

“I Am Become Death”: Crossing the Event Horizon into the Colder War

Savi Alam

Northern Virginia Community College
PLS241 International Relations
Prof. Mark Royce
October 29th, 2021

In the present essay, I shall explore the uncomfortable question of nuclear war, with sections devoted to tracing the origins of our modern nuclear arms race, judging the merits of possible ways to avoid nuclear war, inquire on the West's moral responsibility regarding the possession of nuclear weapons in North Korea and Iran, and lastly offer a personal view on the nuclear dilemma.

I: ORIGINS OF THE NUCLEAR DILEMMA

The situation is--unsurprisingly--complicated. However, it is possible to trace the origins of the nuclear situation through its origins in American WWII-policy. There were two major factors that led the United States to acquire nuclear weapons: the expertise of the Nazi German V-2 rockets, and Einstein's letter to President Roosevelt. The German V-2 were among the first rockets ever designed, and they decimated the cities of London, Antwerp, and Liège¹ with a ruthless efficiency unmatched by Allied Forces². A few years later, Einstein warned President Roosevelt about the Nazis conspiring to create another more potent weapon using uranium³. Thus, these two forces pushed the Americans to devise Operation Paperclip.

Operation Paperclip was an operation by the US government, whereby the Americans kidnapped German scientists, erased their Nazi pasts, gave them US citizenship, and--most importantly--gave them millions of research dollars⁴. In essence, the Americans wanted the German scientists to do for the Americans what the scientists did for Nazi Germany. Eventually, this operation morphed into the Manhattan Project, where the US government commissioned Dr. Robert Oppenheimer to develop the nuclear bombs that would later be dropped on the Japanese cities of Hiroshima and Nagasaki⁵. Although a realist would argue that dropping the bombs saved lives by ending the war "early"--thus the US exerts its political influence upon Japan--, there is no way to verify this hypothesis. If this argument is true, then the realist argues that the cost of ending the war early is worth the cost of the nuclear tensions within the later half of the 21st century--and indeed, the situation that plagues us today. As former US Secretary of Defense Robert McNamara writes, "in conventional wars, mistakes destroy lives... in nuclear wars, mistakes destroy nations."⁶

While WWII ended with nuclear weapons, the Cold War would start with them. After WWII, the weakened forces of the Axis Powers and the Allied Forces left a power vacuum for the next global superpower: either the United States or the Soviet Union. As a result of this power vacuum, both countries brinked on mutually assured destruction numerous times. For example, in 1983, the Soviet Union received an alarm of a nuclear attack. The Soviet counterpart to the Secretary of Defense, Soviet Officer Stanislav Petrov, correctly suspected the attack was a

¹ Royce, Mark. Nuclear weapons. PLS241. Lecture at Northern Virginia Community College at Annandale. 2021.

² Ibid.

³ US Dept. of Energy. Albert Einstein. Einstein's letter to Roosevelt. 1939.

https://www.osti.gov/opennet/manhattan-project-history/Resources/einstein_letter_photograph.htm#1

⁴ Royce. Nuclear weapons.

⁵ Ibid.

⁶ McNamara, Robert. Apocalypse soon. 2009.

false alarm⁷. Had Petrov followed the evolutionary paranoid instinct to assume the worst, the US and the USSR would have likely fallen into nuclear war.

Thus, one arrives at the situation that plagues the modern day. In 2018, for a terrifying thirty-nine minutes, the entire state of Hawaii was put under nuclear alarm⁸. While the Hawaiian crisis was also a false alarm--for which the United States (thankfully) sought to verify the threat before retaliation--, it is only a matter of time before luck runs out. Below is an informal mathematical proof.

Let:

- (1) $p \equiv$ the chance of NO nuclear attack on any given day;
- (2) $p' \equiv$ the chance of a nuclear attack on any given day;
- (3) $n \equiv$ the number of days that have passed;
- (4) $k \equiv$ the chance there is NO nuclear attack over a span of days;
- (5) $k' \equiv$ the chance there is at least one nuclear attack over a span of days.

By the Multiplicative Rule:

$$(6) k = p^n$$

By the Law of the Sum of Probabilities:

$$(7) k' = 1 - k$$

By Equations (6) and (7):

$$(8) k' = 1 - p^n$$

By the Law of the Sum of Probabilities:

$$(9) p = 1 - p'$$

By Equations (8) and (9):

$$(10) k' = 1 - (1 - p')^n$$

Thus:

$$(11) \Rightarrow \lim_{n \rightarrow \infty} k' = 1, \text{ for } p' \neq 0.$$

What Equation (11) implies is if there is any non-zero certainty of nuclear peace today, this uncertainty will compound over time, and over a sufficiently long time scale, it is guaranteed that there will be at least one nuclear attack of one state on another. While this is a sobering fact, if states and their people are non-suicidal, as a realist presumes, it is in their best

⁷ Bradshaw, M. 1983 nuclear false alarm. Stanford University. 2017.
<http://large.stanford.edu/courses/2017/ph241/bradshaw2/>

⁸ Hawaii worker who sent missile alert was '100% sure' attack was real. Associated Press in Honolulu. The Guardian. 2018.
<https://www.theguardian.com/us-news/2018/feb/03/hawaii-worker-sent-missile-alert-100-percent-sure-attack-real>

interest to maximize their earthly existence. Therefore, states will follow action such that the chance of nuclear attack on any one day is as minimal as possible, and thus prolong their existence. It is unclear if the current state of nuclear tensions between countries, under the doctrine of mutually assured destruction, is the best way to minimize nuclear threat.

II: ARE THERE REALISTIC IDEAS FOR DISARMAMENT?

Unfortunately, it appears not. The current situation is a prisoner's dilemma where the most socially ideal situation for all countries collectively, nuclear disarmament, is discouraged. Below is a game-theory chart representing the situation:

		Other nuclear powers	
		<i>Keep nuclear weapons</i>	<i>Disarm nuclear weapons</i>
The United States	<i>Keep nuclear weapons</i>	(5000, 9000)	(5000, 0)
	<i>Disarm nuclear weapons</i>	(0, 9000)	(0, 0)

Key: $(x, y) = (\text{number of nuclear weapons possessed by the US, number of nuclear weapons possessed by other nuclear states})^9$

Fig. A: a game theory chart representing the nuclear disarmament dilemma on the world stage. Yellow highlight implies the preferred situation for the US, while orange indicates an ideal situation for other nuclear states, under the realist assumption that a state will seek to maximize its military power and thus maximize its nuclear supply.

As seen in Fig. A, the current nuclear situation is a prisoner's dilemma of military power. Nuclear weapons are the ultimate political tool and thus under the realist assumption that states will pursue power for their own survival, they will seek to keep their nuclear weapons. Therefore, the Nash equilibrium of this system is for all states to keep their weapons. Such a situation is market failure since all states having nuclear weapons raises the risk of a nuclear war [s]¹⁰, and unfortunately the situation where all states choose not to have nuclear weapons is not naturally encouraged; in fact, it is *discouraged*.

While there are international treaties that regulate nuclear weapons supply, such as the Nuclear Non-Proliferation Treaty ("NNPT"), these treaties are limited in that their punishment for non-cooperation is economic sanctions; thus, a country that relies little on imports and exports will largely be unaffected. In other words, the NNPT is ineffective against countries with a low trade-to-GDP ratio. Thus, hermit kingdoms, such as North Korea, are virtually immune to the terms of the NNPT. Additionally, albeit somewhat ironically, it is undesirable to enforce the terms of the NNPT through military might, as that would *escalate* the chance any one country decides to attack another through nuclear means. It is antithetical to the purpose.

⁹ All figures are approximated from Fig. A. Nuclear weapons: who has what at a glance. Arms Control Association. 2021. <https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat>

¹⁰ McNamara.

III: SHOULD THE WEST INTERVENE IN NORTH KOREA OR IRANS' NUCLEAR SUPPLY?

This situation is analogous to the infamous trolley problem: should the West intervene in the nuclear supply of terror states, then the West bears responsibility for any outcome, good or bad; alternatively, should the West hesitate to interfere in the nuclear supply of terror states, then the West effectively evades responsibility and puts the security of the nuclear supply in the hands of unstable states.

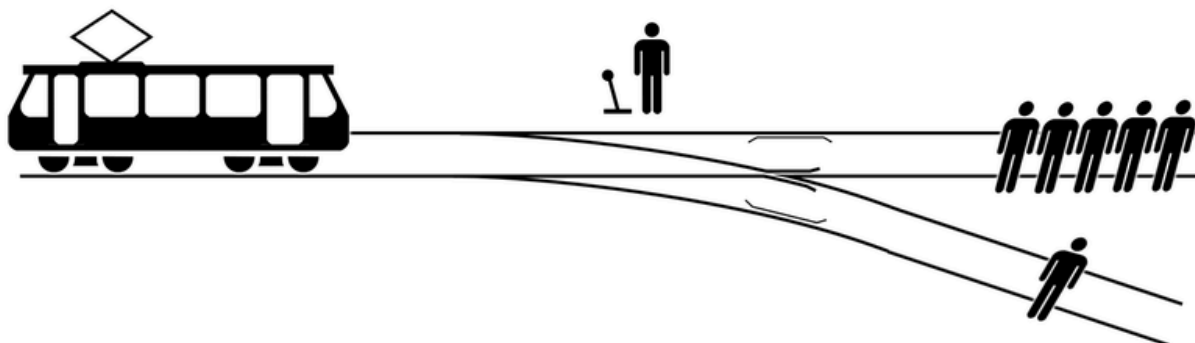


Fig. B: the trolley problem¹¹. A bystander stands at a railroad crossing while a train arrives at speed. The train is on track to murder several people should the bystander do nothing. However, should the bystander act, the train will switch tracks to murder a single person as a direct result of the bystander's actions.

An alternative framing of the question is should terror states, such as North Korea or the Islamic Republic of Iran, be permitted to bear a nuclear deterrent? In the interest of the preservation of the West, the answer is no. Under a utilitarian lens, one should maximize happiness for the greatest number of people. Thus, the happiness of the global community is maximized when there is not a constant threat of nuclear attack through the political stability of unstable states. If one chooses to measure happiness as economic productivity, then GDP becomes a measure to ascertain "happiness"; maximizing happiness therefore becomes a question of maximizing global GDP. An uncomfortable conclusion of this utilitarian lens is that the value of a country is exactly the same as their economic output. Therefore it is in the best interest of the global community to prioritize the safety concerns of countries with large economies than smaller ones.

¹¹ McGeddon. The trolley problem. Wikimedia Commons Repository. 2016.
https://commons.wikimedia.org/wiki/File:Trolley_problem.png

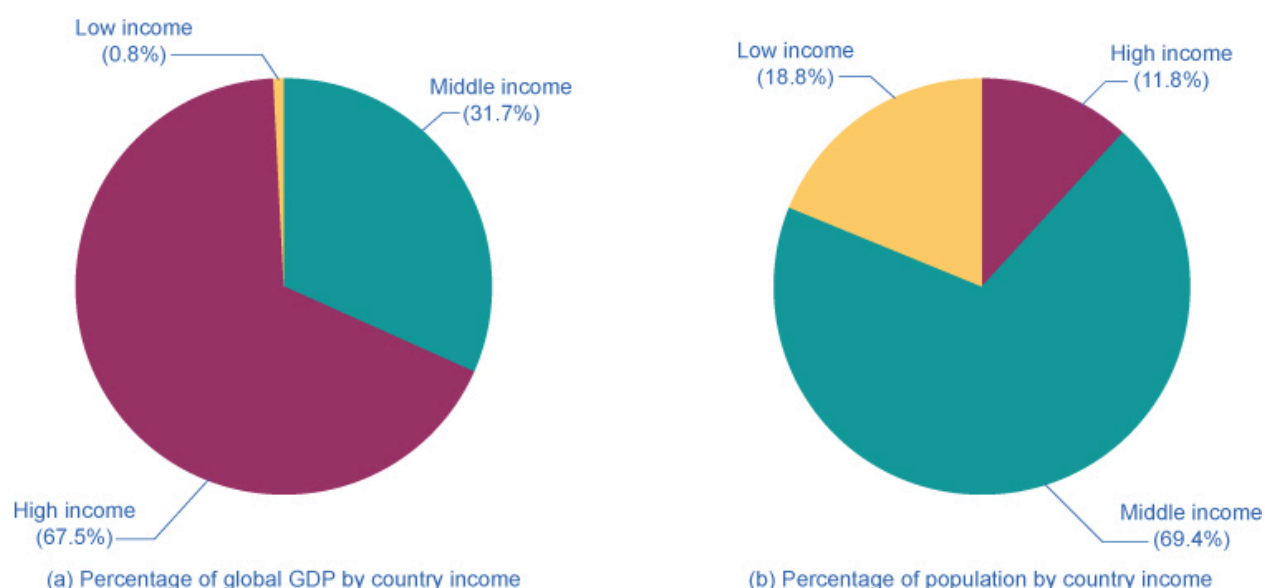


Fig. C¹²: pie charts showing countries as a share of the global GDP and global population, respectively.

Should this utilitarian framing be taken to its fullest extent, under the assumption that the West should maximize global happiness through their intervention in terror states, one arrives at the uncomfortable conclusion that since the global GDP is concentrated in the hands of a few high income countries¹³, a minority of the world's population is therefore empowered to make decisions on the outcomes of the rest. Such a situation is undemocratic and is eerily similar to the excuses the Great Powers of WWI made to justify territorial expansion¹⁴.

Additionally, while it would be more democratic to vote on intervention in North Korea and Iran through the United Nations, as argued in Sect. II, attempts to regulate nuclear weapons are ultimately confined to economic sanctions. In the politics of warfare, it is impossible to operate democratically; this is E. H. Carr's *realpolitik* embodied. As Carr notes, "military power is economic power is political power". Despite countries such as North Korea and Iran possessing poor economies, their military power as expressed through their unstable control of nuclear weapons poses a massive threat to all other nations.

¹² Table 1. The diversity of countries and economies across the world. Open Education Resources of the City University of New York. <https://opened.cuny.edu/courseware/lesson/585/student/>

¹³ See Fig. C.a.

¹⁴ Carr, E. H. The twenty years' crisis: an introduction to the study of international relations. Power in international politics. MacMillan and Co. Ltd. 1946.

IV: IS THE CURRENT NUCLEAR SITUATION MORALLY ACCEPTABLE?

Clearly not. Under almost any moral lens, the current situation is intolerable: under an utilitarian lens, a situation where a minority of the world's population (states with nuclear weapons) controls a majority of the political power is undemocratic; under a Kantian lens¹⁵, it is difficult to approve of the market failure of several world states carrying weapons; under a care ethicist lens, which prioritizes the value of human relationships, it is impossible to justify carrying nuclear weapons if the same weapons could dramatically shift the status quo within an extremely short time frame. However, while all of these lenses offer an opinion on the state of nuclear weapons, none offers a solution. It appears that perhaps nuclear weapons is a question ethics can not yet handle.

From a personal perspective of the author, this situation seems deeply uncomfortable, reminiscent of the Great Fermi Filter. The hypothesis of the Great Filter is that civilizations throughout the galaxy grow and combat barriers to growth as they attempt to survive in the vast nothingness of space. The hypothesis then posits this question: why does it seem that humans are alone in the universe? There are two possibilities: either humans have not developed enough to find evidence of extraterrestrial life (false loneliness) or--terrifyingly--humans are the first and only sentient beings in the universe (true loneliness).

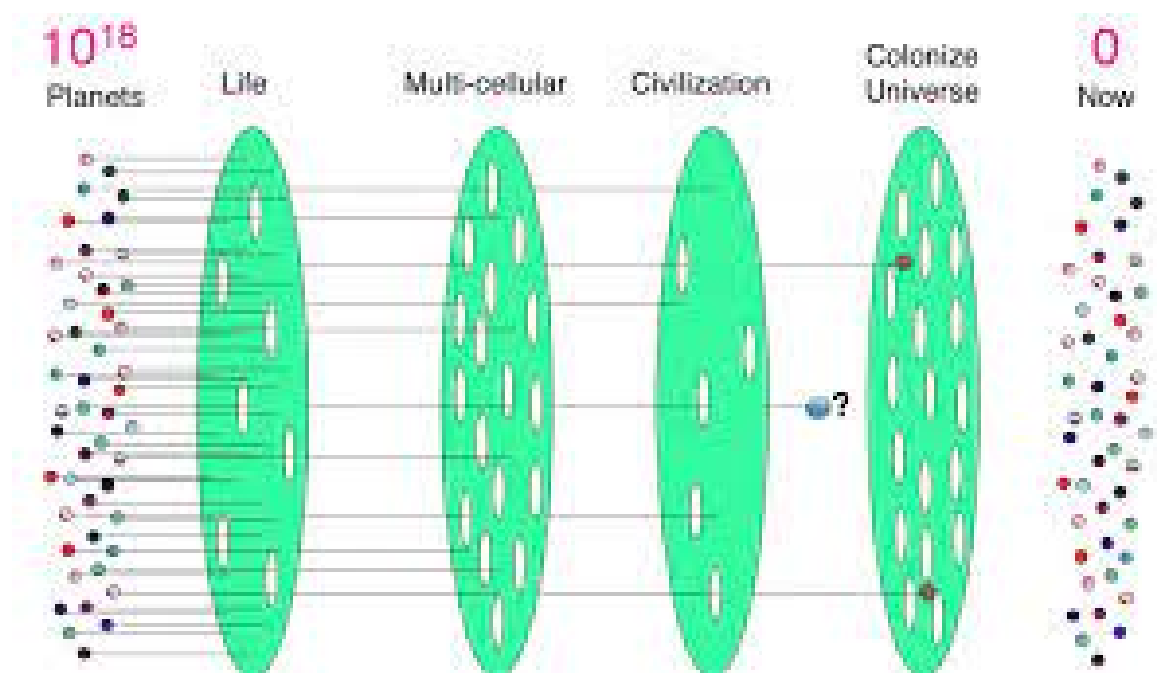


Fig. D¹⁶: a diagram of the Great Filters. Filters to civilization include a planet's distance from its sun, whether or not it contains water, whether or not its multicellular organisms can unify under political divisions and colonize the external world, etc. It is unknown whether humans will survive.

¹⁵ Defined as what one should do if they can rationalize everyone doing it.

¹⁶ Fig. A. Oesterheld. Civilizational filters and the distribution of values in the multiverse. Center for Long Term Risk. <https://longtermrisk.org/files/Civilizational-filters-and-the-Fermi-paradox.pdf>

The Great Filter posits another hypothesis: of the civilizations that grow and fight barriers to growth, some do not survive to the next stage. Therefore, the relative radio silence of outer space implies either: if humans suffer from false loneliness, then humans have not developed enough to contact extraterrestrials; else, if humans suffer from true loneliness, then it is impossible to know whether humans have already survived our own Great Filter, or if it lies ahead.

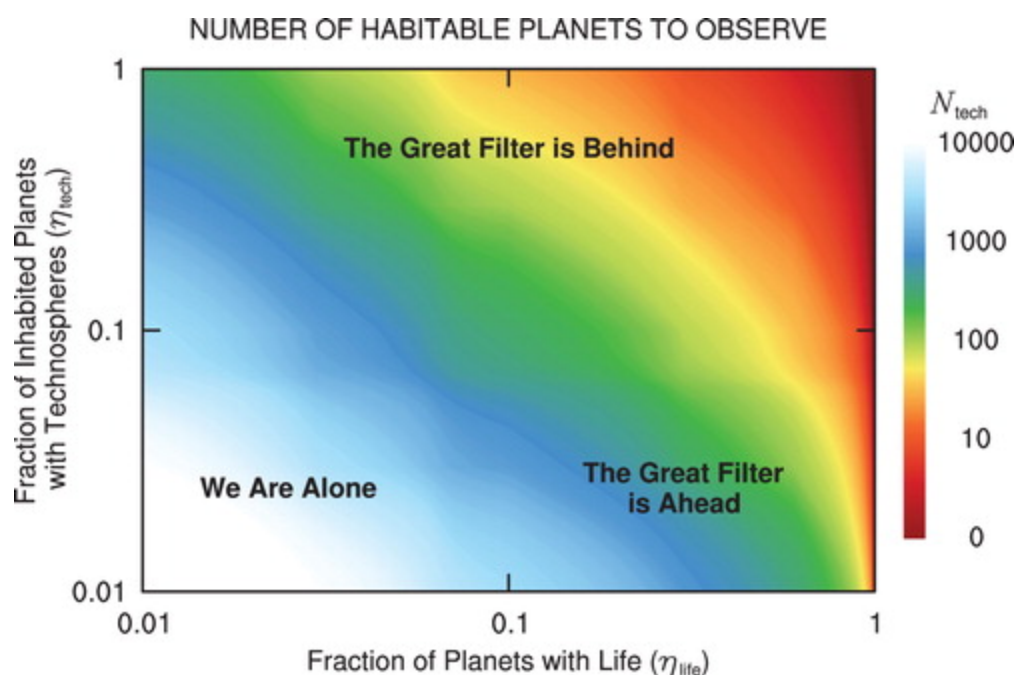


Fig. E¹⁷: a diagram of the Great Filter relative to the constants in the Drake Equation.

It is a personal conviction of the author that the next Great Filter for humans lies with our resolve to avoid nuclear war. Such a hopeful view is neither supported by history nor realist politics. For example, during the height of the Cold War, the tensions between the United States and the Soviet Union eventually crystallized into the Cuban Missile Crisis. While the crisis was averted by a hair's-breadth, what is largely forgotten is that four Soviet nuclear submarines who were patrolling the Cuban waters did *not* receive communications from the Russian Premier to deactivate until four days the crisis was declared averted¹⁸. Such a situation is unsustainable, and yet it is impossible to know how many near-Cuban Missile Crises happen each day. Humanity

¹⁷Haqq-Misra et al. Observational constraints on the Great Filter. Mary Ann Liebert Publishing. Journal of Astrobiology. 2020. <https://www.liebertpub.com/doi/10.1089/ast.2019.2154>

¹⁸ McNamara.

has barely survived by the skin of its teeth: all that is needed is one word misunderstood between two nations at odds for humans to confront the next Great Filter. Best to tread lightly.

Bibliography

- Bradshaw, M. 1983 nuclear false alarm. Stanford University. 2017.
<http://large.stanford.edu/courses/2017/ph241/bradshaw2/>
- Carr, E. H. The twenty years' crisis: an introduction to the study of international relations. Power in international politics. MacMillan and Co. Ltd. 1946.
- Fig. A. Nuclear weapons: who has what at a glance. Arms Control Association. 2021.
<https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat>
- Fig. A. Oesterheld. Civilizational filters and the distribution of values in the multiverse. Center for Long Term Risk.
<https://longtermrisk.org/files/Civilizational-filters-and-the-Fermi-paradox.pdf>
- Haqq-Misra et al. Observational constraints on the Great Filter. Mary Ann Liebert Publishing. Journal of Astrobiology. 2020. <https://www.liebertpub.com/doi/10.1089/ast.2019.2154>
- Hawaii worker who sent missile alert was '100% sure' attack was real. Associated Press in Honolulu. The Guardian. 2018.
<https://www.theguardian.com/us-news/2018/feb/03/hawaii-worker-sent-missile-alert-100-percent-sure-attack-real>
- McNamara, Robert. Apocalypse soon. 2009.
- McGeddon. The trolley problem. Wikimedia Commons Repository. 2016.
https://commons.wikimedia.org/wiki/File:Trolley_problem.png
- Royce, Mark. Nuclear weapons. PLS241. Lecture at Northern Virginia Community College at Annandale. 2021.
- Table 1. The diversity of countries and economies across the world. Open Education Resources of the City University of New York.
<https://opened.cuny.edu/courseware/lesson/585/student/>
- US Dept. of Energy. Albert Einstein. Einstein's letter to Roosevelt. 1939.
https://www.osti.gov/opennet/manhattan-project-history/Resources/einstein_letter_photo_graph.htm#1