# R2 - 1NC – Westwood

## 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 Egtypt

#### 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: If the affirmative defends a consequentialist framework, they must explicitly delineate which theory of the good they defend in the form of a text in the 1ac.

#### Each nuance of the ethic entails different obligations and would exclude different offense – there are 7 different versions.

**Mastin,** [Luke Mastin, Consequentialism, The basics of philosophy <http://www.philosophybasics.com/branch_consequentialism.html>]

Some **consequentialist theories include**: Utilitarianism, which holds that an action is right if it leads to the most happiness for the greatest number of people ("happiness" here is defined as the maximization of pleasure and the minimization of pain). **Hedonism**, **which** is the philosophy **[holds] that pleasure** **is** the **most important** pursuit of mankind, **and** that **individuals** **should** strive to **maximise** **their own total** **pleasure** (net of any pain or suffering). **Epicureanism** is a more moderate approach (which still seeks to maximize happiness, but which **defines happiness** more **as a** **state of tranquillity** than pleasure). **Egoism, which holds that an action is right if it maximizes good for the self.** Thus, Egoism may license actions which are good for an individual even if detrimental to the general welfare. **Asceticism**, in some ways, **the opposite of Egoism in that it describes a life characterized by abstinence from egoistic pleasures** especially **to achieve a spiritual goal. Altruism**, which **prescribes that an individual take actions that have the best consequences for everyone except for himself**, according to Auguste Comte's dictum, "Live for others". Thus, individuals have a moral obligation to help, serve or benefit others, if necessary at the sacrifice of self-interest. **Rule Consequentialism**, which is a theory (sometimes seen as an attempt to reconcile Consequentialism and Deontology), **[holds] that moral behaviour involves following certain rules**, but that those rules should be **chosen** based **on** the **consequences that** the selection of **those rules have**. Some theorists holds that a certain set of minimal rules are necessary to ensure appropriate actions, while some hold that the rules are not absolute and may be violated if strict adherence to the rule would lead to much more undesirable consequences. **Negative Consequentialism**, which **focuses on minimizing bad consequences rather than promoting good consequences**. This may actually require active intervention (to prevent harm from being done), or may only require passive avoidance of bad outcomes.

#### Violation: They don’t and maximizing expected well-being doesn’t cut it.

**Crisp**, Roger, "Well-Being", *The Stanford Encyclopedia of Philosophy*(Fall **2017** Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/fall2017/entries/well-being/>.

Well-being is most commonly used in philosophy to describe what is non-instrumentally or ultimately good *for* a person. **The question of what well-being consists in is of independent interest**, but it is of great importance in moral philosophy, especially **in the case of utilitarianism**, according to which the only moral requirement is that well-being be maximized. Significant challenges to the very notion have been mounted, in particular by G.E. Moore and T.M. Scanlon. **It has become standard to distinguish theories of well-being as either hedonist theories, desire theories, or objective list theories**. According to the view known as welfarism, well-being is the only value. Also important in ethics is the question of how a person’s moral character and actions relate to their well-being.

#### Standards:

#### 1. Shiftiness – They can shift out of my turns based on whatever theory of the good they operate under due to the nature of a vague standard. Especially true because the warrants for their standard could justify different versions of consequentialism as coming first and I wouldn’t know until the 1ar which gives them access to multiple contingent standards.

#### 2. Strat – I lose 6 minutes of time during the AC to generate a strategy because I don't know what turns or strategy, I can go for during the 1N absent which proves CX doesn’t check since it would occur after the skew.

#### 3. Resolvability – Makes the round irresolvable since we can’t weigh different mechanisms for the good – Benatar would probably link harder under a hedonistic conception of util – weighing ground is key since it ensures we can compare arguments that clash to access the ballot.

## 3

#### 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.

## 4

#### Interpretation: The affirmative must have a carded solvency advocate in the 1AC.

#### Violation -

#### Standards:

#### 1. predictability - no way for the neg to predict the advocacy because it’s not in the lit – this decks DA and CP ground - outweighs because ground is the key determinant of engagement.

#### 2. limits – no solvency advocate allows infinite possible affs – also justifies breaking affs that are at the edges of the topic with no advocate.

#### 3. shiftiness - no way to guarantee the DAs and CPs we read link or solve because they can re-interpret the plan in the 1ar – creates a 7-6 skew that prevents new 2nr ev to prove normal means from checking.

## 5

#### The meta-ethic is constructivism, or the idea that there is no a priori truth independent of human conceptual schemes.

#### Prefer:

#### 1 - Rule-following paradox—innate moral rules can be interpreted in an infinite number of ways, ethics and religion proves. That means they can’t guide action since A] they aren’t binding and B] they lead to contradictory interpertations.

#### 2 - Epistemology—experience frames knowledge – the reason why a tree is a tree and not a rock is because we experience what a tree is and relate the word to the object.

#### Next, every time someone acts, they have a corresponding goal—that means action necessitates imposing meaning on the world. The state of nature necessitates infinite violence between conflicting world views:

#### 1 - Arbitrariness—under the state of nature, people will impose their own goals on each other with no restrictions which justifies infinite violations of rights and makes meaning creation impossible.

#### 2 - Resource Wars—a finite amount of material resources creates conflict between different people who want it which means we control the root cause of the aff.

#### There is no objective solution to this conflict because truth is relative. Instead, conflict requires the creation of the sovereign, to resolve disputes. In exchange for their safety, subjects agree to give up their claims to meaning to the sovereign.

Parrish 04 [Parrish, Rick, [Rick Parrish teaches at Loyola University New Orleans. His current research is focused on the play of violence and respect within justice.] "Derrida’S Economy Of Violence In Hobbes’ Social Contract" Theory &amp; Event, Vol. 7 No. 4, 2005, 2005, http://muse.jhu.edu/article/244119#back, DOA:6-30-2018 // WWBW]

All of the foregoing points to the conclusion that in the commonwealth **the sovereign's** first and **most fundamental job is to be the ultimate definer**. Several other commentators have also reached this conclusion. By way of elaborating upon the importance of the moderation of individuality in Hobbes' theory of government, Richard Flathman claims that peace "is possible only if the ambiguity and disagreement that pervade general thinking and acting are eliminated by the stipulations of a sovereign."57 Pursuant to debunking the perennial misinterpretation of Hobbes' mention of people as wolves, Paul Johnson argues that "**one of the primary functions of the sovereign** is to provide the necessary unity of meaning and reference for the primary terms in which men try to conduct their social lives."58 "The whole raison d'être of sovereign helmsmanship **lies** squarely **in the chronic defusing of interpretive clashes**,"59 **without which** **humans would** "fly off in all directions"60 and **fall inevitably into the violence of the natural condition.** 26. It is not surprising that so many noted students of Hobbes have reached this conclusion, given how prominently he himself makes this claim. According to Hobbes, "in the state of nature, where every man is his own judge, and differeth from others concerning the names and appellations of things, and from those differences arise quarrels and breach of peace, it was necessary there should be a common measure of all things, that might fall in controversy."61 The main categories of the sovereign's tasks are "to make and abrogate laws, to determine war and peace, [and] to know and judge of all controversies,"62 but each of these duties is a subspecies of its ultimate duty to be the sole and ultimate definer in matters of public importance. **It is only through the sovereign's effective continued accomplishment of this duty that the people of a commonwealth avoid the definitional problems that typify the state of nature.** 27. Judging controversies, which Hobbes lists as the third main task of the sovereign, is the duty most obviously about being the ultimate definer. In fact, Hobbes declares it a law of nature that "in every controversy, the parties thereto ought mutually to agree upon an arbitrator, whom they both trust; and mutually to covenant to stand to the sentence he shall give therein."63 As I repeatedly alluded to above, this agreement to abide by the decision of a third party arbitrator, **a sovereign** in the commonwealth, **is necessary because of the fundamentally perspectival and relative nature of persons' imputations of meaning and value into the situations they construct.** Hobbes understands this problem, as evidenced by his claim that "seeing right reason is not existent, the reason of some man or men must supply the place thereof; and that man or men, is he or they, that have the sovereign power"64 to dictate meanings that will be followed by all. The sovereign is even protected from potential democratic impulses, by which a 'true' meaning would be that agreed upon by the greatest number of people. Because "no one man's reason, nor the reason of any one number of men, makes the certainty," they will still "come to blows . . . for want of a right reason constituted by nature"65 unless both the majority and the minority agree to abide by the meanings promulgated by the sovereign. 28. These meanings are usually created and promulgated by the sovereign in the form of laws, another of the tasks with which Hobbes charges it. In one of his clearest explanations of the law, Hobbes writes that "it belongs to the same chief power to make some common rules for all men, and to declare them publicly, by which every man may know what may be called his, what another's, what just, what unjust, what ho nest, what dishonest, what good, what evil; that is summarily, what is to be done, what to be avoided in our common course of life."66 The civil law is the set of the sovereign's definitions for ownership, justice, good, evil, and all other concepts that are important for the maintenance of peace in the commonwealth. When everyone follows the law (that is, when everyone follows the sovereign's definitions) there are far fewer conflicts among persons because everyone appeals to the same meanings. This means that people know what meanings others will use to evaluate the actions of themselves and others, so the state of nature's security dilemmas and attempts to force one's own meanings upon others are overcome. 29. **There is to be no question of the truth or falsity of the sovereign's definitions because "there are no authentical doctrines concerning right and wrong**, good and evil, **besides the constituted laws in each realm and government."**67 In fact, Hobbes specifically says that one of the "diseases of a commonwealth" is that "every private man is judge of good and evil actions."68 **Only when individual persons agree to follow the meanings promulgated by the sovereign, which of course includes refraining from trying to impose their own meanings on others, can persons live together in peace -- when they take it upon themselves to impose meaning on situations of public import, they descend into violence again.**

#### Thus, the standard is consistency with the will of the sovereign.

#### Now Negate -

#### 1 - Inherency proves the sovereign doesn’t want to grant the unconditional right to strike. Otherwise negate on presumption if theres no inherency.

#### 2 - Unconditional striking violates the NLRB.

NLRB National Labor Relations Board. “The Right to Strike.” *The Right to Strike | National Labor Relations Board*, www.nlrb.gov/strikes. SJEP

Strikes unlawful because of timing—Effect of no-strike contract. A strike that violates a no-strike provision of a contract is not protected by the Act, and the striking employees can be discharged or otherwise disciplined, unless the strike is called to protest certain kinds of unfair labor practices committed by the employer. It should be noted that not all refusals to work are considered strikes and thus violations of no-strike provisions. A walkout because of conditions abnormally dangerous to health, such as a defective ventilation system in a spray-painting shop, has been held not to violate a no-strike provision. Same—Strikes at end of contract period.Section 8(d) provides that when either party desires to terminate or change an existing contract, it must comply with certain conditions. If these requirements are not met, a strike to terminate or change a contract is unlawful and participating strikers lose their status as employees of the employer engaged in the labor dispute. If the strike was caused by the unfair labor practice of the employer, however, the strikers are classified as unfair labor practice strikers and their status is not affected by failure to follow the required procedure.

#### 3 - A worker has the ability to choose their employer and thus their contract. Therefore, there is no reason a worker can strike against a contract they have agreed to previously.

## 6

#### 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 - SPARK

#### 1 – No Famine

#### A - No food scarcity.

**Jalsevac 04** (Paul, Life site news a division of Interim Publishing, “The Inherent Racism of Population Control”, http://www.lifesite.net/waronfamily/Population\_Control/Inherentracism.pdf)

The pattern continues today. Economist Dennis Avery explained in 1995 that, food production was more than keeping pace with population growth since the world had, “more than doubled world food output in the past 30 years. We have raised food supplies per person by 25 percent in the populous Third World.”4 The United Nations Food and Agriculture Organization (UNFAO) also dispelled fears of shortages in the food supply when, in preparation for the World Food Summit in Rome in November of 1995 it reported that, “Globally food supplies have more than doubled in the last 40 years…at a global level, there is probably no obstacle to food production rising to meet demand.”5 The UNFAO also later estimated that, simply with the present available technologies fully employed, the world could feed 30 to 35 billion people, i.e. roughly six times the present world population.6 It also reported that the number of people considered malnourished has declined from 36 percent in 1961-1970 to 20 percent in 1988-90 and later proclaimed that “earlier fears of chronic food shortages over much of the world proved unfounded.”7 The World Bank joined in to predict in 1993 that the improvement in the world food supply would continue, while pointing out that in developing countries grain production has grown at a faster rate than population since 1985. Grain production has slowed in the United States, but that is because stocks have grown so large that additional production could not be stored.8 A further wealth of evidence is available to remove any concerns about resource shortage in the modern world.

#### B - Zero risk of starvation.

**Reichman 95** - Former senior editor at the Cato Institute (Sheldon “The International Population Stabilization and Reproductive Health Act (S. 1029)” <http://www.cato.org/testimony/ct-ps720.html>)

Food is abundant. Since 1948, according to the UN Food and Agriculture Organization and the U.S. Department of Agriculture, annual world food production has outpaced the increase in population. Today, per capita production and per-acre yields are at all-time highs. Prices of agricultural products have been falling for over 100 years. The average inflation-adjusted price of those products, indexed to wages, fell by more than 74 percent between 1950 and 1990. While Lester Brown of the Worldwatch Institute and the noted butterfly expert Paul Ehrlich predict higher food prices and increasing scarcity, food is becoming cheaper and more plentiful. That good news is due largely to technological advances (the "green revolution") that have provided better seeds, fertilizers, pesticides, and methods of farming.

#### 2 – No Nuclear Winter

#### A - Rigorous climate simulations prove that hydrophilic black carbon would cause to atmospheric precipitation – results in a rainout effect that quickly reverses nuclear cooling.

Reisner et al. 18 (Jon Reisner – Climate and atmospheric scientist at the Los Alamos National Laboratory. Gennaro D’Angelo – Climate scientist at the Los Alamos National Laboratory, Research scientist at the SETI institute, Associate specialist at the University of California, Santa Cruz, NASA Postdoctoral Fellow at the NASA Ames Research Center, UKAFF Fellow at the University of Exeter. Eunmo Koo - Scientist at Applied Terrestrial, Energy, and Atmospheric Modeling (ATEAM) Team, in Computational Earth Science Group (EES-16) in Earth and Environmental Sciences Division and Co-Lead of Parallel Computing Summer Research Internship (PCSRI) program at the Los Alamos National Laboratory, former Staff research associate at UC Berkeley. Wesley Even - Computational scientist in the Computational Physics and Methods Group at Los Alamos National Laboratory. Matthew Hecht – Atmospheric scientist at the Los Alamos National Laboratory. Elizabeth Hunke - Lead developer for the Los Alamos Sea Ice Model (CICE) at the Los Alamos National Laboratory responsible for development and incorporation of new parameterizations, model testing and validation, computational performance, documentation, and consultation with external model users on all aspects of sea ice modeling, including interfacing with global climate and earth system models. Darin Comeau – Climate scientist at the Los Alamos National Laboratory. Randy Bos - Project leader at the Los Alamos National Laboratory, former Weapons Effects program manager at Tech-Source. James Cooley – Computational scientist at the Los Alamos National Laboratory specializing in weapons physics, emergency response, and computational physics. <MKIM> “Climate impact of a regional nuclear weapons exchange:An improved assessment based on detailed source calculations”. 3/16/18. DOA: 7/13/19. <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017JD027331>)

\*BC = Black Carbon

The no-rubble simulation produces a significantly more intense fire, with more fire spread, and consequently a significantly stronger plume with larger amounts of BC reaching into the upper atmosphere than the simulation with rubble, illustrated in Figure 5. While the no-rubble simulation **represents the worst-case scenario** involving vigorous fire activity, **only a relatively small amount of carbon makes its way into the stratosphere** during the course of the simulation. But while small compared to the surface BC mass, stratospheric BC amounts from the current simulations are significantly higher than what would be expected from burning vegetation such as trees (Heilman et al., 2014), e.g., the higher energy density of the building fuels and the initial fluence from the weapon produce an intense response within HIGRAD with initial updrafts of order 100 m/s in the lower troposphere. Or, in comparison to a mass fire, wildfires will burn only a small amount of fuel in the corresponding time period (roughly 10 minutes) that a nuclear weapon fluence can effectively ignite a large area of fuel producing an impressive atmospheric response. Figure 6 shows vertical profiles of BC multiplied by 100 (number of cities involved in the exchange) from the two simulations. The total amount of BC produced is in line with previous estimates (about 3.69 Tg from no-rubble simulation); however, the majority of BC resides **below the stratosphere** (3.46 Tg below 12 km) and can be **readily impacted by scavenging from precipitation** either via pyro-cumulonimbus produced by the fire itself (not modeled) or other synoptic weather systems. While the impact on climate of these more realistic profiles will be explored in the next section, it should be mentioned that **these estimates are** still **at the high end**, considering the inherent simplifications in the combustion model that lead to **overestimating BC production**. 3.3 Climate Results Long-term climatic effects critically depend on the initial injection height of the soot, with larger quantities reaching the upper troposphere/lower stratosphere inducing a greater cooling impact because of longer residence times (Robock et al., 2007a). Absorption of solar radiation by the BC aerosol and its subsequent radiative cooling tends to heat the surrounding air, driving an initial upward diffusion of the soot plumes, an effect that depends on the initial aerosol concentrations. **Mixing and sedimentation** tend to **reduce this process**, and low altitude emissions are also significantly impacted by precipitation if aging of the BC aerosol occurs on sufficiently rapid timescales. But once at stratospheric altitudes, aerosol dilution via coagulation is hindered by low particulate concentrations (e.g., Robock et al., 2007a) and lofting to much higher altitudes is inhibited by gravitational settling in the low-density air (Stenke et al., 2013), resulting in more stable BC concentrations over long times. Of the initial BC mass released in the atmosphere, most of which is emitted below 9 km, **70% rains out within the first month** and 78%, or about 2.9 Tg, is removed within the first two months (Figure 7, solid line), with the remainder (about 0.8 Tg, dashed line) being transported above about 12 km (200 hPa) within the first week. This outcome differs from the findings of, e.g., Stenke et al. (2013, their high BC-load cases) and Mills et al. (2014), who found that most of the BC mass (between 60 and 70%) is lifted in the stratosphere within the first couple of weeks. This can also be seen in Figure 8 (red lines) and in Figure 9, which include results from our calculation with the initial BC distribution from Mills et al. (2014). In that case, only 30% of the initial BC mass rains out in the troposphere during the first two weeks after the exchange, with the remainder rising to the stratosphere. In the study of Mills et al. (2008) this percentage is somewhat smaller, about 20%, and smaller still in the experiments of Robock et al. (2007a) in which the soot is initially emitted in the upper troposphere or higher. In Figure 7, the e-folding timescale for the removal of tropospheric soot, here interpreted as the time required for an initial drop of a factor e, is about one week. This result compares favorably with the “LT” experiment of Robock et al. (2007a), considering 5 Tg of BC released in the lower troposphere, in which 50% of the aerosols are removed within two weeks. By contrast, the initial e-folding timescale for the removal of stratospheric soot in Figure 8 is about 4.2 years (blue solid line), compared to about 8.4 years for the calculation using Mills et al. (2014) initial BC emission (red solid line). The removal timescale from our forced ensemble simulations is close to those obtained by Mills et al. (2008) in their 1 Tg experiment, by Robock et al. (2007a) in their experiment “UT 1 Tg”, and © 2018 American Geophysical Union. All rights reserved. by Stenke et al. (2013) in their experiment “Exp1”, in all of which 1 Tg of soot was emitted in the atmosphere in the aftermath of the exchange. Notably, the e-folding timescale for the decline of the BC mass in Figure 8 (blue solid line) is also close to the value of about 4 years quoted by Pausata et al. (2016) for their long-term “intermediate” scenario. In that scenario, which is also based on 5 Tg of soot initially distributed as in Mills et al. (2014), the factor-of2 shorter residence time of the aerosols is caused by particle growth via coagulation of BC with organic carbon. Figure 9 shows the BC mass-mixing ratio, horizontally averaged over the globe, as a function of atmospheric pressure (height) and time. The BC distributions used in our simulations imply that the upward transport of particles is substantially less efficient compared to the case in which 5 Tg of BC is directly injected into the upper troposphere. The semiannual cycle of lofting and sinking of the aerosols is associated with atmospheric heating and cooling during the solstice in each hemisphere (Robock et al., 2007a). During the first year, the oscillation amplitude in our forced ensemble simulations is particularly large during the summer solstice, compared to that during the winter solstice (see bottom panel of Figure 9), because of the higher soot concentrations in the Northern Hemisphere, as can be seen in Figure 11 (see also left panel of Figure 12). Comparing the top and bottom panels of Figure 9, the BC reaches the highest altitudes during the first year in both cases, but the concentrations at 0.1 hPa in the top panel can be 200 times as large. Qualitatively, the difference can be understood in terms of the air temperature increase caused by BC radiation emission, which is several tens of kelvin degrees in the simulations of Robock et al. (2007a, see their Figure 4), Mills et al. (2008, see their Figure 5), Stenke et al. (2013, see high-load cases in their Figure 4), Mills et al. (2014, see their Figure 7), and Pausata et al. (2016, see one-day emission cases in their Figure 1), due to high BC concentrations, but it amounts to only about 10 K in our forced ensemble simulations, as illustrated in Figure 10. Results similar to those presented in Figure 10 were obtained from the experiment “Exp1” performed by Stenke et al. (2013, see their Figure 4). **In that scenario as well, somewhat less that 1 Tg of BC remained in the atmosphere after the initial rainout**. As mentioned before, the BC aerosol that remains in the atmosphere, lifted to stratospheric heights by the rising soot plumes, undergoes sedimentation over a timescale of several years (Figures 8 and 9). This mass represents the effective amount of BC that can force climatic changes over multi-year timescales. In the forced ensemble simulations, it is about 0.8 Tg after the initial rainout, whereas it is about 3.4 Tg in the simulation with an initial soot distribution as in Mills et al. (2014). Our more realistic source simulation involves the worstcase assumption of no-rubble (along with other assumptions) and hence serves as an upper bound for the impact on climate. As mentioned above and further discussed below, our scenario induces perturbations on the climate system similar to those found in previous studies in which the climatic response was driven by roughly 1 Tg of soot rising to stratospheric heights following the exchange. Figure 11 illustrates the vertically integrated mass-mixing ratio of BC over the globe, at various times after the exchange for the simulation using the initial BC distribution of Mills et al. (2014, upper panels) and as an average from the forced ensemble members (lower panels). All simulations predict enhanced concentrations at high latitudes during the first year after the exchange. In the cases shown in the top panels, however, these high concentrations persist for several years (see also Figure 1 of Mills et al., 2014), whereas the forced ensemble simulations indicate that the BC concentration starts to decline after the first year. In fact, in the simulation represented in the top panels, mass-mixing ratios larger than about 1 kg of BC © 2018 American Geophysical Union. All rights reserved. per Tg of air persist for well over 10 years after the exchange, whereas they only last for 3 years in our forced simulations (compare top and middle panels of Figure 9). After the first year, values drop below 3 kg BC/Tg air, whereas it takes about 8 years to reach these values in the simulation in the top panels (see also Robock et al., 2007a). Over crop-producing, midlatitude regions in the Northern Hemisphere, the BC loading is reduced from more than 0.8 kg BC/Tg air in the simulation in the top panels to 0.2-0.4 kg BC/Tg air in our forced simulations (see middle and right panels). The more rapid clearing of the atmosphere in the forced ensemble is also signaled by the soot optical depth in the visible radiation spectrum, which drops below values of 0.03 toward the second half of the first year at mid latitudes in the Northern Hemisphere, and everywhere on the globe after about 2.5 years (without never attaining this value in the Southern Hemisphere). In contrast, the soot optical depth in the calculation shown in the top panels of Figure 11 becomes smaller than 0.03 everywhere only after about 10 years. The two cases show a similar tendency, in that the BC optical depth is typically lower between latitudes 30º S-30º N than it is at other latitudes. This behavior is associated to the persistence of stratospheric soot toward high-latitudes and the Arctic/Antarctic regions, as illustrated by the zonally-averaged, column-integrated mass-mixing ratio of the BC in Figure 12 for both the forced ensemble simulations (left panel) and the simulation with an initial 5 Tg BC emission in the upper troposphere (right panel). The spread in the globally averaged (near) surface temperature of the atmosphere, from the control (left panel) and forced (right panel) ensembles, is displayed in Figure 13. For each month, the plots show the largest variations (i.e., maximum and minimum values), within each ensemble of values obtained for that month, relative to the mean value of that month. The plot also shows yearly-averaged data (thinner lines). The spread is comparable in the control and forced ensembles, with average values calculated over the 33-years run length of 0.4-0.5 K. This spread is also similar to the internal variability of the globally averaged surface temperature quoted for the NCAR Large Ensemble Community Project (Kay et al., 2015). These results imply that surface air temperature differences, between forced and control simulations, which lie within the spread may not be distinguished from effects due to internal variability of the two simulation ensembles. Figure 14 shows the difference in the globally averaged surface temperature of the atmosphere (top panel), net solar radiation flux at surface (middle panel), and precipitation rate (bottom panel), computed as the (forced minus control) difference in ensemble mean values. The sum of standard deviations from each ensemble is shaded. Differences are qualitatively significant over the first few years, when the anomalies lie near or outside the total standard deviation. Inside the shaded region, differences may not be distinguished from those arising from the internal variability of one or both ensembles. The surface solar flux (middle panel) is the quantity that appears most affected by the BC emission, with qualitatively significant differences persisting for about 5 years. The precipitation rate (bottom panel) is instead affected only at the very beginning of the simulations. The red lines in all panels show the results from the simulation applying the initial BC distribution of Mills et al. (2014), where the period of significant impact is much longer owing to the higher altitude of the initial soot distribution that results in longer residence times of the BC aerosol in the atmosphere. When yearly averages of the same quantities are performed over the IndiaPakistan region, the differences in ensemble mean values lie within the total standard deviations of the two ensembles. The results in Figure 14 can also be compared to the outcomes of other previous studies. In their experiment “UT 1 Tg”, Robock et al. (2007a) found that, when only 1 Tg of soot © 2018 American Geophysical Union. All rights reserved. remains in the atmosphere after the initial rainout, temperature and precipitation anomalies are about 20% of those obtained from their standard 5 Tg BC emission case. Therefore, the largest differences they observed, during the first few years after the exchange, were about - 0.3 K and -0.06 mm/day, respectively, comparable to the anomalies in the top and bottom panels of Figure 14. Their standard 5 Tg emission case resulted in a solar radiation flux anomaly at surface of -12 W/m2 after the second year (see their Figure 3), between 5 and 6 time as large as the corresponding anomalies from our ensembles shown in the middle panel. In their experiment “Exp1”, Stenke et al. (2013) reported global mean surface temperature anomalies not exceeding about 0.3 K in magnitude and precipitation anomalies hovering around -0.07 mm/day during the first few years, again consistent with the results of Figure 14. In a recent study, Pausata et al. (2016) considered the effects of an admixture of BC and organic carbon aerosols, both of which would be emitted in the atmosphere in the aftermath of a nuclear exchange. In particular, they concentrated on the effects of coagulation of these aerosol species and examined their climatic impacts. The initial BC distribution was as in Mills et al. (2014), although the soot burden was released in the atmosphere over time periods of various lengths. Most relevant to our and other previous work are their one-day emission scenarios. They found that, during the first year, the largest values of the atmospheric surface temperature anomalies ranged between about -0.5 and -1.3 K, those of the sea surface temperature anomalies ranged between -0.2 and -0.55 K, and those of the precipitation anomalies varied between -0.15 and -0.2 mm/day. All these ranges are compatible with our results shown in Figure 14 as red lines and with those of Mills et al. (2014, see their Figures 3 and 6). As already mentioned in Section 2.3, the net solar flux anomalies at surface are also consistent. This overall agreement suggests that the **inclusion of organic carbon aerosols, and** ensuing **coagulation** with BC, **should not dramatically alter the climatic effects** resulting from our forced ensemble simulations. Moreover, aerosol growth would likely **shorten the residence time of the BC particulate in the atmosphere** (Pausata et al., 2016), possibly **reducing the duration of these effects.**

#### **B - No credible scenario for extinction—outdated fringe science and well-meaning threat inflation.**

Scouras 19 (James Scouras, Johns Hopkins University Applied Physics Laboratory, formerly served on the congressionally established Comission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack, “Nuclear War as a Global Catastrophic Risk”, Cambridge Core, 9-2-2019, available at https://www.cambridge.org/core/journals/journal-of-benefit-cost-analysis/article/nuclear-war-as-a-global-catastrophic-risk/EC726528F3A71ED5ED26307677960962, accessed 12-1-2019, HKR-cjh)

It might be thought that we know enough about the risk of nuclear war to appropriately manage that risk. The consequences of unconstrained nuclear attacks, and the counterattacks that would occur until the major nuclear powers exhaust their arsenals, would far exceed any cataclysm humanity has suffered in all of recorded history. The likelihood of such a war must, therefore, be reduced as much as possible. But this rather simplistic logic raises many questions and does not withstand close scrutiny. Regarding consequences, does unconstrained nuclear war pose an existential risk to humanity? The consequences of existential risks are truly incalculable, including the lives not only of all human beings currently living but also of all those yet to come; involving not only Homo sapiens but all species that may descend from it. At the opposite end of the spectrum of consequences lies the domain of “limited” nuclear wars. Are these also properly considered global catastrophes? After all, while the only nuclear war that has ever occurred devastated Hiroshima and Nagasaki, it was also instrumental in bringing about the end of the Pacific War, thereby saving lives that would have been lost in the planned invasion of Japan. Indeed, some scholars similarly argue that many lives have been saved over the nearly threefourths of a century since the advent of nuclear weapons because those weapons have prevented the large conventional wars that otherwise would likely have occurred between the major powers. This is perhaps the most significant consequence of the attacks that devastated the two Japanese cities. Regarding likelihood, how do we know what the likelihood of nuclear war is and the degree to which our national policies affect that likelihood, for better or worse? How much confidence should we place in any assessment of likelihood? What levels of likelihood for the broad spectrum of possible consequences pose unacceptable levels of risk? Even a very low (nondecreasing) annual likelihood of the risk of nuclear war would result in near certainty of catastrophe over the course of enough years. Most fundamentally and counterintuitively, are we really sure we want to reduce the risk of nuclear war? The successful operation of deterrence, which has been credited – perhaps too generously – with preventing nuclear war during the Cold War and its aftermath, depends on the risk that any nuclear use might escalate to a nuclear holocaust. Many proposals for reducing risk focus on reducing nuclear weapon arsenals and, therefore, the possible consequences of the most extreme nuclear war. Yet, if we reduce the consequences of nuclear war, might we also inadvertently increase its likelihood? It’s not at all clear that would be a desirable trade-off. This is all to argue that the simplistic logic described above is inadequate, even dangerous. A more nuanced understanding of the risk of nuclear war is imperative. This paper thus attempts to establish a basis for more rigorously addressing the risk of nuclear war. Rather than trying to assess the risk, a daunting objective, its more modest goals include increasing the awareness of the complexities involved in addressing this topic and evaluating alternative measures proposed for managing nuclear risk. I begin with a clarification of why nuclear war is a global catastrophic risk but not an existential risk. Turning to the issue of risk assessment, I then present a variety of assessments by academics and statesmen of the likelihood component of the risk of nuclear war, followed by an overview of what we do and do not know about the consequences of nuclear war, emphasizing uncertainty in both factors. Then, I discuss the difficulties in determining the effects of risk mitigation policies, focusing on nuclear arms reduction. Finally, I address the question of whether nuclear weapons have indeed saved lives. I conclude with recommendations for national security policy and multidisciplinary research. 2 Why is nuclear war a global catastrophic risk? One needs to only view the pictures of Hiroshima and Nagasaki shown in figure 1 and imagine such devastation visited on thousands of cities across warring nations in both hemispheres to recognize that nuclear war is truly a global catastrophic risk. Moreover, many of today’s nuclear weapons are an order of magnitude more destructive than Little Boy and Fat Man, and there are many other significant consequences – prompt radiation, fallout, etc. – not visible in such photographs. Yet, it is also true that not all nuclear wars would be so catastrophic; some, perhaps involving electromagnetic pulse (EMP) attacks 2 Many mistakenly believe that the congressionally established Commission to Assess the Threat to the United States from Electromagnetic Pulse (EMP) Attack concluded that an EMP attack would, indeed, be catastrophic to electronic systems and consequently to people and societies that vitally depend on those systems. However, the conclusion of the commission, on whose staff I served, was only that such a catastrophe could, not would, result from an EMP attack. Its executive report states, for example, that “the damage level could be sufficient to be catastrophic to the Nation.” See www.empcommision.org for publicly available reports from the EMP Commission. See also Frankel et al., (2015).2 using only a few high-altitude detonations or demonstration strikes of various kinds, could result in few casualties. Others, such as a war between Israel and one of its potential future nuclear neighbors, might be regionally devastating but have limited global impact, at least if we limit our consideration to direct and immediate physical consequences. Nevertheless, smaller nuclear wars need to be included in any analysis of nuclear war as a global catastrophic risk because they increase the likelihood of larger nuclear wars. This is precisely why the nuclear taboo is so precious and crossing the nuclear threshold into uncharted territory is so dangerous (Schelling, 2005; see also Tannenwald, 2007). While it is clear that nuclear war is a global catastrophic risk, it is also clear that it is not an existential risk. Yet over the course of the nuclear age, a series of mechanisms have been proposed that, it has been erroneously argued, could lead to human extinction. The first concern3 arose among physicists on the Manhattan Project during a 1942 seminar at Berkeley some three years before the first test of an atomic weapon. Chaired by Robert Oppenheimer, it was attended by Edward Teller, Hans Bethe, Emil Konopinski, and other theoretical physicists (Rhodes, 1995). They considered the possibility that detonation of an atomic bomb could ignite a self-sustaining nitrogen fusion reaction that might propagate through earth’s atmosphere, thereby extinguishing all air-breathing life on earth. Konopinski, Cloyd Margin, and Teller eventually published the calculations that led to the conclusion that the nitrogen-nitrogen reaction was virtually impossible from atomic bomb explosions – calculations that had previously been used to justify going forward with Trinity, the first atomic bomb test (Konopinski et al., 1946). Of course, the Trinity test was conducted, as well as over 1000 subsequent atomic and thermonuclear tests, and we are fortunately still here. After the bomb was used, extinction fear focused on invisible and deadly fallout, unanticipated as a significant consequence of the bombings of Japan that would spread by global air currents to poison the entire planet. Public dread was reinforced by the depressing, but influential, 1957 novel On the Beach by Nevil Shute (1957) and the subsequent 1959 movie version (Kramer, 1959). The story describes survivors in Melbourne, Australia, one of a few remaining human outposts in the Southern Hemisphere, as fallout clouds approached to bring the final blow to humanity. In the 1970s, after fallout was better understood to be limited in space, time, and magnitude, depletion of the ozone layer, which would cause increased ultraviolet radiation to fry all humans who dared to venture outside, became the extinction mechanism of concern. Again, one popular book, The Fate of the Earth by Jonathan Schell (1982), which described the nuclear destruction of the ozone layer leaving the earth “a republic of insects and grass,” promoted this fear. Schell did at times try to cover all bases, however: “To say that human extinction is a certainty would, of course, be a misrepresentation – just as it would be a misrepresentation to say that extinction can be ruled out” (Schell, 1982). Finally, the current mechanism of concern for extinction is nuclear winter, the phenomenon by which dust and soot created primarily by the burning of cities would rise to the stratosphere and attenuate sunlight such that surface temperatures would decline dramatically, agriculture would fail, and humans and other animals would perish from famine. The public first learned of the possibility of nuclear winter in a Parade article by Sagan (1983), published a month or so before its scientific counterpart by Turco et al. (1983). While some nuclear disarmament advocates promote the idea that nuclear winter is an extinction threat, and the general public is probably confused to the extent it is not disinterested, few scientists seem to consider it an extinction threat. It is understandable that some of these extinction fears were created by ignorance or uncertainty and treated seriously by worst-case thinking, as seems appropriate for threats of extinction. But nuclear doom mongering also seems to be at play for some of these episodes. For some reason, portions of the public active in nuclear issues, as well as some scientists, appear to think that arguments for nuclear arms reductions or elimination will be more persuasive if nuclear war is believed to threaten extinction, rather than merely the horrific cataclysm that it would be in reality (Martin, 1982). 4 As summarized by Martin, “The idea that global nuclear war could kill most or all of the world’s population is critically examined and found to have little or no scientific basis.” Martin also critiques possible reasons for beliefs or professed beliefs about nuclear extinction, including exaggeration to stimulate action.4 To summarize, nuclear war is a global catastrophic risk. Such wars may cause billions of deaths and unfathomable suffering, as well set civilization back centuries. Smaller nuclear wars pose regional catastrophic risks and also national risks in that the continued functioning of, for example, the United States as a constitutional republic is highly dubious after even a relatively limited nuclear attack. But what nuclear war is not is an existential risk to the human race. There is simply no credible scenario in which humans do not survive to repopulate the earth.

#### Current arsenal sizes ensure no extinction – BUT – it’ll spur political will for meaningful disarmament.

Daniel **Deudney 18**. Associate Professor of Political Science at Johns Hopkins University. 03/15/2018. “The Great Debate.” The Oxford Handbook of International Security. www.oxfordhandbooks.com, doi:10.1093/oxfordhb/9780198777854.013.22. //reem

Although nuclear war is the oldest of these technogenic threats to civilization and human survival, and although important steps to restraint, particularly at the end of the Cold War, have been achieved, the nuclear world is increasingly changing in major ways, and in almost entirely dangerous directions. The third “bombs away” phase of the great debate on the nuclear-political question is more consequentially divided than in the first two phases. Even more ominously, most of the momentum lies with the forces that are pulling states toward nuclear-use, and with the radical actors bent on inflicting catastrophic damage on the leading states in the international system, particularly the United States. In contrast, the arms control project, although intellectually vibrant, is largely in retreat on the world political stage. The arms control settlement of the Cold War is unraveling, and the world public is more divided and distracted than ever. With the recent election of President Donald Trump, the United States, which has played such a dominant role in nuclear politics since its scientists invented these fiendish engines, now has an impulsive and uninformed leader, boding ill for nuclear restraint and effective crisis management. Given current trends, it is prudent to assume that sooner or later, and probably sooner, nuclear weapons will again be the used in war. But this bad news may contain a “silver lining” of good news. Unlike a general nuclear war that might have occurred during the Cold War, such a nuclear event now would probably not mark the end of civilization (or of humanity), due to the great reductions in nuclear forces achieved at the end of the Cold War. Furthermore, politics on “the day after” could have immense potential for positive change. The survivors would not be likely to envy the dead, but would surely have a greatly renewed resolution for “never again.” Such an event, completely unpredictable in its particulars, would unambiguously put the nuclear-political question back at the top of the world political agenda. It would unmistakeably remind leading states of their vulnerability It might also trigger more robust efforts to achieve the global regulation of nuclear capability. Like the bombings of Hiroshima and Nagasaki that did so much to catalyze the elevated concern for nuclear security in the early Cold War, and like the experience “at the brink” in the Cuban Missile Crisis of 1962, the now bubbling nuclear caldron holds the possibility of inaugurating a major period of institutional innovation and adjustment toward a fully “bombs away” future.

#### Extinction is inevitable from future technology — nanotech, our simulation gets shut down, AI, biotech, particle accelerators, and black swans.

Bruce **Sterling 18**, 6-1-20**18**, "When Nick Bostrom says “Bang”," WIRED, https://www.wired.com/beyond-the-beyond/2018/06/nick-bostrom-says-bang/

4.1 Deliberate misuse of nanotechnology In a mature form, molecular nanotechnology will enable the construction of bacterium-scale self-replicating mechanical robots that can feed on dirt or other organic matter [22-25]. Such replicators could eat up the biosphere or destroy it by other means such as by poisoning it, burning it, or blocking out sunlight. A person of malicious intent in possession of this technology might cause the extinction of intelligent life on Earth by releasing such nanobots into the environment.[9] The technology to produce a destructive nanobot seems considerably easier to develop than the technology to create an effective defense against such an attack (a global nanotech immune system, an “active shield” [23]). It is therefore likely that there will be a period of vulnerability during which this technology must be prevented from coming into the wrong hands. Yet the technology could prove hard to regulate, since it doesn’t require rare radioactive isotopes or large, easily identifiable manufacturing plants, as does production of nuclear weapons [23]. Even if effective defenses against a limited nanotech attack are developed before dangerous replicators are designed and acquired by suicidal regimes or terrorists, there will still be the danger of an arms race between states possessing nanotechnology. It has been argued [26] that molecular manufacturing would lead to both arms race instability and crisis instability, to a higher degree than was the case with nuclear weapons. Arms race instability means that there would be dominant incentives for each competitor to escalate its armaments, leading to a runaway arms race. Crisis instability means that there would be dominant incentives for striking first. Two roughly balanced rivals acquiring nanotechnology would, on this view, begin a massive buildup of armaments and weapons development programs that would continue until a crisis occurs and war breaks out, potentially causing global terminal destruction. That the arms race could have been predicted is no guarantee that an international security system will be created ahead of time to prevent this disaster from happening. The nuclear arms race between the US and the USSR was predicted but occurred nevertheless. 4.2 Nuclear holocaust[winter] The US and Russia still have huge stockpiles of nuclear weapons. But would an all-out nuclear war really exterminate humankind? Note that: (i) For there to be an existential risk it suffices that we can’t be sure that it wouldn’t. (ii) The climatic effects of a large nuclear war are not well known (there is the possibility of a nuclear winter). (iii) Future arms races between other nations cannot be ruled out and these could lead to even greater arsenals than those present at the height of the Cold War. The world’s supply of plutonium has been increasing steadily to about two thousand tons, some ten times as much as remains tied up in warheads ([9], p. 26). (iv) Even if some humans survive the short-term effects of a nuclear war, it could lead to the collapse of civilization. A human race living under stone-age conditions may or may not be more resilient to extinction than other animal species. 4.3 We’re living in a simulation and it gets shut down A case can be made that the hypothesis that we are living in a computer simulation should be given a significant probability [27]. The basic idea behind this so-called “Simulation argument” is that vast amounts of computing power may become available in the future (see e.g. [28,29]), and that it could be used, among other things, to run large numbers of fine-grained simulations of past human civilizations. Under some not-too-implausible assumptions, the result can be that almost all minds like ours are simulated minds, and that we should therefore assign a significant probability to being such computer-emulated minds rather than the (subjectively indistinguishable) minds of originally evolved creatures. And if we are, we suffer the risk that the simulation may be shut down at any time. A decision to terminate our simulation may be prompted by our actions or by exogenous factors. While to some it may seem frivolous to list such a radical or “philosophical” hypothesis next the concrete threat of nuclear holocaust, we must seek to base these evaluations on reasons rather than untutored intuition. Until a refutation appears of the argument presented in [27], it would intellectually dishonest to neglect to mention simulation-shutdown as a potential extinction mode. 4.4 Badly programmed superintelligence When we create the first superintelligent entity [28-34], we might make a mistake and give it goals that lead it to annihilate humankind, assuming its enormous intellectual advantage gives it the power to do so. For example, we could mistakenly elevate a subgoal to the status of a supergoal. We tell it to solve a mathematical problem, and it complies by turning all the matter in the solar system into a giant calculating device, in the process killing the person who asked the question. (For further analysis of this, see [35].) 4.5 Genetically engineered biological agent With the fabulous advances in genetic technology currently taking place, it may become possible for a tyrant, terrorist, or ~~lunatic~~ to create a doomsday virus, an organism that combines long latency with high virulence and mortality [36]. Dangerous viruses can even be spawned unintentionally, as Australian researchers recently demonstrated when they created a modified mousepox virus with 100% mortality while trying to design a contraceptive virus for mice for use in pest control [37]. While this particular virus doesn’t affect humans, it is suspected that an analogous alteration would increase the mortality of the human smallpox virus. What underscores the future hazard here is that the research was quickly published in the open scientific literature [38]. It is hard to see how information generated in open biotech research programs could be contained no matter how grave the potential danger that it poses; and the same holds for research in nanotechnology. Genetic medicine will also lead to better cures and vaccines, but there is no guarantee that defense will always keep pace with offense. (Even the accidentally created mousepox virus had a 50% mortality rate on vaccinated mice.) Eventually, worry about biological weapons may be put to rest through the development of nanomedicine, but while nanotechnology has enormous long-term potential for medicine [39] it carries its own hazards. 4.6 Accidental misuse of nanotechnology (“gray goo”) The possibility of accidents can never be completely ruled out. However, there are many ways of making sure, through responsible engineering practices, that species-destroying accidents do not occur. One could avoid using self-replication; one could make nanobots dependent on some rare feedstock chemical that doesn’t exist in the wild; one could confine them to sealed environments; one could design them in such a way that any mutation was overwhelmingly likely to cause a nanobot to completely cease to function [40]. Accidental misuse is therefore a smaller concern than malicious misuse [23,25,41]. However, the distinction between the accidental and the deliberate can become blurred. While “in principle” it seems possible to make terminal nanotechnological accidents extremely improbable, the actual circumstances may not permit this ideal level of security to be realized. Compare nanotechnology with nuclear technology. From an engineering perspective, it is of course perfectly possible to use nuclear technology only for peaceful purposes such as nuclear reactors, which have a zero chance of destroying the whole planet. Yet in practice it may be very hard to avoid nuclear technology also being used to build nuclear weapons, leading to an arms race. With large nuclear arsenals on hair-trigger alert, there is inevitably a significant risk of accidental war. The same can happen with nanotechnology: it may be pressed into serving military objectives in a way that carries unavoidable risks of serious accidents. In some situations it can even be strategically advantageous to deliberately make one’s technology or control systems risky, for example in order to make a “threat that leaves something to chance” [42]. 4.7 Something unforeseen We need a catch-all category. It would be foolish to be confident that we have already imagined and anticipated all significant risks. Future technological or scientific developments may very well reveal novel ways of destroying the world. Some foreseen hazards (hence not members of the current category) which have been excluded from the list of bangs on grounds that they seem too unlikely to cause a global terminal disaster are: solar flares, supernovae, black hole explosions or mergers, gamma-ray bursts, galactic center outbursts, supervolcanos, loss of biodiversity, buildup of air pollution, gradual loss of human fertility, and various religious doomsday scenarios. The hypothesis that we will one day become “illuminated” and commit collective suicide or stop reproducing, as supporters of VHEMT (The Voluntary Human Extinction Movement) hope [43], appears unlikely. If it really were better not to exist (as Silenus told king Midas in the Greek myth, and as Arthur Schopenhauer argued [44] although for reasons specific to his philosophical system he didn’t advocate suicide), then we should not count this scenario as an existential disaster. The assumption that it is not worse to be alive should be regarded as an implicit assumption in the definition of Bangs. Erroneous collective suicide is an existential risk albeit one whose probability seems extremely slight. (For more on the ethics of human extinction, see chapter 4 of [9].) 4.8 Physics disasters The Manhattan Project bomb-builders’ concern about an A-bomb-derived atmospheric conflagration has contemporary analogues. There have been speculations that future high-energy particle accelerator experiments may cause a breakdown of a metastable vacuum state that our part of the cosmos might be in, converting it into a “true” vacuum of lower energy density [45]. This would result in an expanding bubble of total destruction that would sweep through the galaxy and beyond at the speed of light, tearing all matter apart as it proceeds. Another conceivability is that accelerator experiments might produce negatively charged stable “strangelets” (a hypothetical form of nuclear matter) or create a mini black hole that would sink to the center of the Earth and start accreting the rest of the planet [46]. These outcomes seem to be impossible given our best current physical theories. But the reason we do the experiments is precisely that we don’t really know what will happen. A more reassuring argument is that the energy densities attained in present day accelerators are far lower than those that occur naturally in collisions between cosmic rays [46,47]. It’s possible, however, that factors other than energy density are relevant for these hypothetical processes, and that those factors will be brought together in novel ways in future experiments. The main reason for concern in the “physics disasters” category is the meta-level observation that discoveries of all sorts of weird physical phenomena are made all the time, so even if right now all the particular physics disasters we have conceived of were absurdly improbable or impossible, there could be other more realistic failure-modes waiting to be uncovered. The ones listed here are merely illustrations of the general case.

#### The military is developing isomer bombs - even just testing will destroy the universe.

Bekkum 04 – Gary S. Bekkum, Founder of Spacetime Threat Assessment Report Research, Founder of STARstream Research, Futurist, “American Military is Pursuing New Types of Exotic Weapons”, Pravda, 8-30, http://www.starstreamresearch.com/dark\_matters.htm

Recently the British science news journal "New Scientist" revealed that the American military is pursuing new types of exotic bombs - including a new class of isomeric gamma ray weapons. Unlike conventional atomic and hydrogen bombs, the new weapons would trigger the release of energy by absorbing radiation, and respond by re-emitting a far more powerful radiation. In this new category of gamma-ray weapons, a nuclear isomer absorbs x-rays and re-emits higher frequency gamma rays. The emitted gamma radiation has been reported to release 60 times the energy of the x-rays that trigger the effect. The discovery of this isomer triggering is fairly recent, and was first reported in a 1999 paper by an international group of scientists. Although this controversial development has remained fairly obscure, it has not been hidden from the public. Beyond the visible part of defense research is an immense underground of secret projects considered so sensitive that their very existence is denied. These so-called "black budget programs" are deliberately kept from the public eye and from most political leaders. CNN recently reported that in the United States the black budget projects for 2004 are being funded at a level of more than 20 billion dollars per year. In the summer of 2000 I contacted Nick Cook, the former aviation editor and aerospace consultant to Jane's Defence Weekly, the international military affairs journal. Cook had been investigating black budget super-secret research into exotic physics for advanced propulsion technologies. I had been monitoring electronic discussions between various American and Russian scientists theorizing about rectifying the quantum vacuum for advanced space drive. Several groups of scientists, partitioned into various research organizations, were exploring what NASA calls "Breakthrough Propulsion Physics" - exotic technologies for advanced space travel to traverse the vast distances between stars. Partly inspired by the pulp science fiction stories of their youth, and partly by recent reports of multiple radar tracking tapes of unidentified objects performing impossible maneuvers in the sky, these scientists were on a quest to uncover the most likely new physics for star travel. The NASA program was run by Marc Millis, financed under the Advanced Space Transportation Program Office (ASTP). Joe Firmage, then the 28-year-old Silicon Valley CEO of the three billion dollar Internet firm US Web, began to fund research in parallel with NASA. Firmage hired a NASA Ames nano-technology scientist, Creon Levit, to run the "International Space Sciences Organization", a move which apparently alarmed the management at NASA. The San Francisco based Hearst Examiner reported that NASA's Office of Inspector General assigned Special Agent Keith Tate to investigate whether any proprietary NASA technology might have been leaking into the private sector. Cook was intrigued when I pointed out the apparent connections between various private investors, defense contractors, NASA, INSCOM (American military intelligence), and the CIA. While researching exotic propulsion technologies Cook had heard rumors of a new kind of weapon, a "sub-quantum atomic bomb", being whispered about in what he called the "dark halls" of defense research. Sub-quantum physics is a controversial re-interpretation of quantum theory, based on so-called pilot wave theories, where an information field controls quantum particles. The late Professor David Bohm showed that the predictions of ordinary quantum mechanics could be recast into a pilot wave information theory. Recently Anthony Valentini of the Perimeter Institute has suggested that ordinary quantum theory may be a special case of pilot wave theories, leaving open the possibility of new and exotic non-quantum technologies. Some French, Serbian and Ukrainian physicists have been working on new theories of extended electrons and solitons, so perhaps a sub-quantum bomb is not entirely out of the question. Even if the rumors of a sub-quantum bomb are pure fantasy, there is no question that mainstream physicists seriously contemplate a phase transition in the quantum vacuum as a real possibility. The quantum vacuum defies common sense, because empty space in quantum field theory is actually filled with virtual particles. These virtual particles appear and disappear far too quickly to be detected directly, but their existence has been confirmed by experiments that demonstrate their influence on ordinary matter. "Such research should be forbidden!" In the early 1970's Soviet physicists were concerned that the vacuum of our universe was only one possible state of empty space. The fundamental state of empty space is called the "true vacuum". Our universe was thought to reside in a "false vacuum", protected from the true vacuum by "the wall of our world". A change from one vacuum state to another is known as a phase transition. This is analogous to the transition between frozen and liquid water. Lev Okun, a Russian physicist and historian recalls Andrei Sakharov, the father of the Soviet hydrogen bomb, expressing his concern about research into the phase transitions of the vacuum. If the wall between vacuum states was to be breached, calculations showed that an unstoppable expanding bubble would continue to grow until it destroyed our entire universe! Sakharov declared that "Such research should be forbidden!" According to Okun, Sakharov feared that an experiment might accidentally trigger a vacuum phase transition.

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)