. In the aftermath, many states enacted eminent domain reform laws limiting takings, and several state supreme courts ruled that economic development takings violate their state constitutions. Although a win for the broad view, Kelo ended up destroying the seeming consensus behind it. In the wake of Kelo, the narrow view commands greater legitimacy than at any time in decades, and the debate over the proper scope of the eminent domain power continues with no end in sight. In recent years, controversy has erupted over takings for pipelines. An unusual coalition of property rights advocates on the right and environmentalists on the left has won a series of legislative and judicial victories seeking to limit pipeline takings. The alliance recalls the similarly cross-ideological reaction against Kelo, which also brought together some strange bedfellows. The debate over public use is far from the only controversy surrounding eminent domain in the US. **Another longstanding problem is the tendency to undercompensate owners of condemned property.** The Supreme Court has long held that owners must get “fair market value” compensation. **This, unfortunately, fails to account for the “subjective value” that many attach to their land over and above its market value. For example, a person who has lived in the same neighborhood for many years may value the social ties she has formed there; a small business may have a network of clients that would be hard to replicate elsewhere.** Even worse, studies show that owners often don’t even get the fair market value compensation that the law requires. That is particularly likely for owners who are relatively poor and lacking in political clout. Donald Trump’s claim that owners of condemned property stand to make “a fortune” is – to put it mildly – belied by the evidence.

#### The oppressive structure of the United States is maintained by the narrative of justice and triumph.

**Ioanide 14**, Paula. "The Alchemy of Race and Affect:“White Innocence” and Public Secrets in the Post–Civil Rights Era." *Kalfou* 1.1 (2014).

I had to do a lot of revisionist thinking after I confronted this evidence. This is when I realized that there were two operative languages in America: the language of narrative and the language of affect. The first, constituted by dominant discourses, representations, ideologies, and fantasies, was used to craft the consciousness and belief systems of liberal and conservative Americans alike. Employing the language of narrative, **Americans spoke of themselves using the terms of triumph**, fairness, exceptionalism, merit, rugged individualism, and the ethic of hard work. **They repeated the false history they were taught in high school**, **professed** the pleasantries of liberty, equality, **justice**, and God’s love for all, **played out the melodramas** and happy endings of Hollywood, and clung to the historicism of liberal democracy. **The discourses of cultural pathology, criminality, welfare dependence, big government, family non-normativity, and sexual deviance—all of which were always deeply racialized and gendered— provided easy justifications for the aberrations, divisions, inequalities, hierarchies, and conflicts in what was otherwise understood as the greatest nation in the world**. **This language of narrative through which Americans most often defined themselves masked the structures that ultimately determine people’s fates and rendered invisible the relationships between past racial injustices and present social relations of power, opportunity, and life chances**. **In denying individual and collective responsibility for the bitter fruits of American history, the language of narrative required the “dumbing down” of society, since keeping people ignorant of historical consciousness necessitates vacuous forms of know- ledge as well as alienated and instrumentalist social bonds**. But it also unwit- tingly produced spiritual emptiness, since a society that denies the unjust out- comes of its past and present actions cannot stand on ethical grounds. I suspect this is what was behind the hollow tones and loveless touches of the people at my church and school.

#### Standards:

#### 1 - Precision — anything else justifies the aff arbitrarily jettisoning words in the resolution at their whim which decks negative ground and preparation because the aff is no longer bounded by the resolution.

#### 2 - Limits – there are 200 governments in the world – letting them pick an unjust ones explodes limits via infinite permutations of governments.

#### Paradigm:

#### Fairness – Debate is a competitive activity governed by rules. You can’t evaluate who did better debating if the round is structurally skewed, so fairness is a gateway to substantive debate.

#### DTD – Time spent on theory cant be compensated for, the 1nc was already skewed, and its key to deterring abuse.

#### Prefer Competing interps -

#### 1. reasonability is arbitrary and invites judge intervention.

#### 2. it Causes a race to the bottom where debaters push the limit as to how reasonably abusive, they can be.

#### No RVI’s -

#### 1. Chills some debaters from reading theory against abusive postions.

#### 2. incentivizes theory baiting where you can just bait theory to win.

## 4

#### The ROB is to vote for the debater who bests proves the truth or falsity of the resolution.

#### Prefer:

#### 1. Ground - truth testing allows for the more ground than any other ROB since it allows for an infinite amount of arguments on a range of argumentation style giving the most breadth and depth of topic and phil ed.

#### 2. Textuality – Five Dictionaries[[1]](#footnote-1) define to affirm as to prove true[[2]](#footnote-2) and negate as to deny the truth of which means the sole judge jurisdiction is to vote on the resolution’s truth or falsity. This outweighs on common usage – it is abundantly clear that our roles are verified.

#### Negate -

#### 1 - just[[3]](#footnote-3) means “very recently; in the immediate past” so the rez has already passed.

#### 2 - of[[4]](#footnote-4) is to “expressing an age” but the rez doesn’t delineate a length of time.

#### 3 - recognize[[5]](#footnote-5) is to “Officially regard (a qualification) as valid or proper” but a right isn’t a qualification.

#### 4 - to[[6]](#footnote-6) is to “expressing motion in the direction of (a particular location)” but the rez doesn’t have a location.

#### 5 - right[[7]](#footnote-7) is to “conforming to facts or truth” rez doesn’t specify what workers are right about.

**6 - Strike[[8]](#footnote-8) is defined as** to delete something rez doesn’t spec what to delete.

#### 7 - Workers[[9]](#footnote-9) is defined as a “any of the sexually underdeveloped and usually sterile members of a colony of social ants, bees, wasps, or termites that perform most of the labor and protective duties of the colony” you can’t give a right to insects nor can we know if they are correct.

## Case

### 1NC – Warming

#### Co2 key to food, biodiversity, and halting land conversion.

Carter et al. 14 (Dr. Robert M. Carter, Emeritus Fellow, Institute of Public Affairs, Dr. S. Fred Singer, Science and Environmental Policy Project, Dr. Craig D. Idso, Dr. Sherwood B. Idso, Center for the Study of Carbon Dioxide and Global Change, and, CLIMATE CHANGE RECONSIDERED II: BIOLOGICAL IMPACTS, Nongovernmental International Panel on Climate Change, 2014, p. 473-475. Gender edited

The key findings of this chapter are listed below. • Rising atmospheric CO2 and warming temperatures, both of which IPCC claims constitute a significant threat to the biosphere, benefited agriculture in the ancient past and in the twentieth century. • Empirical studies suggest a future warming of the climate coupled with rising atmospheric CO2 levels will boost global agricultural production and help meet the food needs of the planet’s growing population. • When model-based studies fully account for the growth-enhancing and water-conserving benefits of atmospheric CO2 enrichment, they project significant gains for future agricultural production. • The vigor of the terrestrial biosphere has been increasing with time, revealing a great greening of the planet that extends across the globe. • Satellite-based analyses of net terrestrial primary productivity (NPP) reveal an increase of around 6– 13% since the 1980s. • There is no empirical evidence to support the model-based claim that future carbon uptake will diminish on a global scale due to rising temperatures. • Earth’s land surfaces were a net source of CO2- carbon to the atmosphere until about 1940. From 1940 onward, the terrestrial biosphere has become, in the mean, an increasingly greater sink for CO2- carbon. • Over the past 50 years, global carbon uptake has doubled from 2.4 ± 0.8 billion tons in 1960 to 5.0 ± 0.9 billion tons in 2010. • The observed greening of the Earth has occurred in spite of the many real and imagined assaults on the planet’s vegetation over this time period, including fires, disease, outbreaks of pests, deforestation, and climatic changes (primarily in temperature and precipitation). • The atmosphere’s rising CO2 content—which IPCC considers to be the chief culprit behind its concerns about the future of the biosphere—is most likely the primary cause of the observed greening trends. • In the future, plants should be able to adjust their physiology to accommodate a warming of the magnitude and rate of rise typically predicted by climate models to accompany the projected future increase in atmospheric CO2 content. • The rise in the air’s CO2 concentration and its antitranspiration effect, which improves plant wateruse efficiency, are enhancing and will continue to enhance the vegetative productivity of Africa. • The rise of the air’s CO2 concentration and temperature to their highest values of the past century enhanced the terrestrial vegetative productivity of all parts of Asia, including deserts, forests, grasslands, and the Tibetan Plateau. • Evergreen vegetation, woody plants, and other plant life have increased across Australia over the past 200 years as a result of CO2 enrichment. • Over the last two decades of the twentieth century, Europe as a whole became greener and much of it is seeing an increase in woodlands due to the recent rise in atmospheric CO2, which has tended to offset the detrimental effects of climate change in the region. • Opposite the forecasts promulgated by the models used by IPCC, land-based plants of the Arctic and near-Arctic regions of North America are thriving, thanks in large part to the ongoing rise in the atmosphere’s CO2 concentration and global warming. • Late twentieth-century increases in air temperature and atmospheric CO2 concentration did not negatively affect plant communities in the eastern United States. Rather, the temperature and CO2 increases significantly enhanced local and regional productivity, and there is little reason to think such enhancements will not continue throughout the foreseeable future. • The late twentieth-century rise in temperature and atmospheric CO2 concentrations improved the productivity of plant communities in the central region of the United States, notwithstanding model-based concerns to the contrary. • The late twentieth-century rise in temperature and atmospheric CO2 improved the productivity of plant communities in the western region of the United States, notwithstanding model-based projections of unprecedented ecological disaster due to rising temperatures and drought. • Warmer temperatures and higher CO2 concentrations are resulting in net primary productivity increasing across tropical South America, overcoming the effects of deforestation, forest fires, and incursions by human civilization into natural areas. • It is likely the greening of the planet will continue in the future, even if the largest temperature increases predicted by the models occur, because the optimum temperature for plant growth and development typically rises with increasing levels of atmospheric CO2. This response, coupled with expected increases in plant photosynthetic rates from the rise in the air’s CO2 concentration, is more than enough to compensate for any temperature-induced plant stress caused by global warming. • Real-world observations reveal plants have many ways of adjusting to changes in climate in addition to their ability to spread from places of rising warmth to cooler habitats, and these observations suggest the planet’s current assemblage of plants is likely to be around a good deal longer than many theoretical models have predicted. • A major cause of biodiversity reductions is not rising atmospheric CO2 concentrations, but instead the direct encroachment of [hu]man[s] upon the world of nature. Anthropogenic global warming, to whatever extent it exists, is helping plants overcome these assaults and thrive despite the growing human presence. • As good as things currently are for world agriculture, and as much better as they are expected to become as the atmospheric CO2 content continues to rise, there may be additional substantial room for both natural selection and bioengineering to remove the constraints of low CO2 adaptation in several important agricultural crops and thereby create novel genotypes able to exploit high CO2 conditions to their—and our— advantage. • The ongoing rise in atmospheric CO2 content is likely exerting significant selection pressure on Earth’s naturally occurring terrestrial plants, which should improve their performance in the face of various environmental stressors via the process of microevolution. Plants may be much better prepared than most scientists once thought to meet whatever climatic challenges, including global warming, the future may pose for them. • Evidence continues to accumulate for substantial heritable variation of ecologically important plant traits, including root allocation, drought tolerance, and nutrient plasticity, which suggests rapid evolution based on epigenetic variation alone should be possible.

#### Co2 key to ag and habitat diversity—their impacts are hype.

Goklany 15. (Dr. Indur M. Goklany, PhD MSU, is a science and technology policy analyst for the United States Department of the Interior, where he holds the position of Assistant Director of Programs, Science and Technology Policy. CARBON DIOXIDE The good news. <http://www.thegwpf.org/content/uploads/2015/10/benefits.pdf>)

Summary 1. This paper addresses the question of whether, and how much, increased carbon dioxide concentrations have benefited the biosphere and humanity by stimulating plant growth, warming the planet and increasing rainfall. 2. Empirical data confirms that the biosphere’s productivity has increased by about 14% since 1982, in large part as a result of rising carbon dioxide levels. 3. Thousands of scientific experiments indicate that increasing carbon dioxide concentrations in the air have contributed to increases in crop yields. 4. These increases in yield are very likely to have reduced the appropriation of land for farming by 11–17% compared with what it would otherwise be, resulting in more land being left wild. 5. Satellite evidence confirms that increasing carbon dioxide concentrations have also resulted in greater productivity of wild terrestrial ecosystems in all vegetation types. 6. Increasing carbon dioxide concentrations have also increased the productivity of many marine ecosystems. 7. In recent decades, trends in climate-sensitive indicators of human and environmental wellbeing have improved and continue to do so despite claims that they would deteriorate because of global warming. 8. Compared with the benefits from carbon dioxide on crop and biosphere productivity, the adverse impacts of carbon dioxide – on the frequency and intensity of extreme weather, on sea level, vector-borne disease prevalence and human health – have been too small to measure or have been swamped by other factors. 9. Models used to influence policy on climate change have overestimated the rate of warming, underestimated direct benefits of carbon dioxide, overestimated the harms from climate change and underestimated human capacity to adapt so as to capture the benefits while reducing the harms. 10. It is very likely that the impact of rising carbon dioxide concentrations is currently net beneficial for both humanity and the biosphere generally. These benefits are real, whereas the costs of warming are uncertain. Halting the increase in carbon dioxide concentrations abruptly would deprive people and the planet of the benefits of carbon dioxide much sooner than they would reduce any costs of warming.

#### Most likely cause of global conflict, but solving it is a dampener.

Lehane 17 [Sinéad Lehane is research manager for Future Directions International’s Global Food and Water Crises Research program. Her current research projects include Australia’s food system and water security in the Tibetan Plateau region. Shaping Conflict in the 21st Century—The Future of Food and Water Security. February 2, 2017. www.hidropolitikakademi.org/shaping-conflict-in-the-21st-century-the-future-of-food-and-water-security.html]

In his book, The Coming Famine, Julian Cribb writes that the wars of the 21st century will involve failed states, rebellions, civil conflict, insurgencies and terrorism. All of these elements will be triggered by competition over dwindling resources, rather than global conflicts with clearly defined sides. More than 40 countries experienced civil unrest following the food price crisis in 2008. The rapid increase in grain prices and prevailing food insecurity in many states is linked to the outbreak of protests, food riots and the breakdown of governance. Widespread food insecurity is a driving factor in creating a disaffected population ripe for rebellion. Given the interconnectivity of food security and political stability, it is likely food will continue to act as a political stressor on regimes in the Middle East and elsewhere. Addressing Insecurity Improving food and water security and encouraging resource sharing is critical to creating a stable and secure global environment. While food and water shortages contribute to a rising cycle of violence, improving food and water security outcomes can trigger the opposite and reduce the potential for conflict. With the global population expected to reach 9 billion by 2040, the likelihood of conflict exacerbated by scarcity over the next century is growing. Conflict is likely to be driven by a number of factors and difficult to address through diplomacy or military force. Population pressures, changing weather, urbanization, migration, a loss of arable land and freshwater resources are just some of the multi-layered stressors present in many states. Future inter-state conflict will move further away from the traditional, clear lines of military conflict and more towards economic control and influence.

#### Adaptation checks extinction from warming but CO2 prevents famine, collapse of ag, and ice age - those are coming now.

Moore 16 (Dr. Patrick Moore is a Senior Fellow with the Energy, Ecology and Prosperity program at the Frontier Centre for Public Policy. He has been a leader in the international environmental field for over 40 years. Dr. Moore is a Co-Founder of Greenpeace and served for nine years as President of Greenpeace Canada and seven years as a Director of Greenpeace International. Following his time with Greenpeace, Dr. Moore joined the Forest Alliance of BC where he worked for ten years to develop the Principles of Sustainable Forestry, which have now been adopted by much of the industry. In 2013, he published Confessions of a Greenpeace Dropout – The Making of a Sensible Environmentalist, which documents his 15 years with Greenpeace and outlines his vision for a sustainable future. THE POSITIVE IMPACT OF HUMAN CO2 EMISSIONS ON THE SURVIVAL OF LIFE ON EARTH, June 2016, <https://fcpp.org/sites/default/files/documents/Moore%20-%20Positive%20Impact%20of%20Human%20CO2%20Emissions.pdf>)

CO2 in the Modern Era The most important question facing a species on Earth today is how long would it have been in the absence of human-caused CO2 emissions until the gradual depletion of CO2 in the atmosphere fell to levels that began to decrease biomass due to starvation, thus signaling the beginning of the end of life on Earth? It is commonly believed that volcanic activity results in massive emissions of CO2 comparable to or greater than human-caused emissions. This is not the case. Whereas the original atmospheric CO2 was the result of massive outgassing from the Earth’s interior, there is no evidence that large volumes of new CO2 were added to the atmosphere during the 140-million-year decline leading to the present era. The eruption of Mount Pinatubo, the largest in recent history, is estimated to have released the equivalent of 2 per cent of the annual human-caused CO2 emissions. Therefore, in the absence of human-caused emissions, it could reasonably be presumed that CO2 levels would have continued to fall as they had done for the previous 140 million years.20 Judging by the timing of the many glacial and interglacial periods during the Pleistocene Ice Age, the next major glaciation period could begin any time. Interglacial periods have generally been of 10,000 years’ duration, and this Holocene interglacial period began nearly 12,000 years ago. In the absence of human-caused CO2 emissions and other environmental impacts, there is no reason to doubt that another major glaciation would have occurred, following the pattern that has been established for at least the past 800,000 years, as established by the European Project for Ice Coring in Antarctica (EPICA),21 and presumably for the past 2.5 million years of the Pletstocene Ice Age. These glaciations have coincided with the Milankovitch cycles.22 (See Figure 5) The Milankovitch cycles are determined by oscillations in the Earth’s orbit and by cycles of the tilt of the Earth toward the sun. The strong correlation between the onset of major periods of glaciation during the past 800,000 years and the Milankovitch cycles has led the majority of earth scientists and climatologists to accept the hypothesis that the major glaciations are tied to the Milankovitch cycles in a causeeffect relationship. For 90 million years from the late Jurassic Period to the Early Tertiary Period, global temperature rose considerably while CO2 levels steadily declined. Then after the Paleocene-Eocene Thermal Maximum, there began a 50-million-year cooling trend in global temperature to the current era. (See Figure 6) The Paleocene-Eocene Thermal Maximum saw an average global temperature [13] FRONTIER CENTRE FOR PUBLIC POLICY as much as 16°C higher than the temperature today. Yet, the ancestors of every species living today must have survived through this period, as they had also survived through previous much colder climates. It is instructive to note that despite the numerous periods of extreme climatic conditions and cataclysmic events, every species alive today is descended from species that survived those conditions. This leads one to question the predictions of mass species extinction and the collapse of human civilization if the average global temperature exceeds a rise of 2°C above today’s level.25 It may seem surprising that the average global temperature could have been 16°C higher in previous ages, as this Figure 5. Graph showing the atmospheric CO2 concentration and temperature from Antarctica for the most recent four interglacial periods, closely tied to the Milankovitch cycles of 100,000 years. This graph is based on data from the 420,000 year record obtained from the Vostok ice cores drilled by Russian scientists.23 Note the gradual nature of the onset of colder temperatures and the rapid warming at the end of the cycle. Note that the peak warming during the most recent interglacial period (the Holocene) is lower than during the previous three interglacial periods.24 Figure 6. Global surface temperature from 65 million YBP showing the major cooling trend over the past 50 million years. While the poles were considerably warmer than they are today, there was much less warming in the tropics, which remained habitable throughout. The Earth is in one of the coldest periods during the past 600 million years.26 [14] FRONTIER CENTRE FOR PUBLIC POLICY would appear to render parts of the Earth that are warm today virtually uninhabitable. The key to understanding this is that when the Earth warms, it does so disproportionally, depending on the latitude. While the Arctic and Antarctic experience considerable warming, there is much less warming in the tropics. Thus, the tropical regions remain habitable while the high latitudes shift from polar to temperate, and during the warmest ages, they shift to a tropical climate. It is clear from the 800,000-year Antarctic ice core record that the coldest periods during major glaciations coincide with the lowest levels of CO2 in the atmosphere. (see Figure 5) The correlation is certainly strong enough during this period to suggest a causal relationship between CO2 and temperature. However, there is disagreement in the literature about which is the cause and which is the effect. Those who ascribe the warming over the past century to greenhouse gas emissions, CO2 in particular, also tend to agree with the position set forth in Al Gore’s An Inconvenient Truth: The Planetary Emergency of Global Warming and What We Can Do about It, that the warming during the interglacial periods is caused by rising CO2 levels.27 However, it is problematic to postulate how the Milankovitch cycles could cause an increase or decrease in atmospheric CO2 levels, whereas it is plausible that the Milankovitch cycles could cause a fluctuation in global temperature due to changes in solar radiation, which in turn could cause either CO2 outgassing from or absorption into the oceans. Indeed, both sets of ice core data from Antarctica show that changes in temperature usually precede changes in CO2 levels, suggesting that temperature change is the cause of change in the level of CO2. 28 Some have suggested that although the onset of warming after a glaciation is caused by the Milankovitch cycles, the subsequent outgassing of CO2 from the ocean then becomes the predominant driver of further warming.29 Presumably, it would also be postulated that the cooling leading to glaciation is triggered by the Milankovitch cycle and then driven by reduced CO2 levels due to ocean absorption. This hypothesis is not proven. It is extremely unlikely or perhaps impossible to imagine how CO2 could have increased from a pre-industrial 280 ppm to 400 ppm in the absence of human-caused emissions. No other species, existing or imagined in the near future, is capable of digging and drilling into the massive deposits of fossil fuels and then burning them so as to release CO2 back into the atmosphere from where it had come in the first place. Many scientists think this increase in atmospheric CO2 is the dominant cause of the slight warming (0.5C) of the atmosphere over the past 65 years. Only time will tell if this is the case. Since the Little Ice Age peaked around 1700, the climate has been warming in fits and starts for about 300 years. It is possible that the most recent warming is a continuation of the longer period of warming that had already begun long before human-caused CO2 emissions could have been a factor. [15] FRONTIER CENTRE FOR PUBLIC POLICY HIGHER CO2 CONCENTRATIONS WILL INCREASE PLANT GROWTH AND BIOMASS It has been well demonstrated that the increase in CO2 in the atmosphere is responsible for increased plant growth on a global scale. Many studies suggest that nearly 25 per cent of human-caused CO2 emissions, or 2.5 Gt of carbon annually, are absorbed by plants, thus increasing global plant biomass. A recent study postulates that up to 50 per cent of human CO2 emissions are absorbed by increased plant growth.30 This has been described as a “greening of the Earth” as CO2 reaches concentrations well above the near-starvation levels experienced during the major glaciations of the Pleistocene.31 The most prestigious Australian science body, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), has shown that CO2 particularly benefits plants that are adapted to dry climates. In higher CO2 environments, they become more efficient at photosynthesis, growing faster without using more water.32 One of the most impressive records comes from an experimental forest in Germany where there is a continuous Figure 8. Change in net primary productivity of vegetation 1982 to 2010. The driest regions, such as Western Australia, sub-Saharan Africa, western India and the Great Plains of North America, show the greatest increase in plant growth.36 Figure 7. Craig Idso,expert on CO2 and author of the CO2Science website34 demonstrating the growth-rate of pine trees under ambient conditions versus the addition of 150 ppm, 300 ppm and 450 ppm CO2. In a higher CO2 world there will be a great increase in the growth of food crops, forests, and wild landscapes around the world. Studies also demonstrate that higher CO2 levels in the oceans will result in increased growth of phytoplankton and other marine plants.35 [16] FRONTIER CENTRE FOR PUBLIC POLICY record of forest growth since 1870. Since 1960, as CO2 emissions began to rise rapidly, the growth rate of individual trees has increased by 32 per cent to 77 per cent. While some of this may be due to the slight increase in temperature since 1960, the much higher growth rate is consistent with laboratory and field studies on the effect of increased CO2 levels on plants.33 It is not widely known that greenhouse operators worldwide inject additional CO2 into their greenhouses in order to increase the growth and yield of their crops. Among horticulturalists, it is well known that this practice can increase growth by 40 per cent or more. This is because the optimum level of CO2 for plant growth is between 1,000 ppm and 3,000 ppm in air, much higher than the 400 ppm in the global atmosphere today.37 Every species on Earth, including our own, is descended from ancestors that thrived in climates with much higher levels of CO2 than are present today. Discussion The debate about climate change has one side insisting that the “science is settled.” Yet, there is no scientific proof that increased CO2 will result in disaster, as CO2 has been higher during most of the history of life on Earth than it is today. On the other hand, it can be stated without a doubt that if CO2 once again falls to the level it was only 18,000 years ago, or lower, there would be a catastrophe unlike any known in human history. We are advised by many scientists that we should be worried about CO2 levels climbing higher when, in fact, we should actually be worried about CO2 levels sinking lower. Atmospheric CO2 Concentrations in the Future If humans had not begun to use fossil fuels for energy, it is reasonable to assume that atmospheric CO2 concentration would have continued to drop as it has done for the past 140 million years. It is also reasonable to assume that the Earth’s climate would continue to fluctuate between relatively long periods of glaciation and relatively short periods of interglacial climate similar to the present climate. Given continued withdrawal of carbon from the atmosphere into the ocean sediments, it would only be a matter of time before CO2 dropped to 150 ppm or lower during a period of glaciation. At the average rate of 32 Kt of carbon lost annually, this would occur in less than two million years from now. In other words, the beginning of the end of most life on planet Earth would begin in fewer years into the future than our genus of primates, Homo, has existed as a distinct taxonomic unit. It is instructive to note that our species is a tropical species that evolved at the equator in ecosystems as warm or warmer than today’s. We were only able to leave the warmth of the tropical climate due to harnessing fire, wearing clothing and building shelters. This allowed us to settle in temperate climes and even Arctic conditions by the sea where domesticated dogs as well as marine mammals made life possible for a very small population. However, we cannot grow food crops in abundance on glaciers or in frozen soil. Moreover, we would not be able to grow much of anything anywhere if the level of CO2 went below 150 ppm. There is a distinct possibility that no amount of additional CO2 will shift the climate out of the next major period of glaciation. This is not a reason to abandon hope but rather to marvel at the fact that we can actually put some of the CO2 needed for life back into the atmosphere while at the same time enjoying abundant, reasonably priced energy from fossil fuels. There has been a gradual net loss of CO2 from the atmosphere during the past 550 million years from approximately 14,000 Gt to approximately 370 Gt at the lowest level during the height of the last glaciation. This is a reduction of nearly 98 per cent of one of the most essential nutrients for life on Earth. In the absence of human CO2 emissions over the past century, it is difficult to imagine how this process of continuous removal of CO2 would be interrupted. Massive volcanism on a scale not seen for more than 200 million years would be required to [17] FRONTIER CENTRE FOR PUBLIC POLICY bring about a reversal in the long-term CO2 trend that has now been achieved by human CO2 emissions. There is no doubt the Earth’s interior has cooled substantially over its roughly 4.6-billion-year existence. This makes massive volcanism an ever-decreasing likelihood. There is no other plausible natural mechanism to return carbon to the global atmosphere in the form of CO2. The present Holocene interglacial has already endured longer than some previous interglacial periods. The Holocene is also somewhat cooler than previous interglacial periods. Of more urgent concern than the possible starvation of life two million years from now is what would happen at the onset of the next glaciation, possibly a relatively short time from now. In the absence of human CO2 emissions, both temperature and CO2 would have dropped to levels that would result in a continuous reduction in plant growth, bringing in climatic conditions similar to or perhaps even more severe than those that occurred in previous glaciations. This would certainly lead to widespread famine and likely the eventual collapse of human civilization. This scenario would not require two million years but possibly only a few thousand. Even if the conditions of the Little Ice Age reoccurred in the next hundreds of years with a human population of nine billion or more, we can be sure the population would not be nine billion for long. There is a strong argument to be made that the Earth is already in a cooling trend that is descending into the next 100,000-year cycle of major glaciation. See Figure 5 and note that in the three preceding interglacial periods, there was a sharp peak followed by a steady downward trend in temperature. The peak temperature in this Holocene interglacial period was during the Holocene Optimum between 5,000 and 9,000 years ago. Since then, the warming peaks have been diminishing, and the cool periods have been colder. The Little Ice Age, which peaked about 300 years ago, was possibly the coldest period of climate since the Holocene Optimum.39 A Paradigm Shift in the Perception of CO2 Independent scientist James Lovelock provides an interesting example of both these contrasting predictions of future catastrophe versus salvation regarding CO2 Figure 9. Reconstructed Greenland mean temperature anomalies (top) and Antarctic CO2 concentration (bottom). Halving the temperature anomalies to allow for polar amplification gives a reasonable approximation of global temperature change in the Holocene. Since the Holocene Optimum began about 9,000 years before present (ka BP), global temperature has fallen by ~1°C, though CO2 concentration rose throughout.38 [18] FRONTIER CENTRE FOR PUBLIC POLICY emissions. He is undoubtedly one of the foremost experts in atmospheric chemistry,40 which is why NASA retained him to design part of the life-detection equipment for the first U.S. Mars landers.41 He concluded from the results that there is no life on Mars. Since publishing his first book on the Gaia hypothesis in 1979, Lovelock became concerned with human civilization’s impact on the global atmosphere.42 He became a strong advocate for reducing CO2 emissions, stating that humans had become a “rogue species” against Gaia (the Earth). He went so far as to state in 2006, ‘“Before this century is over, billions of us will die, and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable . . . a broken rabble led by brutal warlords.”’43 Only four years later, in a public speech at London’s Science Museum in 2010, Lovelock recanted, stating, ‘It is worth thinking that what we are doing in creating all these carbon emissions, far from something frightful, is stopping the onset of a new ice age. If we hadn’t appeared on the earth, it would be due to go through another ice age and we can look at our part as holding that up. I hate all this business about feeling guilty about what we’re doing.’44 This abrupt reversal of Lovelock’s interpretation of CO2 is precisely what is required universally to avoid the tragedy of depriving billions of people of reasonably priced, reliable energy, especially those with a need to lift themselves out of poverty. There must be a total paradigm shift from demonizing fossil fuels and fearing CO2 as a toxic pollutant to celebrating CO2 as the giver of life that it is while continuing to use fossil fuels ever-more efficiently. Like Lovelock, we should be hopeful that CO2 will prove to be the moderate warming influence that it is predicted to be in theory. A somewhat warmer world with a higher level of CO2 in the atmosphere would result in a greener world with more plant biomass, higher yields of food crops and trees, a more hospitable climate in high northern latitudes and a possible reduction in the likelihood of another major glaciation. It is highly probable, and ironic, that the existence of life itself may have predetermined its own eventual demise due mainly to the development of CaCO3 as armour plating in marine organisms.45 The fact that humans appear able to reverse this fate temporarily due to our recycling of CO2 back into the atmosphere by burning fossil fuels for energy verges on the miraculous. Nevertheless, there is only so much fossil fuel, and once burned, it is not renewable in the short to medium term. The vast bulk of carbon is sequestered into carbonaceous rocks, mainly as CaCO3. Today, about 5 per cent of human CO2 emissions are derived from converting CaCO3 with heat into CO2 and CaO (lime) to manufacture cement. Therefore, when fossil fuels become scarce in future centuries, and if CO2 again begins to dwindle, we will have the option of producing additional CO2 by burning limestone with nuclear or solar energy, with lime for cement as a useful by-product. This has the potential to extend the existence of a highly productive living Earth into the far distant future. It is clear from the preceding discussion that rather than bringing on a catastrophic climate condition, human CO2 emissions are serving to reinstate a balance to the global carbon cycle. By reversing the 140-million-year decline in atmospheric CO2, we are helping to ensure the continuation of carbon-based life on Earth. [19] FRONTIER CENTRE FOR PUBLIC POLICY CONCLUSION CO2 is essential for life, and twice in the history of modern life there have been periods of steep decline in the concentration of CO2 in the global atmosphere. If this decline were to have continued at the same rate into the future, CO2 would eventually fall to levels insufficient to support plant life, possibly in less than two million years. More worrisome is the possibility in the nearer future that during a future glaciation, CO2 may fall to 180 ppm or lower, thus greatly reducing the growth of food crops and other plants. Human CO2 emissions have staved off this possibility so that at least during a period of glaciation, CO2 would be high enough to maintain a productive agricultural industry. A 140 million year decline in CO2 to levels that came close to threatening the survival of life on Earth can hardly be described as “the balance of nature”. To that extent human emissions are restoring a balance to the global carbon cycle by returning some of the CO2 back to the atmosphere that was drawn down by photosynthesis and CaCO3 production and subsequently lost to deep sediments. This extremely positive aspect of human CO2 emissions must surely be weighed against the unproven hypothesis that human CO2 emissions are mainly responsible for the slight warming of the climate in recent years and will cause catastrophic warming over the coming decades. The fact that the current warming began about 300 years ago during the Little Ice Age indicates that it may at least in part be the continuation of the same natural forces that have caused the climate to change through the ages.

#### Causes nuclear war and chemical weapons – the risk is high and it causes extinction.

Cribb 21 [Julian Cribb, distinguished science writer with more than thirty awards for journalism, October 3, 2019. “Food or War.” Cambridge University Press. https://www.cambridge.org/core/books/food-or-war/2D6F728A71C0BFEA0CEC85897066DCAF]

Although actual numbers of warheads have continued to fall from its peak of 70,000 weapons in the mid 1980s, scientists argue the danger of nuclear conflict in fact increased in the first two decades of the twenty first century. This was due to the modernisation of existing stockpiles, the adoption of dangerous new technologies such as robot delivery systems, hypersonic missiles, artificial intelligence and electronic warfare, and the continuing leakage of nuclear materials and knowhow to nonnuclear nations and potential terrorist organisations. In early 2018 the hands of the ‘ Doomsday Clock ’ , maintained by the Bulletin of the Atomic Scientists, were re-set at two minutes to midnight, the highest risk to humanity that it has ever shown since the clock was introduced in 1953. This was due not only to the state of the world ’s nuclear arsenal, but also to irresponsible language by world leaders, the growing use of social media to destabilise rival regimes, and to the rising threat of uncontrolled climate change (see below). 12 In an historic moment on 17 July 2017, 122 nations voted in the UN for the first time ever in favour of a treaty banning all nuclear weapons. This called for comprehensive prohibition of “ a full range of nuclear-weapon-related activities, such as undertaking to develop, test, produce, manufacture, acquire, possess or stockpile nuclear weapons or other nuclear explosive devices, as well as the use or threat of use of these weapons. ” 13 However, 71 other countries– including all the nuclear states– either opposed the ban, abstained or declined to vote. The Treaty vote was nonetheless interpreted by some as a promising first step towards abolishing the nuclear nightmare that hangs over the entire human species. In contrast, 192 countries had signed up to the Chemical Weapons Convention to ban the use of chemical weapons, and 180 to the Biological Weapons Convention. As of 2018, 96 per cent of previous world stocks of chemical weapons had been destroyed– but their continued use in the Syrian conflict and in alleged assassination attempts by Russia indicated the world remains at risk. 14 As things stand, the only entities that can afford to own nuclear weapons are nations– and if humanity is to be wiped out, it will most likely be as a result of an atomic conflict between nations. It follows from this that, if the world is to be made safe from such a fate it will need to get rid of nations as a structure of human self-organisation and replace them with wiser, less aggressive forms of self-governance. After all, the nation state really only began in the early nineteenth century and is by no means a permanent feature of self-governance, any more than monarchies, feudal systems or priest states. Although many people still tend to assume it is. Between them, nations have butchered more than 200 million people in the past 150 years and it is increasingly clear the world would be a far safer, more peaceable place without either nations or nationalism. The question is what to replace them with. Although there may at first glance appear to be no close linkage between weapons of mass destruction and food, in the twenty first century with world resources of food, land and water under growing stress, nothing can be ruled out. Indeed, chemical weapons have frequently been deployed in the Syrian civil war, which had drought, agricultural failure and hunger among its early drivers. And nuclear conflict remains a distinct possibility in South Asia and the Middle East, especially, as these regions are already stressed in terms of food, land and water, and their nuclear firepower or access to nuclear materials is multiplying. It remains an open question whether panicking regimes in Russia, the USA or even France would be ruthless enough to deploy atomic weapons in an attempt to quell invasion by tens of millions of desperate refugees, fleeing famine and climate chaos in their own homelands– but the possibility ought not to be ignored. That nuclear war is at least a possible outcome of food and climate crises was first flagged in the report The Age of Consequences by Kurt Campbell and the US-based Centre for Strategic and International Studies, which stated ‘ it is clear that even nuclear war cannot be excluded as a political consequence of global warming ’ . 15 Food insecurity is therefore a driver in the preconditions for the use of nuclear weapons, whether limited or unlimited.

#### Ice age coming but warming stops it – most recent ev.

Martin 2/7 [Sean Martin, 2-7-2020, "Ice age shock: ‘Timing is right for the next ice age to come around soon’," Express.co.uk, https://www.express.co.uk/news/science/1239246/ice-age-long-range-weather-forecast-climate-change-weather-warning, accessed 9-5-2020]LHSBC

Over millions of years, Earth goes through ice ages and then warm periods depending on the planet’s rotation around the Sun. Currently, it is in a warmer period – although it is important to note that it is exacerbated by global warming and not an explanation for the unnaturally [warming planet](https://www.express.co.uk/latest/climate-change).∂ However, a climate scientist has said Earth should be gearing up to go through another ice age soon.∂ There have been at least five major ice ages on Earth throughout its history, with the last one ending roughly 12,800 years ago.∂ These ice ages lasted for hundreds of thousands of years and saw temperatures drop sharply across the globe – cold enough to stop snow from melting and causing glaciers to form.∂ Professor James Renwick from the School of Geography, Environment, and Earth Sciences at the University of Wellington has said the planet should be going through a cooler period in due time.∂ He wrote in an article for the Conversation: “The timing is right for the next ice age to come around soon.∂ “For the past two and a half million years, the Earth has experienced regular ice ages, related to slow changes to earth’s orbit around the sun and changes in the earth’s axis of rotation (Milankovitch cycles).∂ “We are currently in one of the warm periods (interglacials) between ice ages and the present interglacial should be ending about now.”∂ However, Prof Renwick added: “There is a catch”.∂ Due to human activity and the pumping of greenhouse gasses into the atmosphere, the next ice age has been seriously delayed.∂ Carbon dioxide traps heat within the atmosphere, which is preventing the planet from going into another cooling cycle.∂ This is yet further evidence that human activity is destroying the fragile ecosystem of the planet.∂ Prof Renwick said: “Ice ages didn’t happen for millions of years because there was too much carbon dioxide in the air.∂ “The change in sunlight associated with the ice age cycles is quite subtle and takes thousands of years to make a difference to temperatures and to ice gain or loss.∂ “When atmospheric carbon dioxide is above about 300 parts per million, the infrared warming effect is so strong it drowns out the more subtle Milankovitch cycles and there are no ice ages.∂ “Coming out of the Pliocene period just under three million years ago, carbon dioxide levels dropped low enough for the ice age cycles to commence.∂ “Now, carbon dioxide levels are over 400 parts per million and are likely to stay there for thousands of years, so the next ice age is postponed for a very long time.

#### Ice age causes extinction.

Chapman 08 (Phil, geophysicist and astronautical engineer, bachelor of science degree in Physics and Mathematics from Sydney University, a master of science degree in Aeronautics and Astronautics from the Massachusetts Institute of Technology, “Sorry to ruin the fun, but an ice age cometh,” 4/23/08, The Australian, <http://www.theaustralian.com.au/news/sorry-to-ruin-the-fun-but-an-ice-age-cometh/story-e6frg73o-1111116134873>)

What is scary about the picture is that there is only one tiny sunspot. Disconcerting as it may be to true believers in global warming, the average temperature on Earth has remained steady or slowly declined during the past decade, despite the continued increase in the atmospheric concentration of carbon dioxide, and now the global temperature is falling precipitously. All four agencies that track Earth's temperature (the Hadley Climate Research Unit in Britain, the NASA Goddard Institute for Space Studies in New York, the Christy group at the University of Alabama, and Remote Sensing Systems Inc in California) report that it cooled by about 0.7C in 2007. This is the fastest temperature change in the instrumental record and it puts us back where we were in 1930. If the temperature does not soon recover, we will have to conclude that global warming is over. There is also plenty of anecdotal evidence that 2007 was exceptionally cold. It snowed in Baghdad for the first time in centuries, the winter in China was simply terrible and the extent of Antarctic sea ice in the austral winter was the greatest on record since James Cook discovered the place in 1770. It is generally not possible to draw conclusions about climatic trends from events in a single year, so I would normally dismiss this cold snap as transient, pending what happens in the next few years. This is where SOHO comes in. The sunspot number follows a cycle of somewhat variable length, averaging 11 years. The most recent minimum was in March last year. The new cycle, No.24, was supposed to start soon after that, with a gradual build-up in sunspot numbers. It didn't happen. The first sunspot appeared in January this year and lasted only two days. A tiny spot appeared last Monday but vanished within 24 hours. Another little spot appeared this Monday. Pray that there will be many more, and soon. The reason this matters is that there is a close correlation between variations in the sunspot cycle and Earth's climate. The previous time a cycle was delayed like this was in the Dalton Minimum, an especially cold period that lasted several decades from 1790. Northern winters became ferocious: in particular, the rout of Napoleon's Grand Army during the retreat from Moscow in 1812 was at least partly due to the lack of sunspots. That the rapid temperature decline in 2007 coincided with the failure of cycle No.24 to begin on schedule is not proof of a causal connection but it is cause for concern. It is time to put aside the global warming dogma, at least to begin contingency planning about what to do if we are moving into another little ice age, similar to the one that lasted from 1100 to 1850. There is no doubt that **the next little ice age would be much worse than the previous one and much more harmful than anything warming may do.** There are many more people now and we have become dependent on a few temperate agricultural areas, especially in the US and Canada. Global warming would increase agricultural output, but global cooling will decrease it. Millions will starve if we do nothing to prepare for it (such as planning changes in agriculture to compensate), and millions more will die from cold-related diseases. There is also another possibility, remote but much more serious. The Greenland and Antarctic ice cores and other evidence show that for the past several million years, severe glaciation has almost always afflicted our planet. The bleak truth is that, under normal conditions, most of North America and Europe are buried under about 1.5km of ice. This bitterly frigid climate is interrupted occasionally by brief warm interglacials, typically lasting less than 10,000 years. The interglacial we have enjoyed throughout recorded human history, called the Holocene, began 11,000 years ago, so the ice is overdue. We also know that glaciation can occur quickly: the required decline in global temperature is about 12C and it can happen in 20 years. The next descent into an ice age is inevitable but may not happen for another 1000 years. On the other hand, it must be noted that the cooling in 2007 was even faster than in typical glacial transitions. If it continued for 20 years, the temperature would be 14C cooler in 2027. By then, most of the advanced nations would have ceased to exist, vanishing under the ice, and the rest of the world would be faced with a catastrophe beyond imagining. Australia may escape total annihilation but would surely be overrun by millions of refugees. Once the glaciation starts, it will last 1000 centuries, an incomprehensible stretch of time. If the ice age is coming, there is a small chance that we could prevent or at least delay the transition, if we are prepared to take action soon enough and on a large enough scale. For example: We could gather all the bulldozers in the world and use them to dirty the snow in Canada and Siberia in the hope of reducing the reflectance so as to absorb more warmth from the sun. We also may be able to release enormous floods of methane (a potent greenhouse gas) from the hydrates under the Arctic permafrost and on the continental shelves, perhaps using nuclear weapons to destabilise the deposits. We cannot really know, but my guess is that the odds are at least 50-50 that we will see significant cooling rather than warming in coming decades. The probability that we are witnessing the onset of a real ice age is much less, perhaps one in 500, but not totally negligible. All those urging action to curb global warming need to take off the blinkers and give some thought to what we should do if we are facing global cooling instead. It will be difficult for people to face the truth when their reputations, careers, government grants or hopes for social change depend on global warming, but the fate of civilisation may be at stake. In the famous words of Oliver Cromwell, "I beseech you, in the bowels of Christ, think it possible you may be mistaken."

#### Renewables are a more unreliable source of energy than the grid.

Smith 13 – [(Rebecca Smith, National Energy Reporter for the Wall Street Journal.) “California Girds for Electricity Woes: Increased Reliance on Wind, Solar Power Means Power Production Fluctuates.” Feb 26. 2013. <https://www.wsj.com/articles/SB10001424127887323699704578328581251122150?mod=googlenews_wsj> ] SJDI

SAN FRANCISCO—California is weighing how to avoid a looming electricity crisis that could be brought on by its growing reliance on wind and solar power. Regulators and energy companies met Tuesday, hoping to hash out a solution to the peculiar stresses placed on the state's network by sharp increases in wind and solar energy. Power production from renewable sources fluctuates wildly, depending on wind speeds and weather. California has encouraged growth in solar and wind power to help reduce greenhouse-gas emissions. At the same time, the state is running low on conventional plants, such as those fueled by natural gas, that can adjust their output to keep the electric system stable. The amount of electricity being put on the grid must precisely match the amount being consumed or voltages sag, which could result in rolling blackouts. At Tuesday's meeting, experts cautioned that the state could begin seeing problems with reliability as soon as 2015. California isn't the only state having trouble coping with a growing share of renewables. Texas also needs more resources, such as gas-fired power plants, that can adjust output in response to unpredictable production from wind farms. Renewable power has seen a boom in both states. On Feb. 9, wind farms in Texas set a record for output, providing nearly 28% of the state's supply for the day. Production hasn't hit that level yet in California, but the state's goal is to get one-third of its electricity from renewable resources by 2020. "I think we're going to end up closer to 40%," said Robert Weisenmiller, chairman of the California Energy Commission, the state's policy and planning agency for electricity. A decade ago, California was hit by an electricity crisis marked by price surges and rolling blackouts, stemming from market manipulation and tightening electricity supplies in a newly deregulated market. To prevent a recurrence, state regulators passed rules requiring utilities to line up enough energy to meet even high power demand, with a special emphasis on in-state renewable resources. "California has been well served by the procurement process since the crisis," said Steve Berberich, chief executive of the California Independent System Operator, which runs the state's grid. "The problem is we have a system now that needs flexibility, not capacity." Changes in California's market have attracted lots of new generation; the state expects to have 44% more generating capacity than it needs next year. Grid officials say they expect the surplus to fall to 20% by 2022, though it will remain high for about a decade. However, the surplus generating capacity doesn't guarantee steady power flow. Even though California has a lot of plants, it doesn't have the right mix: Many of the solar and wind sources added in recent years have actually made the system more fragile, because they provide power intermittently. Electricity systems need some surplus, so they can cover unexpected generator outages or transmission-line failures, but having too much can depress the prices generators can charge for electricity. In part because of low power prices, many gas-fired generation units aren't profitable enough to justify refurbishments required by pending federal regulations under the Clean Water Act. That means they are likely to be shut by 2020, adding to the state's power woes. By July, state officials hope to have a plan in place addressing the problem. Turf issues among state and federal regulators could complicate the process. Michael Peevey, president of the California Public Utilities Commission, which regulates utilities, said action is clearly needed, but he isn't sure whether the market needs "small adjustments or a major overhaul." Utility executives are calling for immediate action, pointing to the risk of rolling blackouts. "We see the issue hitting as soon as 2013, 2014, 2015," said Todd Strauss, the head of planning and analysis for PG&E Corp., a big utility serving Northern California, who attended Tuesday's meeting. "If we thought it was far out, we wouldn't be here."

#### Grid reliability depends on dispatchable generation from nonrenewable energy—minor shifts in the supply-demand balance cascade into blackouts

Fisher 15—IER Economist (Travis, “ASSESSING EMERGING POLICY THREATS TO THE U.S. POWER GRID,” <http://instituteforenergyresearch.org/wp-content/uploads/2015/02/Threats-to-U.S.-Power-Grid.compressed.pdf>, dml)

Electric reliability in the U.S. is excellent overall, which is a testament to the men and women working in power plants and control rooms across the country. Aside from two major blackouts (1965 and 2003), electricity consumers in the U.S. have not been subjected to persistent, region-wide blackouts —unlike less developed nations 8 with less reliable electric systems. 9 Given the positive track record of America’s power grid, it is no surprise that some experts characterize the grid as “underrated.” According to a 2014 report 10 by the North American Electric Reliability Corporation (NERC)—which is the U.S.’s federally designated electric reliability organization—the grid remains stable: The availability of the bulk transmission system remained high from 2008 to 2013. The [alternating current] transmission circuit availability remained above 97 percent, and transmission transformer availability was above 98 percent for the 2010 to 2013 period (unavailability includes both forced and planned outages). High transmission availability demonstrates that the [bulk power system] is able to perform reliably over a variety of operating conditions.11 This report focuses on the power plants and high-voltage transmission lines that make up the bulk power grid. Even with a top- 12 notch bulk power grid covering the U.S., consumers will experience outages on local distribution lines from time to time. This is 13 due largely to the fact that many of our neighborhood power lines are on overhead poles and thus vulnerable to damage from storms, ice, falling trees, etc. The alternative —burying distribution lines underground—is impractical and would be incredibly expensive. For the purposes of this report, 14 statements about grid reliability refer to the bulk power grid. The U.S. power grid actually consists of three region-wide interconnections: the Eastern Interconnection, the Western Interconnection, and the Texas Interconnection. When we refer to the American power grid, we refer to these interconnections collectively, with a special focus on their generation and transmission infrastructure. To keep these interconnections up and running (and to keep the lights on), electricity generators must meet the total demand on the system at all times and do so within tight margins of error. Electricity is a unique good in that it must be produced at the moment it is consumed, and grid supply must match demand during every second of every day. As people demand higher or lower amounts of power throughout the day (shown below), reliable generators adjust their output accordingly. “Baseload” plants run consistently at nearly all hours, whereas other plants come online to satisfy higher levels of demand or “load.” Having a reliable grid means matching supply to demand in real time, all the time. The technology that makes large electricity grids possible in the first place—the alternating current (AC) system—presents some operating challenges. For example, in an AC system, all generators and devices running on the grid are synchronized to the same frequency (in the U.S., grid current alternates at 60 cycles per second or 60 hertz). If demand outstrips supply (or vice versa), the whole system experiences a dangerous drag (or boost) in frequency that can cause blackouts across a large area. Diverging from 60 hertz is dangerous for some of the equipment on the grid, including generators, so power plants will shut themselves off when the frequency changes too much. For example, in the 2003 blackout that spread across the Eastern U.S., grid operators were slow to realize that a generator had failed and transmission lines had tripped offline, causing other transmission lines to overload, which, in turn, caused other generators to trip offline, further losing power and exacerbating the frequency collapse. The cascading effect continued until much of the Eastern U.S. and Canada suffered a major blackout. The 2003 blackout 15 demonstrated that, even in good conditions, the power grid is susceptible to system-wide disruptions. To understand how fragile the balance of the grid truly is—and how well operators manage the grid—look no further than the second-by-second frequency fluctuations across the three interconnections. Below is a screen capture of the real-time, color-coded frequency map maintained by the Power Information Technology Laboratory at the University of Tennessee.16 Blue areas are experiencing lower grid frequency (less than 60 hertz), indicating that overall electricity supply is lagging demand in that moment, and red areas are the opposite. Green areas indicate that the system is balanced at 60 hertz. These conditions change in real time, cycling second-by-second through the rainbow of colors. As total demand on the system changes (as lights, electric motors, air conditioners, computers, etc. turn on and off), hundreds of generators respond by increasing or decreasing their power output at a moment’s notice. The blues and reds reflect the fact that generators require some reaction time to respond to changing power demand. Minor deviations in frequency are normal—extreme deviations or “frequency excursions” can cause serious reliability problems.17 Grid planners and operators go to great lengths to make sure the grid’s delicate supply/demand balance is stable, not just minute to minute, but also five and ten years into the future. In those long-range plans, having enough reliable supply to meet demand in many different situations is key. Planners pay special attention to peak demand forecasts, ensuring there will always be enough reliable generation to match demand at its highest. The buffer or cushion above peak demand provided by reliable sources of electricity is called the “reserve margin,” and it is absolutely crucial in grid planning. Planners also take into account the potential loss of equipment such as transmission lines, substations, generators, and so on. That is why this report stresses the importance of having enough reliable generators up and running. The U.S. Energy Information Administration (EIA) is careful to distinguish between “dispatchable” generation—power plants that can be controlled, i.e., turned on and off, ramped up and down—and nondispatchable generation. In the U.S., 18 power plants fueled by coal, natural gas, and nuclear power are the largest sources of dispatchable generation. Nondispatchable sources include wind, solar, and hydroelectric power. This distinction is 19 important because dispatchable generation is absolutely essential to grid reliability. According to the most recent data from the EIA, the U.S. is home to an amazing 875 gigawatts (GW) of dispatchable generation from coal, natural gas, petroleum, and nuclear power. That is more installed 20 capacity than all of Central and South America, Eurasia, and the Middle East combined.21

#### Causes chemical explosions - functional nuke war.

Yulia Latynina 03. Journalist for Novaya Gazeta. World Press Review. Vol. 50, No. 11

The scariest thing about the cascading power outages was not spoiled groceries in the fridge, or elevators getting stuck, or even, however cynical it may sound, sick patients left to their own devices without electricity-powered medical equipment. The scariest thing of all was chemical plants and refineries with 24-hour operations, which, if interrupted, can result in consequences even more disastrous and on a larger scale than those of an atomic bomb explosion. So it is safe to say that Americans got lucky this time. Several hours after the disaster, no one could know for certain whether the power outage was caused by an accident or someone’s evil design. In fact, the disaster on the East Coast illustrates just one thing: A modern city is in itself a bomb, regardless of whether someone sets off the detonator intentionally or by accident. As I recall, when I was writing my book Industrial Zone, in which business deals were bound to lead to a massive industrial catastrophe, at some point in time I was considering making a cascading power outage the cause of a catastrophe. Back then, I was amazed and shocked at the swiftness of the process. Shutting down at least one electric power plant is enough to cause a drop in power output throughout the entire power grid. This is followed by an automatic shutdown of nuclear power plants, a further catastrophic drop in power, and finally a cascading outage of the entire grid system. To start with, the electric power plant may burn out because of just about anything. In Ekibastuz [Kazakhstan] under the Soviet regime, a large hydroelectric power station was burned to the ground because of the negligence of one extremely smart worker, who used a wrench to unscrew the cap from a pressurized oil vessel. A stream of oil shot up to the ceiling; the worker got scared and dropped the wrench, which hit against the steel floor and created a spark that set the stream of oil on fire. Then the lights went off. Which brings us back to our main thesis. In order to destroy a modern city, one does not need to have nuclear weapons, because the modern city is in itself a weapon. The city infrastructure is an infrastructure with dual purpose. Why should terrorists need chemical weapons if their enemies already have chemical plants? Why should terrorists need nuclear weapons if their enemies already have skyscrapers and airplanes with tanks full of fuel, which can be hijacked with the help of a penknife? Why would they need sophisticated military technologies and stolen explosives if the KamAZ truck that blew up the hospital in Mozdok was carrying a load of, let us say, fertilizer? So-called dictatorship regimes and terrorists themselves have long since figured that out. That is exactly why there were no nuclear or bacteriological weapons in Iraq. Why not? A bomb planted on an airplane would kill dozens fewer people than a failure of the air traffic control system of a large airport. Sept. 11 taught the world that the infrastructure of the modern civilization could be as lethal as the weapons themselves.

#### Gurantees extinction.

Starr 17 (Steven; director of the University of Missouri’s Clinical Laboratory Science Program, senior scientist at the Physicians for Social Responsibility, Associate member of the Nuclear Age Peace Foundation, expert in the environmental consequences of nuclear war; 1/9/17; “Turning a Blind Eye Towards Armageddon — U.S. Leaders Reject Nuclear Winter Studies”; <https://fas.org/2017/01/turning-a-blind-eye-towards-armageddon-u-s-leaders-reject-nuclear-winter-studies/>; Federation of American Scientists; accessed 11/24/18; TV)

The detonation of an atomic bomb with this explosive power will instantly ignite fires over a surface area of three to five square miles. In the recent studies, the scientists calculated that the blast, fire, and radiation from a war fought with 100 atomic bombs could produce direct fatalities comparable to all of those worldwide in World War II, or to those once estimated for a “counterforce” nuclear war between the superpowers. However, the long-term environmental effects of the war could significantly disrupt the global weather for at least a decade, which would likely result in a vast global famine. The scientists predicted that nuclear firestorms in the burning cities would cause at least five million tons of black carbon smoke to quickly rise above cloud level into the stratosphere, where it could not be rained out. The smoke would circle the Earth in less than two weeks and would form a global stratospheric smoke layer that would remain for more than a decade. The smoke would absorb warming sunlight, which would heat the smoke to temperatures near the boiling point of water, producing ozone losses of 20 to 50 percent over populated areas. This would almost double the amount of UV-B reaching the most populated regions of the mid-latitudes, and it would create UV-B indices unprecedented in human history. In North America and Central Europe, the time required to get a painful sunburn at mid-day in June could decrease to as little as six minutes for fair-skinned individuals. As the smoke layer blocked warming sunlight from reaching the Earth’s surface, it would produce the coldest average surface temperatures in the last 1,000 years. The scientists calculated that global food production would decrease by 20 to 40 percent during a five-year period following such a war. Medical experts have predicted that the shortening of growing seasons and corresponding decreases in agricultural production could cause up to two billion people to perish from famine. The climatologists also investigated the effects of a nuclear war fought with the vastly more powerful modern thermonuclear weapons possessed by the United States, Russia, China, France, and England. Some of the thermonuclear weapons constructed during the 1950s and 1960s were 1,000 times more powerful than an atomic bomb. During the last 30 years, the average size of thermonuclear or “strategic” nuclear weapons has decreased. Yet today, each of the approximately 3,540 strategic weapons deployed by the United States and Russia is seven to 80 times more powerful than the atomic bombs modeled in the India-Pakistan study. The smallest strategic nuclear weapon has an explosive power of 100,000 tons of TNT, compared to an atomic bomb with an average explosive power of 15,000 tons of TNT. Strategic nuclear weapons produce much larger nuclear firestorms than do atomic bombs. For example, a standard Russian 800-kiloton warhead, on an average day, will ignite fires covering a surface area of 90 to 152 square miles. A war fought with hundreds or thousands of U.S. and Russian strategic nuclear weapons would ignite immense nuclear firestorms covering land surface areas of many thousands or tens of thousands of square miles. The scientists calculated that these fires would produce up to 180 million tons of black carbon soot and smoke, which would form a dense, global stratospheric smoke layer. The smoke would remain in the stratosphere for 10 to 20 years, and it would block as much as 70 percent of sunlight from reaching the surface of the Northern Hemisphere and 35 percent from the Southern Hemisphere. So much sunlight would be blocked by the smoke that the noonday sun would resemble a full moon at midnight. Under such conditions, it would only require a matter of days or weeks for daily minimum temperatures to fall below freezing in the largest agricultural areas of the Northern Hemisphere, where freezing temperatures would occur every day for a period of between one to more than two years. Average surface temperatures would become colder than those experienced 18,000 years ago at the height of the last Ice Age, and the prolonged cold would cause average rainfall to decrease by up to 90%. Growing seasons would be completely eliminated for more than a decade; it would be too cold and dark to grow food crops, which would doom the majority of the human population. NUCLEAR WINTER IN BRIEF The profound cold and darkness following nuclear war became known as nuclear winter and was first predicted in 1983 by a group of NASA scientists led by Carl Sagan. During the mid-1980s, a large body of research was done by such groups as the Scientific Committee on Problems of the Environment (SCOPE), the World Meteorological Organization, and the U.S. National Research Council of the U.S. National Academy of Sciences; their work essentially supported the initial findings of the 1983 studies. The idea of nuclear winter, published and supported by prominent scientists, generated extensive public alarm and put political pressure on the United States and Soviet Union to reverse a runaway nuclear arms race, which, by 1986, had created a global nuclear arsenal of more than 65,000 nuclear weapons. Unfortunately, this created a backlash among many powerful military and industrial interests, who undertook an extensive media campaign to brand nuclear winter as “bad science” and the scientists who discovered it as “irresponsible.” Critics used various uncertainties in the studies and the first climate models (which are primitive by today’s standards) as a basis to criticize and reject the concept of nuclear winter. In 1986, the Council on Foreign Relations published an article by scientists from the National Center for Atmospheric Research, who predicted drops in global cooling about half as large as those first predicted by the 1983 studies and described this as a “nuclear autumn.”

#### Warming solves rare earth mineral shortages.

McGinnis 12 (Paul E. McGinnis is a contributing writer to EcoWatch. He has interviewed a stellar array of change makers including Sylvia Earle, Dean Kamen, Ray Kurzweil, Fabien Cousteau and Josh Fox. Paul is also a New York based real estate broker, and green building and renovation consultant. He is a member of the U.S. Green Building Council, the Northeast Sustainable Energy Association, and the New York State Association of Realtors. McGinnis, P. E. “Greenland’s Ice Melt Ignites Race for Rare Earth Metals,” 11/12/2012, http://ecowatch.com/2012/11/12/greenlands-rare-earth-metals//ghs-kw)

Greenland’s vast, pristine, virtually-untouched terrain is becoming a hotbed for resource extraction. The Arctic is melting at an unprecedented rate, making Greenland’s natural resources, including high demand commodities such as oil, gas, gold, iron, copper and rare earth metals, more accessible. Insatiable international oil, gas and mining conglomerates are now aggressively vying to control access to the riches glaciers once denied. “This is not just a region of ice and polar bears,” Prime Minister of Greenland, Kuupik Kleist, told Reuters in the capital Nuuk, formerly known by its Danish name Godthab. “Developing countries are interested in a more political role in opening up of the Arctic. Greenland could serve as a stepping stone.” Greenland has less than 60,000 people living in an 836,109 square mile area. Comparatively, Greenland is almost a quarter the size of the continental U.S. Until recently, the country was regarded by strategists as barren wasteland with little political or economic import. But now this once overlooked arctic island is being targeted by government and politically connected entities, anxious to extract what lies beneath the glacier ice sheet. The powerful and deep-pocketed interests include China, the U.S., Russia and the European Union. Many in Greenland are excited about the attention the remote island nation is attracting and are happy to have world powers courting Greenland looking to strike it rich. Greenlanders are hoping they too will get rich along with the foreign investors. Henrik Stendal, head of the geology department at Greenland’s Bureau of Minerals and Petroleum, a Dane who has worked in Greenland since 1970, told the U.K. Guardian in July: “We have shown that we have huge potential—it has been an eye-opener for the mining industry. The EU has shown a lot of interest and that’s been very good—we believe this could be very valuable for Greenland. There could be benefits for everyone—at present most of our income is from fishing and a little bit of tourism, so the government really wants another income.” In addition to oil and gas, and perhaps even more attractive to industry, are rare earth metals that lie beneath the ground in Greenland that are essential components in new technologies, including computer hard drives, cell phones and flat screen devices. The world is consuming these rare earth metals at a voracious rate. For instance, in the first weekend of sales, the 4G iPad mini sold four million units. Our appetite for these devices and the rare metals required seems unending. Rare earth metals are also essential elements to military guidance systems and other defense related technology. Most of the rare earth metals are currently sourced in China. Now, the world’s nations are considering Greenland’s resources not just from an economic point of view, but, perhaps more importantly, a strategic perspective. There is a national security imperative when looking at availability of these resources and who controls them. The New York Times reported in September: “Western nations have been particularly anxious about Chinese overtures to this poor and sparsely populated island, a self-governing state within the Kingdom of Denmark, because the retreat of its ice cap has unveiled coveted mineral deposits, including rare earth metals that are crucial for new technologies like cellphones and military guidance systems. A European Union vice president, Antonio Tajani, rushed here to Greenland’s capital in June, offering hundreds of millions in development aid in exchange for guarantees that Greenland would not give China exclusive access to its rare earth metals, calling his trip ‘raw mineral diplomacy.'” “In the past 18 months, Secretary of State Hillary Rodham Clinton and President Lee Myung-bak of South Korea have made debut visits here, and Greenland’s prime minister, Kuupik Kleist, was welcomed by President José Manuel Barroso of the European Commission in Brussels.”

#### Uranium shortages are coming – triggers nuclear resource wars over uranium and REMs.

Konstantiov 12 (Mihail Konstantiov, Professor of Mathematics with the University of Architecture, Civil Engineering and Geodesy (UACEG), Bulgaria, Vice-Chancellor of UACEG (1999-2003), Member of scientific councils and commissions, Member of the Board of IICREST. He has authored 30 books and over 500 scientific papers. He has participated in international scientific projects of EU and NATO and realized research and lecturing visits in British, German and French universities. Prof. Konstantinov has been Member and Vice Chair of the Central Election Commission of Bulgaria and Voting coordinator of OSCE (1997-) as well as the Bulgarian representative at the Council of Europe on electronic voting. In addition to his scientific publications, he has authored more than 300 articles in Bulgarian editions devoted to social and political issues with emphasis on election practice and legislation., “Uranium time bomb ticking”, Europost, 2-11-2012, http://www.europost.bg/article?id=3763)

In 1945, the US had three nucle­ar bombs - two plu­to­ni­um-based devi­ces and a ura­ni­um-based one. The first one was det­o­nat­ed on a test site in New Mex­i­co, and the sec­ond and third ones over Jap­a­nese ter­ri­to­ry. On 6 August 1945, the then-only ura­ni­um-based bomb was thrown over the Jap­a­nese city of Hiro­shi­ma. What hap­pened is well known and I will not re-tell it. More­over, this sto­ry deals with nucle­ar weap­ons but they are not the main char­ac­ters. Almost 20 years ago, an agree­ment was inked under which the US under­took to help dis­man­tle Rus­sian nucle­ar war­heads and con­vert the ura­ni­um from them into fuel for nucle­ar reac­tors. The rea­son is sim­ple - the pro­ce­dure is expen­sive, Rus­sia was weak and poor at the time, and in addi­tion, Amer­i­can tech­nol­o­gy back then was sig­nif­i­cant­ly ahead of the Rus­sian one. The amounts of con­vert­ed ura­ni­um are mas­sive - more than 500 ton­nes. Thus Rus­sian ura­ni­um turns into fuel for US nucle­ar pow­er plants. At present, this fuel is used to pro­duce 10% of the elec­tri­cal pow­er in the US. This is more than the ener­gy pro­duced from renew­a­ble sour­ces, such as sun, wind and water, there. This idyll, how­e­ver, is com­ing to its end. First, the US-Rus­sia agree­ment for Rus­sian war­heads con­ver­sion expires next year and Rus­sia is high­ly unlike­ly to extend it. More­over, Rus­sians now have good tech­nol­o­gy for that pur­pose and will prob­a­bly want to leave their ura­ni­um for them­selves. And sec­ond, if the agree­ment is extend­ed, the amounts of war­heads sub­ject to dis­man­tling will soon be exhaust­ed any­way as the agreed lim­its are reached. Glob­al mar­kets have already start­ed sus­pect­ing what is going to hap­pen with the expir­ing US-Rus­sia agree­mentth for war­head ura­ni­um. And not only with it. Indeed, ura­ni­um oxide pri­ces have gone wild sur­ging to almost $70/lb (1lb is 454 gr.) in Jan­u­ary this year from $40/lb in Sep­tem­ber 2011. Such a 70% ral­ly in ura­ni­um price over just 3-4- mons is not sus­tain­a­ble and even a cer­tain edg­ing down can be expect­ed. Still, the trend is clear - ura­ni­um dearth is loom­ing, as well as dearth of oth­er stra­te­gic nat­u­ral resour­ces. We have repeat­ed­ly stat­ed this but let us under­score it again. The glob­al cri­sis is most of all a resource cri­sis. It is finan­cial inso­far as it has became clear that the sys­tem allow­ing some peo­ple to print mon­ey while oth­ers work and bring them oil and oth­er goods will not last for good. The antic­i­pat­ed ura­ni­um short­age in the com­ing dec­ade is tru­ly strik­ing and is esti­mat­ed at 500m lb! One of the rea­sons is the fast devel­op­ing econ­o­mies of Chi­na and India, along with oth­er coun­tries like Bra­zil and Tur­key. It is where the bulk of the 147 reac­tors expect­ed to become oper­a­tion­al in these 10 years will be locat­ed. A major con­sum­er of ura­ni­um, the US cur­rent­ly has a demand for 60m lb a year but pro­du­ces only 3m lb. Still, this is the way things are at present. And what will hap­pen aft­er the US Nucle­ar Reg­u­la­to­ry Com­mis­sion reviews and poten­tial­ly approves new nucle­ar reac­tor pro­pos­als? They are 26 or so. And more are in the pipe­line. The sit­u­a­tion in India is even more dra­mat­ic - an increase in the share of nucle­ar ener­gy in elec­tric­i­ty pro­duc­tion is expect­ed from 2.5% at present to 25%. In oth­er words, India will need 10 times as much ura­ni­um as it does now if the far-reach­ing plan is put to prac­tice. Chi­na has more hum­ble aspi­ra­tions and is gear­ing to raise the share of nucle­ar facil­i­ties in elec­tric­i­ty pro­duc­tion only ...three times. And Chi­na, much like the US, does not have suf­fi­cient domes­tic sup­ply. We can con­tin­ue with sta­tis­tics, but things are evi­dent any­way. A war is around the cor­ner. In the best-case sce­nar­io, this will be a price war over ura­ni­um and in par­tic­u­lar ura­ni­um oxide. Pri­ces in the order of $100 or even $200/lb no longer seem far-fetched. Price lev­els of $500-$1000-$2000/lb have even been men­tioned and this will have its swift and dras­tic impli­ca­tions. Still, if a reac­tor costs $4bn, why not pay $1000/lb of ura­ni­um? Or else, the 4-bil­lion invest­ment will go down the drain. Anoth­er explod­ing glob­al mar­ket is the one for rare earth ele­ments with hard-to-pro­nounce Lat­in names such as Neo­dym­i­um, Ceri­um, Lan­tha­num, Gal­li­um, Gado­lin­i­um, Thu­li­um… If we have a look at Men­de­leev's peri­od­ic table, they are squeezed some­where at the bot­tom. But then, all the elec­tron­ics around us, all com­put­ers, fibre optics, all sat­el­lites and in gen­er­al every­thing under­ly­ing our high-tech civ­il­i­za­tion would be utter­ly impos­si­ble but for these exot­ic hard-to-extract ele­ments. The price of each of them has dou­bled and tri­pled in a year alone. And the pri­ces of some of them have soared six­fold in the same peri­od. Com­pared with rare earth ele­ments, gold and plat­i­num are like a tame kit­ten. It nat­u­ral­ly eats and swells but at a rate of only up to 40% a year. And what about the lith­i­um under­ly­ing the idea of elec­tric vehi­cles stag­ing a mass entrance into our dai­ly life and econ­o­my if and when oil is exhaust­ed? But it is in rare ele­ments where the secret of future skir­mish­es over resour­ces lies. Because across the world, they are real­ly hard to extract but Chi­na holds 97% of their glob­al pro­duc­tion! No mis­take, Chi­na pro­du­ces 33 times as much rare met­als as the rest of the world. This may as well be changed some day as cur­rent­ly huge efforts and mon­ey are put into look­ing for rare met­als around the globe. Hypo­thet­i­cal­ly, only a third of the res­erves is in Chi­na with the oth­er two thirds lying some­where else. Too bad it is any­one's guess where, although Cana­da, South Afri­ca and some Afri­can coun­tries are con­sid­ered prom­is­ing in this regard. Still, for the time being this is how things are: Chi­na has almost every­thing and the rest of the world hard­ly any­thing. Does any­one have any doubts why Chi­na has the ambi­tion to become the top dog? Of course, the world is by no means tread­ing water in one oth­er respect: sub­sti­tute tech­nol­o­gies are sought for that would not be so crit­i­cal­ly depend­ent on rare earth ele­ments, yet, more in the long rath­er than short run. By the way, why are we dis­cuss­ing ura­ni­um pri­ces along with all oth­er sorts of pri­ces in US dol­lars? The answer is clear: because the dol­lar is the glob­al reserve cur­ren­cy. The rea­son for this, though, is more com­pli­cat­ed. True, the US is the larg­est econ­o­my for the time being. But it is also among the mosft indebt­ed coun­tries in the world. And its debt is increas­ing­ly sur­ging. Still, this is not the most impor­tant. The most impor­tant thing is that the US has the most pow­er­ful, most mobile and one of the most effect­ive armies in the world. Lit­tle like­ly is it for some­one to reject the US dol­lar as a reserve cur­ren­cy while the 82nd Air­borne Divi­sion of the US Army, based at Fort Bragg North Car­o­li­na, is the holy ter­ror it is at the moment. And there is much more to it than the 82nd Divi­sion. So the time bomb of ura­ni­um and rare earth ele­ments dearth is tick­ing. And lit­tle idea do we have of the time it is set for. Or wheth­er, when it final­ly goes off, some­body might remem­ber the first mas­sive appli­ca­tion of ura­ni­um, which turned thou­sands into ash­es some 67 years ago. And be temp­ted to use it again. For 67 years now, we have been show­ing rea­son and sur­viv­ing. Let us hope fierce defi­cien­cy of nat­u­ral resour­ces, food and water that is loom­ing will not take it away from us.

1. <http://dictionary.reference.com/browse/negate>, <http://www.merriam-webster.com/dictionary/negate>, <http://www.thefreedictionary.com/negate>, <http://www.vocabulary.com/dictionary/negate>, <http://www.oxforddictionaries.com/definition/english/negate> [↑](#footnote-ref-1)
2. *Dictionary.com – maintain as true, Merriam Webster – to say that something is true, Vocabulary.com – to affirm something is to confirm that it is true, Oxford dictionaries – accept the validity of, Thefreedictionary – assert to be true* [↑](#footnote-ref-2)
3. <https://www.lexico.com/en/definition/just> //Lex VM [↑](#footnote-ref-3)
4. <https://www.google.com/search?q=of+definition&rlz=1C1CHBF_enUS877US877&oq=of+definition&aqs=chrome.0.69i59j69i61l3.1473j0j7&sourceid=chrome&ie=UTF-8> //Lex VM [↑](#footnote-ref-4)
5. <https://www.lexico.com/en/definition/recognize> //Lex VM [↑](#footnote-ref-5)
6. <https://www.google.com/search?q=to+definition&rlz=1C1CHBF_enUS877US877&oq=to+definition&aqs=chrome..69i57j69i60l3.1415j0j7&sourceid=chrome&ie=UTF-8> //Lex VM [↑](#footnote-ref-6)
7. <https://www.merriam-webster.com/dictionary/right> //Lex VM

   [↑](#footnote-ref-7)
8. <https://www.merriam-webster.com/dictionary/strike> //Lex VM [↑](#footnote-ref-8)
9. <https://www.merriam-webster.com/dictionary/worker> //Lex VM [↑](#footnote-ref-9)