



Nuclear Weapons and International Law: The Renewed Imperative in Light of the Russian Invasion of Ukraine

Wednesday, November 8, 2023

9:00 a.m. – 6:00 p.m.

Webinar

The International Section of
the New York State Bar Association
is proud to sponsor

NUCLEAR WEAPONS AND INTERNATIONAL LAW *The Renewed Imperative in Light of the Russian Invasion of Ukraine*

Wednesday, November 8, 2023

9:00 a.m. – 6:00 p.m. via Zoom

(virtual reception to follow)

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EVENT CO-CHAIRS:

Prof. Charles J. Moxley, Jr.
John Burroughs
Edward K. Lenci
Prof. Jeffrey Biller
Jonathan Granoff
Jules Zacher

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AGENDA

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9:00 – 9:45 a.m.

Opening Remarks

- **Prof. John D. Feerick**, Professor and Dean Emeritus, Fordham Law School
- **Prof. Charles J. Moxley, Jr.**, Professor (Adj.), Fordham Law School; Principal, Moxley ADR LLC
- **Richard C. Lewis**, President, New York State Bar Association
- **Mary L. Smith**, President, American Bar Association; Vice Chair, VENG Group
- **Prof. Jeffrey Biller**, Deputy Director, Law, Technology and Warfare Research Cell, United States Air Force Academy
- **Jonathan Granoff**, President, Global Security Institute; Senior Advisor, Permanent Secretariat of the World Summits of Nobel Peace Laureates
- **John Burroughs**, Senior Analyst, Lawyers Committee on Nuclear Policy
- **Edward K. Lenci**, Partner, Hinshaw & Culbertson LLP (NYC); Founder and former Co-Chair, Ukraine Task Force of the New York State Bar Association
- **Hon. Khrystyna Hayovyshyn**, Deputy Permanent Representative, Permanent Mission of Ukraine to the United Nations in New York

9:45 – 10:45 am Panel 1: Facts and Risks Associated with Nuclear Weapons Highlighted by Russia's Threats to Use Nuclear Weapons in Ukraine

Faculty:

- **Moderator: Charles Moxley**, Professor (Adj.), Fordham Law School; Principal, Moxley ADR LLC
- **Dr. Shane Smith**, Director, Institute for National Security Studies and Associate Professor, Dept. of Political Science, United States Air Force Academy
- **Alan Robock**, Distinguished Professor, Department of Environmental Sciences, Rutgers University
- **James Scouras**, Senior Scholar, Johns Hopkins University, Applied Physics Laboratory

10:45 – 11:00 a.m. Break

11:00 – 12:30 p.m. Panel 2: International Law Applicable to Potential Uses of Nuclear Weapons in Ukraine and Beyond

Addressing law of armed conflict principles of distinction, proportionality, necessity, and precaution and the law of reprisal applicable to potential uses of nuclear weapons, along with consideration of bases for per se rules under international law

Faculty:

- **Moderator: John Burroughs**, Senior Analyst, Lawyers Committee on Nuclear Policy
- **Major Kenneth Daniel Jones**, Judge Advocate, Office of the Judge Advocate General, U.S. Army
- **David Koplw**, Professor, Georgetown University Law Center; Former Special Counsel for Arms Control to the General Counsel of the U.S. Department of Defense
- **Charles Moxley**, Professor (Adj.), Fordham Law School; Principal, Moxley ADR LLC
- **Colonel Theodore T. Richard**, United States Air Force Judge Advocate, Staff Judge Advocate at Space Operations Command

12:30 – 1:30 p.m. Lunch

12:45 – 1:15 p.m. Keynote: *Role of International Law in Contemporary Times*
Prof. Oona Hathaway, Gerard C. and Bernice Latrobe Smith, Professor of International Law, Yale Law School

1:30 – 2:50 p.m. Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

Examining how, in applying LOAC to potential uses of nuclear weapons, various levels of probability of unlawful effects should be weighed and valued as to potential lawfulness.

Faculty:

- **Moderator: Charles Moxley**, Professor (Adj.), Fordham Law School; Principal, Moxley ADR LLC
- **Prof. Jeffrey Biller**, Deputy Director, Law, Technology and Warfare Research Cell, United States Air Force Academy
- **Eirini Giorgou**, ICRC Legal Adviser covering nuclear weapons
- **David Koplow**, Professor, Georgetown University Law Center; Former Special Counsel for Arms Control to the General Counsel of the U.S. Department of Defense
- **Dr. Hans Liwång**, Associate Professor, Deputy Head of Department of Systems Science for Defence and Security, Swedish Defence University

2:50 – 3:00 p.m. Break

3:00 – 4:25 p.m. Panel 4: Nuclear Deterrence and the Law of Threat

Faculty:

- **Moderator: Jacqueline Cabasso**, Executive Director, Western States Legal Foundation; North American Coordinator, Mayors for Peace
- **John Burroughs**, Senior Analyst, Lawyers Committee on Nuclear Policy
- **Eirini Giorgou**, ICRC Legal Adviser covering nuclear weapons
- **Navy Commander Leigha Groves**, Deputy Staff Judge Advocate, U.S. Strategic Command
- **David S. Jonas**, Partner, Fluet; Former Nuclear Nonproliferation Planner, Joint Chiefs of Staff; LtCol, USMC (Ret.); Adjunct Professor at Georgetown and George Washington Law Schools
- **Allen S. Weiner**, Senior Lecturer in Law and Director, Stanford Program in International and Comparative Law, Stanford Law School

4:25 – 4:35 p.m. Break

4:35 – 4:50 p.m. Reflections on Policy and Law: Jonathan Granoff, President, Global Security Institute; Senior Advisor, Permanent Secretariat of the World Summits of Nobel Peace Laureates

4:50 – 6:00 p.m. Panel 5: Strategy Session: Things Lawyers and Others Can Do to Get Involved and Make a Difference in Addressing Nuclear Weapons Risks

Faculty:

- **Moderator: Charles Moxley**, Professor (Adj.), Fordham Law School; Principal, Moxley ADR LLC
- **Jutta Bertram-Nothnagel**, Vice-President, Lawyers Committee on Nuclear Policy; Representative to the UN, International Association of Lawyers Against Nuclear Arms

- **Jacqueline Cabasso**, Executive Director, Western States Legal Foundation; North American Coordinator, Mayors for Peace
- **Denise Duffield**, Associate Director of Physicians for Social Responsibility – Los Angeles; Steering Committee Member, Back from the Brink Coalition
- **David Gibson**, Fordham Center on Religion and Culture; Catholic Peacekeeping Network
- **Edward K. Lenci**, Partner, Hinshaw & Culbertson LLP (NYC); Founder and former Co-Chair, Ukraine Task Force of the New York State Bar Association
- **Gerard F. Powers**, Faculty, University of Notre Dame, Kroc Institute for International Peace Studies; Director, Catholic Peacebuilding Studies
- **Seth Shelden**, UN Liaison, International Campaign to Abolish Nuclear Weapons; Partner, Farkas & Neurman; Adjunct Professor, CUNY School of Law
- **Jules Zacher**, Board Chair, Council for a Livable World; Executive Board Member, the Center for Ethics and the Rule of Law at the Annenberg Public Policy Center at the University of Pennsylvania

6:00 – 7:00 p.m.

Virtual reception

Click [here](#) to join.

Possible Panel Questions for Discussion

Charles J. Moxley, Jr.¹

Panel 1: Facts and Risks Associated with Nuclear Weapons Highlighted by Russia's Threats to Use Nuclear Weapons in Ukraine

Perspective from which to view these questions

Does it make more sense for us, in assessing the lawfulness of potential nuclear weapons threats and uses, to focus on the potential effects of high- or low- yield nuclear weapons? High-yield because the potential effects of such weapons inform us as to the potentially existential effects of the use of nuclear weapons? Or low-yield because it is the putative lawfulness of such weapons that most often— even typically— serves as the line of defense of defenders of the lawfulness of uses of nuclear weapons, essentially the argument that the effects of low-yield nuclear weapons are or may be lawful because of their putative potential to be discriminate, proportional, necessary, and within the bounds of lawful reprisal?

Effects of nuclear weapons

What are the effects of nuclear weapons?

Are the effects of nuclear weapons generally comparable to those of conventional weapons?

Do effects of nuclear weapons include radiation and radioactive fallout and potentially include nuclear winter and electromagnetic pulse (EMP) effects?

Does this apply to low-yield nuclear weapons?

Are such effects of nuclear weapons, including low-yield nuclear weapons, controllable? Could radioactive fallout and potential nuclear winter and EMP effects be limited to the area of the military target?

Putting aside electromagnetic pulse (EMP) effects, higher altitude detonations of nuclear weapons potentially have more limited effects than ground bursts. This is because higher altitude detonations do not throw up the smoke and debris that result from ground bursts and cause far-reaching spreads of radioactive fallout and potential nuclear winter. What then are the likely ranges of effects of such higher altitude detonations that avoid ground bursts but are not high enough to precipitate EMPs? To what extent are such higher altitude bursts controllable, their effects limited?

Are such effects knowable— or are they likely, in most circumstances, to be essentially uncertain and unpredictable?

¹ Charles Moxley teaches nuclear weapons law at Fordham Law School and has written and spoken extensively on the subject. His treatise on nuclear weapons law, *Nuclear Weapons and International Law: Existential Risks of Nuclear War and Deterrence through a Legal Lens*, will be released in February 2024. It is the second edition and, now at two volumes, a substantial expansion of his 2000 book, *Nuclear Weapons and International Law in the Post Cold War World*. See <https://static1.squarespace.com/static/603410a4be1db058065ce8d4/t/6548141469af731e25fef39/1699222548762/LCNP+posting+re+upcoming+publication+of+upcoming+treatise+on+nuclear+weapons+law+11+5+23.pdf>. Moxley is co-author of the 2011 article, *Nuclear Weapons and Compliance with International Humanitarian Law and the Nuclear Non-Proliferation Treaty*, in the *Fordham International Law Journal* and has written numerous other law journal articles on the subject.

In assessing the lawfulness of potential uses of nuclear weapons, is the United States able to model and assess the extent of such potential effects in advance of such uses? If so, to what extent, with what level of reliability, is it able to do so?

If the United States used nuclear weapons against a major nuclear power such as Russia or China, to what extent, if at all, would the United States be able to assess in advance whether such a target State would respond with its own retaliatory nuclear counterstrikes and, if so, whether such counterstrikes would potentially be of an escalatory nature?

As to the extent of the potential effects of nuclear weapons, do such effects potentially include death and injury to:

- thousands of civilians and neutrals?
- millions of civilians and neutrals?
- billions of civilians and neutrals?

What would the likelihood be of such potential levels of effects?

Time factors

How many minutes would it take for incoming nuclear strikes to reach targets in the United States?

How much time would the United States, upon learning of incoming strikes, likely have to decide whether to respond to them, so as potentially to avoid the loss of its stationary nuclear assets, such as ICBMs and aircraft on the ground and submarines on land or otherwise above the sea?

How long would it likely take the United States, faced with incoming nuclear strikes, to conduct a good faith legal assessment of the lawfulness of potential retaliatory nuclear strikes?

High alert levels/policy of launch-on-warning

To what extent, if at all, does the United States maintain its nuclear weapons on high alert levels? What does this mean? What are the applicable time factors?

To what extent, if at all, does the United States maintain the policy of launch-on-warning?

Geopolitical risks---Instance of Ukraine

What are the risks that nuclear weapons will actually be used?

What do Russia's actions and threats in Ukraine portend concerning the risk that nuclear weapons will be used.

Likelihood of Escalation

If low-yield nuclear weapons are used in a conflict between nuclear weapons states, what is the likelihood of escalation?

Significance of the United States' substantial de-emphasis of low-yield nuclear weapons

The U.S. currently has some 200 low-yield nuclear weapons, as contrasted with Russia's having some 2000 low-yield nuclear weapons. With its approach of emphasizing high-yield. nuclear weapons, the U.S.

seems to be messaging a robust policy of mutual assured destruction (MAD), whereas Russia's focus on low-yield nuclear weapons appears to emphasize the potential useability of at least low-yield nuclear weapons.

All of this is in the context of the reality that, in the view of many, the potential for escalation, once the nuclear Rubicon is crossed, is very high, and the recognition of essentially everyone that, subject to exigencies of potential situations, there is a serious risk that any use of even low-yield nuclear weapons would escalate into broader use of such weapons, particularly in circumstances of armed conflict among major nuclear powers, such the U.S., Russia, and China.

To the extent such observations are valid, what is the significance of such realities vis-à-vis the risks posed by nuclear weapons? What is their significance, if any, as to the potential lawfulness of potential uses of nuclear weapons, particularly low-yield uses?

Panel 2: International Law Applicable to Potential Uses of Nuclear Weapons in Ukraine and Beyond

Rule of distinction

As to the rule of distinction, such issues as the following are presented: Whether the application of the rule to potential nuclear weapons uses requires only that it appear that the military strikes in question will hit and their effects be limited to their intended military targets – or whether the rule also requires that the full range of potential effects of the strike, including radioactive fallout and potential nuclear winter and electromagnetic pulse (EMP) effects, be limited to the area of the military targets?

Rule of proportionality

As to the rule of proportionality, such issues as the following are presented: Whether the rule involves merely a comparative exercise, a weighing of potential collateral effects on civilians and other protected persons against potential military benefits from the contemplated military strikes – or whether there are objective limits on the potential extent of such collateral effects, requiring that such effects be limited in nature?

Rule of necessity

As to the rule of necessity, such issues as the following are presented:

- Whether a State may use nuclear weapons in circumstances where conventional weapons would be adequate to address the military objectives at hand?
- Whether, for a military strike to comply with the rule of necessity, the strike must potentially lead to a net military benefit?
- Whether there is any obligation for a State, if feasible (or the like), to maintain an adequate inventory of conventional weapons so as to obviate the potential need to use nuclear weapons.

Rule of precaution

As to the rule of precaution, such issues as the following are presented: Whether it is lawful for the United States (or other NWs States, to follow policies and plans to use nuclear weapons within a time period that would not permit a reasonable level of legal analysis as to the lawfulness of such potential strikes?

Controllability

As to the rules of distinction, proportionality, necessity and precaution, such further issues as the following are presented:

- Controllability
 - Do those rules permit the use of weapons whose effects are uncontrollable?
 - What does the term “uncontrollable” mean in this respect?
 - Are the known and potential effects of even low-yield nuclear weapons controllable in this sense?
- Level of knowledge
 - What is the legal standard as to the level of knowledge a State would be required to have as to the potential consequences of a nuclear weapons strike for it to conclude that the strike would be lawful under the law of armed conflict?
 - Is it enough for a State to simply rely on the then available information readily at hand?
 - Or is there some duty for the State not to do the strike until it has sufficient information to enable it to form a good faith belief that the strike, given its potential effects, will be lawful?

Law of reprisal

As to the law of reprisal, such issues as the following are presented:

- Can nuclear weapons lawfully be used in reprisal if conventional weapons could potentially address the military objectives in question?
- May nuclear weapons be used in reprisal if the effects of such weapons would not be controllable? If the effects of nuclear weapons strikes would be uncontrollable, can the State, in connection with such a strike, comply with the requirement of proportionality—or does the absence of controllability preclude such compliance?
- May civilians be targeted in reprisal—and what does this question even mean: Is it a matter of subjective intent, and, if so, of whom? Or is it a matter of knowledge or awareness or even notice, within some standard (and, if so, what standard), that civilians may or will end up being hit by the reprisal strike?
- How broad is the contemporary notion of military targets—does it have any limitation, and, if so, what they?

Civilian immunity

Is it lawful under LOAC to target civilians?

If not, what is the extent and scope of such unlawfulness? Does it extend to strikes where it is foreseeable or the like that civilians will be killed and injured? What is legal, including mens rea standard in this regard?

Law of neutrality

In applying the international law of neutrality to uses of nuclear weapons by a belligerent State against another belligerent State:

- Do such nuclear weapons effects as radioactive fallout and potential nuclear winter and EMP effects constitute “instrumentalities of war”?

- If so, does the law of neutrality prohibit uses of nuclear weapons by belligerents that would potentially lead to such effects in the territory of neutral States?

Causation

As to the international law of causation, such issues as the following are presented:

- What connection is necessary between an action and its consequences for war crimes culpability to arise? Is it enough that the action substantially contributed to the unlawful effects in question? If so, what is the scope of that requirement?
- Does a State that conducts nuclear strikes potentially have legal responsibility for foreseeable nuclear responses by targets of such strikes, notwithstanding that such responses are conducted by the targets, which potentially could have decided not to respond with their own nuclear strikes? Are such legal constructs as intervening or superseding cause determinative here or is foreseeability enough (including, perhaps, foreseeability in the sense of how a State's military planners evaluate risk in formulating the policy of deterrence)?

Per se rules

With respect to the question of whether some or all uses of nuclear weapons would be per se unlawful, such questions as the following are presented: For a per se rule to arise as to the unlawfulness of uses of a weapon:

- Must all uses of such weapons be unlawful?
- Or is it sufficient that such uses would be unlawful:
 - in the vast majority of circumstances;
 - in the majority of circumstances; or
 - in circumstances of the
 - normal,
 - expected, or
 - planned uses of such weapons?
- Is the legal category of per se unlawfulness of a particular type of weapon necessarily unitary, of an up or down nature, or does the law include potential sub-categories, such that some levels (such as weapons of certain yield-levels) of nuclear weapons are per se unlawful and others not?

Purposes of LOAC

As to the purposes of LOAC, would the potential use by a State of nuclear weapons be consistent with such purposes of LOAC as the following:

- imposing limits on the conducting of armed conflict?
- imposing fundamental standards of civilization, principles of humanity, on armed conflict?
- preserving the potential for the return to a state of peace?
- keeping the exercise of armed conflict within reasonable limits?
- protecting civilians and non-combatants?
- protecting combatants from extreme and unreasonable levels of warfare?

What, if any, significance do such (or other) purposes of LOAC have when it comes to a State's applying LOAC to potential uses of nuclear weapons under consideration

Conventional weapons

To what extent, if at all, are contemporary conventional weapons able to accomplish military objectives for which nuclear weapons might previously been considered?

What is the legal significance, if any, of the fact that, even if a conventional weapon could potentially achieve the military objective, a nuclear weapon can do it quicker—mass and speed?

Low-yield nuclear weapons

To what extent are conventional weapons able to accomplish military objectives for which low-yield nuclear weapons might previously have been considered?

Are effects of low-yield nuclear weapons controllable?

Again, what is the legal significance, if any, of the fact that, even if a conventional weapon could potentially achieve the military objective, a nuclear weapon can do it quicker—mass and speed?

Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

Risk analysis

Given that the rules of distinction, proportionality, necessity, and precaution, and the law of reprisal must, to be effective, be applied in advance of potential uses of nuclear weapons and the reality that, at the time of making such legal assessments, all that could be known are probabilities or likelihoods as to the potential effects of such weapons uses, such questions as the following are presented:

- How, if at all, are principles of risk analysis to be applied under LOAC in assessing the lawfulness of military strikes under consideration?
- Is there a legal obligation to apply principles of risk analysis?
- If so, what are those principles? How does it work?
- What level of risk that the effects of potential uses of nuclear weapons would be unlawful is necessary for such uses to be unlawful?
- What weight should be given to low probability high impact potential effects of nuclear weapons uses in assessing the lawfulness of nuclear weapons uses under consideration?
- What weight should be given to “uncertain” or “unknown” potential effects of nuclear weapons uses that are not subject to advance measurement or assessment?
- Is it even a matter of weight at all—or, at some point (and, if so, at what point), does the fact of risk of unlawful effects preclude the military strike under consideration?
- What, if any, limits does LOAC or other law place on the levels or extent of risk of death and injury to civilians and neutrals that a State may take in conducting military operations?

Levels of likelihood of unlawful effects necessary for unlawfulness

In applying such rules as those of distinction, proportionality, necessity, and precaution and the law of reprisal, what level of likelihood of unlawful effects is necessary for unlawfulness to incept—effects that “may be expected,” that are “foreseeable,” that are “expected,” that are “anticipated,” that are “likely,” that “would necessarily occur,” that “would clearly occur” or the like?

What do such terms as “expected” and “foreseeable” mean in this context, including whether the test as to whether an effect is “expected” means that it may or that it will happen, i.e., what level of probability is necessary for an effect to be “expected”? Same questions as to the meaning of “foreseeable”.

Panel 4: Nuclear Deterrence and the Law of Threat

Policy of deterrence

What is the U.S. policy of nuclear deterrence?

Mutual assured destruction (MAD)

Does the United States follow MAD?

Does MAD include a threat to kill and injure civilians?

Are important military and non-military targets in the United States and Russia largely so co-located that, however the policy or intent might be expressed, the U.S. and Russia would, in effect, in targeting such military targets of the other side, largely be targeting civilian as well as military persons and objects?

Nuclear deterrence

As to the lawfulness of the policy of nuclear deterrence followed by the United States and other nuclear weapons States and the reality of overt threats to use such weapons that are periodically made by nuclear weapons States, such question as the following arise as to the lawfulness or not 1) of overt threats to use nuclear weapons and 3) of the policy of nuclear deterrence:

- Does the policy constitute or contain a threat to use nuclear weapons? What is the meaning of the word “threat” in this context? What are the legal elements that are necessary for an act or an omission to constitute a threat as a matter of law?
- If the policy of deterrence does rise to the level of being a threat, does it constitute a threat to use any and all of the types of nuclear weapons in its arsenal?
- Is one of the purposes of the U.S. policy of deterrence to threaten adversaries with extreme effects beyond those needed to secure their defeat?
- Does possession of nuclear weapons with a stated readiness to use them constitute a threat to use such weapons?
- Is it lawful under *jus ad bellum* for a State to threaten uses of force that would be unlawful? How so?
- Is it lawful under *jus in bello* for a State to threaten uses of force that would be unlawful? In effect, are bluffs permissible under *jus in bello*? If so, does that extend to bluffs to use nuclear weapons, given their likely and potential consequences?
- How do these issues relate to issues as to the Bush Doctrine? If the Bush Doctrine is legally valid and applicable, does it mean, at least insofar as concerns *jus ad bellum*, that essentially any level of threat is legally permissible as against a State that has WMD or the like? Is this the law? Should it be? How would this same issue be analyzed under *jus in bello*?
- If one assumes, *arguendo*, that it is unlawful to threaten the use of force that it would be unlawful to use, what does this mean in terms of the U.S. nuclear weapons inventory? For instance, if one were to assume that, under some circumstances, it might be lawful to use relatively low-yield nuclear weapons, but that the use of high-yield nuclear weapons would be

unlawful (or unlawful except in limited circumstances), what would such an assumption mean as to the lawfulness of the United States' policy of nuclear deterrence, with its unlimited threat to use nuclear weapons, including high-yield nuclear weapons?

Panel 5: Strategy Session: Things Lawyers and Others Can Do to Get Involved and Make a Difference in Addressing Nuclear Weapons Risks

What are options in terms of

- Litigation
- Potential prosecutions and selection of prosecutors, federal, state, local, and internationally
- Political efforts to elect public officials
- Legislation
- Education
- Public policy debate
- FOIA requests
- Shareholder proposals
- Initiatives of and through
 - Bar associations
 - international organizations
 - religious organizations
 - NGOs and other interest groups
- Other?

FACULTY BIOGRAPHIES

Jutta Bertram-Nothnagel

Vice President, Lawyers Committee on Nuclear Policy

Representative to the UN, International Association of Lawyers Against Nuclear Arms



Jutta F. Bertram-Nothnagel, LL.M., is an attorney registered in New York, with US and German law degrees.

She is a Former Director of Relations with Intergovernmental Organizations for the Union Internationale des Avocats and served as UIA Permanent Representative to the United Nations and to the Assembly of States Parties to the Rome Statute of the International Criminal Court [ICC-ASP].

She currently represents the International Association of Lawyers Against Nuclear Arms at the UN and at the ICC-ASP. From 2001 until the conclusion of the Kampala Review Conference, she led the CICC Team on the Crime of Aggression. She has attended the negotiating processes for the International Criminal Court since 1995. At the Rome Conference, she has led the CICC Team on General Principles.

She has represented non-governmental organizations at the United Nations since 1992, especially in the areas of sustainable development and human rights.

She has been Adjunct Associate Professor at Benjamin N. Cardozo School of Law, Yeshiva University, New York, 1985-1989, Senior Fellow at the Center for International Studies at New York University, 1991-1992, and President of the United Nations Association of New York, 1997-2000.

Jeffrey Biller

Deputy Director, Law, Technology and Warfare Research Cell, United States Air Force Academy



Jeffrey Biller is an Assistant Professor of Cyber Law and Policy with the United States Air Force Academy. In addition to performing faculty duties with the Department of Law, he is part of Air Force CyberWorx, partnering with government, industry, and academia to develop innovative cyber solutions to the Air Force's most complex problems. He is also the co-director of the Law, Technology, and Warfare Research Cell.

Jeffrey is a retired Lieutenant Colonel in the United States Air Force, where he served over twenty years as a SERE Instructor, Intelligence Officer, and Judge Advocate. Prior to joining the Air Force Academy, he served as a military professor and Director for the Law of Armed Conflict at the Stockton Center for International Law, part of the US Naval War College. His previous assignments include advising the Air Force's cyberspace wings and its component to the intelligence community

John Burroughs

Senior Analyst, Lawyers Committee on Nuclear Policy



Dr. John Burroughs is Senior Analyst for Lawyers Committee on Nuclear Policy (LCNP) in New York City. From 1999 to 2020 he was the Executive Director. He has represented LCNP in Nuclear Non-Proliferation Treaty review proceedings and in negotiations on the Treaty on the Prohibition of Nuclear Weapons. He was a member of the legal team for the Marshall Islands in its nuclear disarmament cases in the International Court of Justice. His publications include *The Legality of Threat or Use of Nuclear Weapons: A Guide to the Historic Opinion of the International Court of Justice* (1998); co-author, [Nuclear Weapons and Compliance with International Humanitarian Law and the Nuclear Non-Proliferation Treaty](#), *Fordham International Law Journal* (2011); co-editor and contributor, [Nuclear Disorder or Cooperative Security? U.S. Weapons of Terror, the Global Proliferation Crisis, and Paths to Peace](#)

(2007); [Key Issues in Negotiations for a Nuclear Weapons Prohibition Treaty](#), *Arms Control Today*, June 2017; and articles and op-eds in *Bulletin of the Atomic Scientists*, *Newsday*, and other journals and newspapers. Burroughs has taught international law as an adjunct professor at Rutgers Law School. He has a J.D. and Ph.D. from the University of California at Berkeley and a B.A. from Harvard University.

Jacqueline Cabasso

Executive Director, Western States Legal Foundation
North American Coordinator, Mayors for Peace



Jacqueline Cabasso has been involved in nuclear disarmament, peace, and environmental advocacy at the local, national, and international levels for over 40 years. Since 1984 she has served as Executive Director of the Western States Legal Foundation (WSLF) in Oakland, California, an affiliate of the International Association of Lawyers Against Nuclear Arms. Grounded in commitments to nonviolence and international law, working with WSLF she has provided legal support for nonviolent protesters; engaged in environmental review proceedings and litigation to challenge nuclear facilities, transportation of nuclear waste, and proposals to base nuclear-armed warships; and organized grassroots multi-issue coalitions. She frequently

writes for and travels on behalf of WSLF, speaking at conferences and rallies, and meeting with other organizers across the U.S., in Europe, Asia, and Latin America.

In the United States, Ms. Cabasso serves as National Co-convenor of United for Peace and Justice, a multi-issue network. She also serves on the Coordinating Committee of the Back from the Brink Campaign. Internationally, she is a leading voice for the abolition of nuclear weapons. In 1995 she was a “founding mother” of the Abolition 2000 Global Network to Eliminate Nuclear Weapons, and she continues to serve on its Coordinating Committee. Since 2007, she has served as North American Coordinator for Mayors for Peace.

Ms. Cabasso is a contributor to *Nuclear Disorder or Cooperative Security? U.S. Weapons of Terror, the Global Proliferation Crisis and Paths to Peace* (2007) and the co-author of *Risking Peace: Why We Sat in the Road* (1985), an account of the huge 1983 nonviolent protest at the Livermore Nuclear Weapons Laboratory and the subsequent mass trial conducted by WSLF. She is a contributing author to a collection of papers entitled, *Rethinking General and Complete Disarmament in the Twenty-First Century*, published by the United Nations Office of Disarmament Affairs in 2016. Her writings have appeared in publications including *The Bulletin of the Atomic Scientists*, the journal *Social Justice*, *IDN – In Depth News*, and the *San Francisco Chronicle*.

Ms. Cabasso is the recipient of the International Peace Bureau's 2008 Sean MacBride Peace Award and the 2009 Agape Foundation's “Enduring Visionary” award.

Denise Duffield

Associate Director of Physicians for Social Responsibility – Los Angeles
Steering Committee Member, Back from the Brink Coalition



Denise Duffield joined Physicians for Social Responsibility-Los Angeles (PSR-LA) in 2004 and serves as Associate Director. Denise directs PSR-LA's Nuclear Threats program, which advocates for nuclear weapons abolition and policies that prevent exposure to radioactive waste and contamination. Denise also serves on the Steering Committee of Back from the Brink: Bringing Communities Together to Abolish Nuclear Weapons, a national grassroots campaign that brings communities together to abolish nuclear weapons. She also leads PSR-LA's efforts to fully clean up the Santa Susana Field Laboratory (SSFL), a contaminated nuclear and rocket-engine testing site located just 30 miles from downtown Los Angeles.

Denise currently serves as President of the Board of the Alliance for Nuclear Accountability, a national network of organizations that works to address issues of nuclear weapons production and waste cleanup.

Prof. John D. Feerick

Professor and Dean Emeritus, Fordham Law School



A graduate of Fordham College at Rose Hill, Feerick earned his law degree at the University's School of Law, then located at 302 Broadway. As editor-in-chief of the Fordham Law Review, he wrote an article about presidential succession, which later served as the foundation of the 25th Amendment to the Constitution, an amendment Feerick helped draft at the invitation of the American Bar Association in 1964. His efforts led to a Pulitzer Prize nomination and established his reputation as one of the sharpest legal minds of his generation.

In 1982, following a 21-year legal career at Skadden, Arps, Slate, Meagher & Flom, he became dean of Fordham Law. During his 20-year tenure, he built the law school's ethics and dispute resolution curriculum, public service and clinical programs, as well as various centers and institutes. His dedication to the Jesuit philosophy of service to others led to the establishment of nationally recognized programs in legal ethics, public interest law, clinical legal education, and international human rights.

Widely respected for his mediation and arbitration skills, Feerick served as the inaugural chair of the ethics committee of the Dispute Resolution Section of the American Bar Association. He also chaired a joint committee of legal, arbitration, and conflict resolution professionals that generated national standards for mediation, and he adjudicated several high-profile labor cases, including the 1994 transit negotiations in New York and the 1999 National Basketball Association lockout.

Feerick has also held a number of public positions. He served as a member of the New York State Law Revision Commission and the New York State Committee to Promote Public Trust and Confidence in the Legal System, and he was chair of the state's Commission on Public Integrity.

In 2006, Fordham University established the Feerick Center for Social Justice at Fordham Law School. The center's mission reflects that of its founding director: to protect the underprivileged from a wide array of social ills, while working to bolster workers' rights and access to legal services.

David Gibson

Fordham Center on Religion and Culture
Catholic Peacekeeping Network



David Gibson was appointed the director of the CRC in July 2017, coming to New York's Jesuit university after a long career as an award-winning religion journalist, author, and filmmaker. He is also a convert to Catholicism and he came by all those vocations by accident—or Providence—while working at the English Program at Vatican Radio in Rome in the late 1980s. He returned to the United States in 1990 and worked for newspapers throughout the New York area and has written for a variety of magazines and periodicals.

Gibson is the author of two books on Catholicism: [The Coming Catholic Church: How the Faithful are Shaping a New American Catholicism](#) and [The Rule of Benedict: Pope Benedict XVI and His Battle with the Modern World](#). He co-wrote and co-produced several documentaries on Christianity for CNN and the History Channel and co-authored a book on biblical archeology, [Finding Jesus: Faith. Fact. Forgery](#), the basis of a popular CNN series of the same name.

Before coming to Fordham, Gibson worked for six years as a national reporter at Religion News Service and specialized in coverage of the Vatican and the Catholic Church. Gibson is a frequent media commentator and op-ed writer on topics related to the Catholic Church and religion in America.

Dr. Eirini Giorgou

ICRC Legal Adviser covering nuclear weapons



Dr. Eirini Giorgou is a legal adviser in ICRC's Arms and Conduct of Hostilities Unit, where she works, among other issues, on explosive weapons in populated areas and on nuclear weapons. She was previously employed in the ICRC's unit for relations with arms carriers. Eirini has several years' experience in multilateral disarmament and arms control diplomacy and negotiations outside the ICRC. Eirini is a licensed lawyer and holds a PhD in international law from the University of Geneva.

Jonathan Granoff

President, Global Security Institute
Senior Advisor, Permanent Secretariat of the World Summits of Nobel Peace Laureates



Jonathan Granoff, President of the Global Security Institute, Permanent Observer to the UN of the International Anti-Corruption Academy, and Representative to the UN of the World Summits of Nobel Peace Laureates.

An international lawyer and former professor of international law. Recipient of the 2020 Lifetime Achievement Award of the International Law Section of the American Bar Association and Senior Advisor to its Committee on National Security. Fellow and Trustee of the World Academy of Art and Science and recipient of numerous awards such as the Arthur Armitage Distinguished Alumni Award of Rutgers University School of Law and Distinguished Alumni Award of Vassar College 2023.

Mr. Granoff is the award-winning screenwriter of *The Constitution: The Document that Gave Birth to a Nation*, and a prolific scholar and author. Featured guest and expert commentator on hundreds of radio and television programs, and testified as an expert in the US Congress, Parliaments of the UK and Canada, and at the United Nations numerous times.

He serves on numerous boards, such as the Jane Goodall Institute and Parliamentarians for Nuclear Nonproliferation and Disarmament. Nominated for the Nobel Peace Prize in 2014.

Navy Commander Leigha Groves

Deputy Staff Judge Advocate, U.S. Strategic Command



CDR Leigha Groves has served as a National Security Law Attorney at U.S. Strategic Command since July 2022, and as the Deputy Staff Judge Advocate since September 2023. She is from northern California and has a B.A. from UC Davis (2022), a J.D. from the University of Arizona Rogers College of Law (2009), and a M.A. in Defense and Strategic Studies from the Naval War College (Fleet Seminar/Graduate Degree Program) (2021).

CDR Groves' operational tours include assignment to the Combined Joint Interagency Task Force 435 at Bagram Air Field, Afghanistan, temporary assignment as Command Judge Advocate aboard the USS Bonhomme Richard (LHD 6) in Sasebo, Japan, and Command Judge Advocate aboard the USS Carl Vinson (CVN 70) in Bremerton, Washington and Coronado, California.

CDR Groves served ashore at naval Legal Service Officer Northwest in Everett, Washington; Region Legal Service Office (RLSO) Japan in Yokosuka, Japan; Chief of Naval Personnel/Deputy Chief of Naval Operations (OPNAV/N1) in Arlington, Virginia; and RLSO Southwest in San Diego, California.

CDR Groves is entitled to wear the Meritorious Service Medal (two awards), the Navy and Marine Corps Commendation Medal (three awards), the Army Commendation Medal, and the Navy and Marine Corps Achievement Medal (two awards).

Prof. Oona Hathaway

Gerard C. and Bernice Latrobe Smith, Professor of International Law, Yale Law School



Oona A. Hathaway is the Gerard C. and Bernice Latrobe Smith Professor of International Law at Yale Law School, Professor of International Law and Area Studies at the Yale University MacMillan Center, Professor of the Yale University Department of Political Science, and Director of the Yale Law School Center for Global Legal Challenges. She has been a member of the Advisory Committee on International Law for the Legal Adviser at the United States Department of State since 2005. In 2014-15, she took leave to serve as Special Counsel to the General Counsel at the U.S. Department of Defense, where she was awarded the Office of the Secretary of Defense Award for Excellence. She is the Director of the annual Yale Cyber Leadership Forum and a member of the Council on Foreign Relations. She has published more than forty law review articles, and [The Internationalists: How a Radical Plan to Outlaw War Remade the World](#) (with Scott Shapiro, 2017). She is also Executive Editor of and regular author at *Just Security*, and she writes often for popular publications such as *The Washington Post*, *New York Times*, *The Atlantic*, and *Foreign Affairs*.

Professor Hathaway can also be found on social media on Twitter @oonahathaway and on [Mastodon](#).

Hon. Khrystyna Hayovyshyn

Deputy Permanent Representative

Permanent Mission of Ukraine to the United Nations in New York



Khrystyna Hayovyshyn is the Deputy Permanent Representative at the Permanent Mission of Ukraine to the United Nations in New York. She is tasked with ensuring the participation of the delegation of Ukraine in meetings of the UN General Assembly and the UN Security Council. Also, she coordinates the implementation of Ukraine's initiatives within the framework of the 11th ESS of the UN General Assembly.

David S. Jonas

Partner, Fluet

Former Nuclear Nonproliferation Planner, Joint Chiefs of Staff

LtCol, USMC (Ret.)

Adjunct Professor at Georgetown and George Washington Law Schools

David S. Jonas is a Partner at Fluet where his practice includes corporate transactions, employment law, government contracts, trial and appellate litigation, international law, administrative/regulatory compliance, investigations and military law. He has extensive experience in national security issues and is recognized as one of a handful of experts worldwide in nuclear nonproliferation law. He was a career member of the Senior Executive Service and served as General Counsel of the National Nuclear Security Administration (NNSA) where he negotiated numerous multilateral and bilateral international agreements to include the U.S. – India Civil Nuclear Agreement. He also served as General Counsel of the Defense Nuclear Facilities Safety Board.

Prior to his civilian service, he was a career Marine Corps officer where he held a wide variety of command and staff billets. He served as nuclear nonproliferation planner for the Joint Chiefs of Staff and has worked extensively with the International Atomic Energy Agency, the Conference on Disarmament, and the United Nations. He is one of the only judge advocates to have commanded two units, including a company in an infantry regiment, the 5th Marines. He argued the case of *Davis v. United States*, 512, U.S. 452 (1994) at the U.S. Supreme Court becoming the first judge advocate in the history of the Army, Navy, Marine Corps and Air Force to do so. He received the U.S. Court of Appeals for the Armed Forces Award for Excellence in Legal Writing and was selected as the Outstanding Career Judge Advocate in the Marine Corps. He concluded his military service as a lieutenant colonel.

He is currently an adjunct professor at Georgetown University Law Center and George Washington (GW) University Law School and has also taught at the U.S. Naval War College. He teaches Nuclear Nonproliferation Law & Policy and was a pioneer in developing the academic coursework in this discipline. He frequently speaks, consults, and is widely published on this topic. He was recognized as Distinguished Adjunct Professor of Law at GW. He serves on the Board of Directors of the Young Marines as General Counsel. He also serves on the American Bar Association Rule of Law Initiative and previously served on the ABA Advisory Committee on Law and National Security. He currently serves on the Advisory Committee of Penn Law School's Center for Ethics and the Rule of Law.

Mr. Jonas holds a B.A. from Denison University, a J.D. from Wake Forest University School of Law, an LL.M. from the U.S. Army Judge Advocate Generals School, an LL.M. from Georgetown University Law Center and an M.A. from the U.S. Naval War College.

Major Kenneth “Daniel” Jones

Judge Advocate, Office of the Judge Advocate General, U.S. Army



Major Jones is a General Law Attorney in the Office of the Judge Advocate General, U.S. Army, Pentagon. Major Jones commissioned into the Judge Advocate General's Corps in 2011. His previous assignments include serving as a National Security Law Attorney at U.S. Strategic Command; Brigade Judge Advocate – 116th Military Intelligence Brigade (Aerial Intelligence), U.S. Army Intelligence and Security Command; Senior Trial Counsel, Fort Leonard Wood and Maneuver Support Center of Excellence; Special Assistant United States Attorney, Fort Bliss, Texas; Command Judge Advocate – 3rd Brigade Combat Team (Forward); Trial Counsel, 3rd Brigade Combat Team, 1st Armored Division.

Major Jones deployed to Afghanistan, where he served as the Command Judge Advocate to an infantry unit operating under U.S. Forces Afghanistan and the NATO International Security Assistance Force. Prior to joining the Army, Major Jones interned in the Office of Presidential Personnel at The White House, completed an externship for a Judge on the U.S. Court of Appeals for the Sixth Circuit, and clerked for two law firms focusing on litigation and corporate law.

Major Jones obtained his B.A. with distinction from Rhodes College in Memphis, Tennessee and his J.D. from Vanderbilt University Law School, where he was a member of the Dean's List and the Journal of Transnational Law. He also holds an L.L.M. in Military Law, with a national security concentration, from The Judge Advocate General's Legal Center and School. He is currently pursuing a Master of Science in Strategic Intelligence from the National Intelligence University. MAJ Jones has published and spoken on nuclear weapons and the law.

David Koplou

Professor, Georgetown University Law Center

Former Special Counsel for Arms Control to the General Counsel of the U.S. Department of Defense



David A. Koplou is the Scott K. Ginsberg Professor of Law at the Georgetown University Law Center in Washington, D.C., where he has been on the faculty since 1981. His primary fields for teaching and scholarship involve public international law and national security law, with a particular emphasis upon arms control, non-proliferation, outer space, and counter-terrorism.

He has published five books and numerous law review articles regarding treaty negotiation, verification, and implementation, and regarding the intersection between international legal standards and U.S. constitutional law.

He has served in government as Attorney-Advisor, and as Special Assistant to the Director, at the U.S. Arms Control and Disarmament Agency from 1978 to 1981; as Deputy General Counsel for International Affairs at the U.S. Department of Defense from 1997 to 1999; as Special Counsel for Arms Control to the General Counsel of the Department of Defense from 2009 to 2011; and as a consultant to NASA 2017-19.

He is a graduate of Harvard College and Yale Law School and was a Rhodes Scholar.

His webpage at Georgetown Law is: <http://www.law.georgetown.edu/faculty/koplou-david-a.cfm>

Edward K. Lenci

Partner, Hinshaw & Culbertson LLP (NYC)

Founder and former Co-Chair, Ukraine Task Force of the New York State Bar Association



Edward K. “Ed” Lenci is widely recognized as the leader of the U.S. legal profession’s rapid response to the invasion of Ukraine from its very first day. During his term as chair of the International Section of the New York State Bar Association (NYSBA Int’l), Ed founded, and for six months led, the acclaimed Ukraine Task Force, comprised of NYSBA Int’l members, including the leaders of the chairs of its chapters in Europe, representatives of the Ukrainian Bar Association (Асоціація правників України), the American Bar Association, the New York City Bar, the D.C. Bar, the Ukrainian-American Bar Association, foreign bar associations, and human rights organizations in the U.S. and abroad. The highly-successful Ukraine

Immigration Task Force grew out the Ukraine Task Force. Ed considers the Ukraine Task Force the best accomplishment by far of his life.

Ed is a partner in the New York office of Hinshaw & Culbertson LLP. He practices in the areas of U.S.-based and international arbitrations, commercial disputes, reinsurance disputes, appeals, and the defense of businesses sued in consumer class action lawsuits. He is the long-time chair of the Reinsurance Section of Hinshaw’s global Insurance Services Practice Group.

Richard C. Lewis

President, New York State Bar Association

Special Counsel, Hinman, Howard & Kattell



Richard C. Lewis maintains a general legal practice at Hinman, Howard & Kattell where he focuses on litigation and business law. Dick devotes significant time to the formation of business entities and advising clients regarding all aspects of business activities. He is also involved in estate planning, preparation of wills, real estate, construction matters, and other personal matters for individual clients and families. Dick is also a veteran of New York’s courts. His experience includes litigating commercial disputes in Supreme Court, and handling matrimonial and family court matters. He is also involved in Municipal Law representing municipalities and claimants.

Dick is presently the President of the New York State Bar Association. He has served on the House of Delegates for a number of years representing Broome County and the 6th Judicial District and has served as the Vice-President of the 6th Judicial District. He has chaired or been an active member of numerous task forces and committees.

Dick is very active in the community. Currently, Mr. Lewis serves on the Editorial Board of The Reporter (newspaper), past Chair, sits on the Executive Committee of the Jewish Federation of Greater Binghamton, serves on the Endowment Committee of the Jewish Federation of Greater Binghamton, is a Member of the Broome County Bar Association (past President and recipient of the Ted Gallando Award) and has served as Delegate to the New York State Bar Association House of Delegates Representing the 6th Judicial District and presently serves as Vice President of the New York State Bar Association representing the 6th Judicial District.

In addition, Dick has served as a Director and Vice President of the Broome Sports Foundation, and served as a Chair of both the Grievance Committee and Ethics Committee of the Broome County Bar Association as well

as Chair of the Broome County Bar Association Endowment Committee. He is a former Trustee of Hillel Academy of Broome County and served as its President from 2002-2012; is a former Member of the New York State Bar Association Committee on Professional Discipline, and is a Member of the Municipal and Government Law Section. He is past President of the Board of Trustees of Temple Israel, past Chair of the Broome County Arena Board; past President of Broome Legal Assistance Corporation; a past Director of Children's Home of Wyoming Conference; and past Director of SOS Shelter, Inc., member of the Northern District of New York Federal Court Bar Association, and past member of the Executive Committee of the Jewish Federation of Greater Binghamton.

Dr. Hans Liwång

Associate Professor, Deputy Head of Department of Systems Science for Defence and Security, Swedish Defence University



Hans Liwång is an Associate Professor in Systems Science for Defence and Security and Deputy Head of Department of Systems Science for Defence and Security at the Swedish Defence University in Stockholm. Liwång is also a Researcher at the KTH Centre for Naval Architecture at KTH – Royal Institute of Technology.

Liwång's research interest focus on systems for defence and security consisting of interacting technical and social components. The research approach draws on interconnected fields dealing with risk and risk-based decision support in high risk activity in general but also more specifically on how to create maritime safety and security. The research therefore includes Sociotechnical System Perspectives, Risk Management, Security and Protection, Threat analysis, Sustainability, Risk Governance, Risk and Communication. Liwång teaches courses for civilian and military students and experts related to analysis, decision making, risk management, and design.

Background

Docent in Military-Technology at the Swedish Defence University and Ph.D. in Shipping and Marine Technology from Chalmers University of Technology and also holds a M.Sc. degree in Naval Architecture from the Royal Institute of Technology. More than twenty years of experience as an engineer and lecturer at the Swedish Defence University, the Royal Institute of Technology, Chalmers University of Technology and the Defence Materiel Administration.

Prof. Charles J. Moxley, Jr.

Professor (Adj.), Fordham Law School
Principal, Moxley ADR LLC



Charles J. Moxley, Jr. teaches nuclear weapons law at Fordham Law School and has written about international law restraints on the threat and use of nuclear weapons for over twenty years, starting with his 2000 book, *Nuclear Weapons and International Law in the Post Cold War World*. The second edition of Moxley's book—*Nuclear Weapons and International Law: Existential Risks of Nuclear War and Deterrence through a Legal Lens* (Rowman and Littlefield Publishers—Hamilton Books imprint) will be released in February 2024. See <https://static1.squarespace.com/static/603410a4be1db058065ce8d4/t/6548141469af731e25fef39/1699222548762/LCNP+posting+re+upcoming+publication+of+upcoming+treatise+on+nuclear+weapons+law+11+5+23.pdf>.

Moxley is co-author of the 2011 article, Nuclear Weapons and Compliance with International Humanitarian Law and the Nuclear Non-Proliferation Treaty, in the Fordham International Law Journal, and of other journal articles on the subject. He was faculty lead for the 2020 Conference, Nuclear Weapons and International Law, the proceedings of which were published as a Special Issue of the Fordham International Law Journal. He is faculty lead of the 2023 Conference, Nuclear Weapons and International Law, The Renewed Imperative in Light of Russia's invasion of Ukraine, the proceedings of which will be published by the Georgetown Journal of International Law.

Moxley received his law degree from Columbia Law School, where he concentrated in international law and was Managing Editor of the Columbia Journal of Transnational Law. He received an M.A. in Russian Area Studies and a B.A. in political science from Fordham University.

Following his graduation from law school, Moxley served as law clerk for a United States District Judge in the Southern District of New York and started his practice with the international law firm, Davis Polk & Wardwell, following which he was affiliated with a number of boutique litigation firms before starting his own firm, MoxleyADR LLC, specializing in arbitration and mediation. He also serves as Distinguished ADR Practitioner in Residence at Benjamin N. Cardozo School of Law.

A long-time litigator and arbitrator, Moxley's approach to addressing issues as to the lawfulness of nuclear weapons threat and use is to subject such issues to the same depth of legal and factual analysis as lawyers, judges, and arbitrators apply to complex securities and commercial disputes in federal and other courts and arbitrations throughout the country.

Gerard F. Powers

Faculty, University of Notre Dame, Kroc Institute for International Peace Studies
Director, Catholic Peacebuilding Studies



Since 2004, Gerard Powers has been director of Catholic peacebuilding studies at the Kroc Institute for International Peace Studies, Keough School of Global Affairs, University of Notre Dame. He also coordinates the Catholic Peacebuilding Network (CPN) and its [Project on Revitalizing Catholic Engagement on Nuclear Disarmament](#). He has worked on ethics and nuclear policy since 1987. CPN includes twenty-two university institutes, episcopal conferences, development agencies, and independent lay organizations. From 1998-2004, he was director of the Office of International Justice and Peace of the U.S. Conference of Catholic Bishops, and from 1987-1998 was a policy advisor in that office. He is co-editor (with C. Montevecchio) of *Catholic Peacebuilding and Extractives: Integral Peace, Development, and Ecology* (Routledge, 2022), (with R. Schreiter & R. S. Appleby) *Peacebuilding: Catholic Theology, Ethics and Praxis* (2010), (with D. Philpott) *Strategies of Peace* (2010), and (with D. Christiansen, S.J., and R. Hennemeyer), *Peacemaking: Moral and Policy Challenges for a New World* (1994).

Colonel Theodore T. Richard

United States Air Force Judge Advocate, Staff Judge Advocate at Space Operations Command



Lt. Col. Ted Richard is a judge advocate in the United States Air Force and is currently assigned as the Deputy Staff Judge Advocate at U.S. Strategic Command. Previously he has served as an military operational law attorney and staff judge advocate. He earned his Juris Doctorate at the University of Wisconsin and a Masters of Law at George Washington University. He received the 2011 American Bar Association's Standing Committee on Armed Forces Law Keith E. Nelson Distinguished Service Award for his article, [Reconsidering the Letter of Marque: Utilizing Private Security Providers Against Piracy](#). His views are not intended to reflect official positions of any component of the US Government.

Alan Robock

Distinguished Professor, Department of Environmental Sciences, Rutgers University



Dr. Alan Robock is a Distinguished Professor of climate science in the Department of Environmental Sciences at Rutgers University. He graduated from the University of Wisconsin, Madison, in 1970 with a B.A. in Meteorology, and from the Massachusetts Institute of Technology with an S.M. in 1974 and Ph.D. in 1977, both in Meteorology. Before graduate school, he served as a Peace Corps Volunteer in the Philippines. He was a professor at the University of Maryland, 1977-1997, and the State Climatologist of Maryland, 1991-1997, before coming to Rutgers in 1998. Prof. Robock has published more than 500 articles on his research in the area of climate change, including more than 285 peer-reviewed papers. His areas of expertise include climate intervention (also called geoengineering), climatic effects of nuclear war, and effects of volcanic eruptions on climate. He serves as Editor of Reviews of

Geophysics, the most highly-cited journal in the Earth Sciences. His honors include being a Fellow of the American Geophysical Union, the American Meteorological Society (AMS), and the American Association for the Advancement of Science, and a recipient of the AMS Jule Charney Medal. Prof. Robock was a Lead Author of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (awarded the Nobel Peace Prize in 2007). In 2017 the International Campaign to Abolish Nuclear Weapons was awarded the Nobel Peace Prize for "for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons and for its groundbreaking efforts to achieve a treaty-based prohibition of such weapons" based partly on the work of Prof. Robock. In 2022, Prof. Robock was a winner of the Future of Life Award, "For reducing the risk of nuclear war by developing and popularizing the science of nuclear winter."

James Scouras

Senior Scholar, Johns Hopkins University, Applied Physics Laboratory

James Scouras is a senior scholar at the Johns Hopkins University Applied Physics Laboratory and the former chief scientist of the Defense Threat Reduction Agency's Advanced Systems and Concepts Office. His research focuses on assessment and management of global catastrophic risks, with emphasis on nuclear war and the evaluation of policies intended to reduce the risk of its occurrence. Previously, he was program director for risk analysis at the Homeland Security Institute, held research positions at the Institute for Defense Analyses and the RAND Corporation, and lectured on nuclear policy in the University of Maryland's General Honors Program. Among his publications is the book *A New Nuclear Century: Strategic Stability and Arms Control*, coauthored with Stephen Cimbala. Dr. Scouras earned his PhD in physics from the University of Maryland.

Seth Shelden

UN Liaison, International Campaign to Abolish Nuclear Weapons
Partner, Farkas & Neurman; Adjunct Professor, CUNY School of Law



Seth Shelden is the United Nations Liaison for the International Campaign to Abolish Nuclear Weapons (ICAN), the 2017 Nobel Peace Prize-winning coalition working to prohibit and eliminate nuclear weapons. In this capacity, he assists governments in signing and ratifying the Treaty on the Prohibition of Nuclear Weapons, and he represents ICAN in promoting universalization and implementation of the treaty.

Mr. Shelden has a background in law. After nearly seven years at the international law firm of Skadden, Arps, Slate, Meagher & Flom, today he is a partner at the law firm of Farkas & Neurman and an Adjunct Professor at the City University of New York (CUNY) School of Law. In the past, Mr. Shelden has held visiting professorships at the Cardozo School of Law (where he was also an Adjunct Professor), the University of Latvia (as a Fulbright Scholar), and Toyo University (as a Fulbright Specialist). He also serves on the Board of Directors for the Lawyers Committee on Nuclear Policy.

Mr. Shelden has a J.D. degree from the University of California, Berkeley, School of Law and a B.A. degree, with Honors and Distinction, from the University of North Carolina at Chapel Hill, as well as a certificate in International Nuclear Safeguards Policy from the Middlebury Institute of International Studies.

Mary L. Smith

President, American Bar Association
Vice Chair, VENG Group



Mary Smith is President of the American Bar Association and is the first Native American woman in this role.

Mary is an independent board member and former CEO of a \$6 billion national healthcare organization, the Indian Health Service. She currently serves on the board of PTC Therapeutics, Inc. (NASDAQ: PTCT), a global biopharmaceutical company and on the board of HAI Group, a leading member-owned insurance company for the affordable housing industry. She is also vice chair of the VENG Group, a national consulting firm.

Mary has served at the highest levels of government, both at the federal and state level. She served on the senior team of the Civil Division at the United States Department of Justice and was general counsel at the Illinois Department of Insurance. Earlier in her career, she served in the White House as associate counsel to the president and associate director of policy planning.

In her private sector experience, Mary served in a senior role at Tyco International (US) Inc., a \$40 billion public company, where she managed a \$60 million budget. She also served as special counsel & estate trust officer at the Office of Special Deputy Receiver; a partner in the Chicago office of Schoeman, Updike & Kaufman, a women-owned firm; and an attorney at Skadden, Arps, Slate, Meagher & Flom LLP in Washington, D.C., where she specialized in governmental investigations and securities class actions.

In bar activities, Mary is a past ABA secretary. She was the first Native American to serve as one of 13 commissioners on the Commission on Women in the Profession. She has held leadership positions in both the

ABA Section of Litigation and the ABA Section of Civil Rights and Social Justice. She also served as an ABA representative to the United Nations Economic and Social Council.

Mary has also served in leadership roles in state and local bars. She served on the executive council of the National Conference of Bar Presidents and is a past president of the National Native American Bar Association. She was co-chair of the Litigation Section in the District of Columbia Bar Association and also served on the board of directors of the Chicago Bar Association.

In her civic activities, Mary is a member of the Council on Foreign Relations, the Economic Club of Chicago, the International Women's Forum, and the National Association of Corporate Directors.

She founded and serves as president and chair of a foundation named after her mother and grandmother, respectively, the Caroline and Ora Smith Foundation, to train Native American girls in science, technology, engineering, and mathematics (STEM) (www.carolineorasmithfoundation.org).

Mary is the recipient of numerous awards and recognitions. In 2023, Chicago United selected her as a Business Leader of Color, and she was the recipient of the ABA Government and Public Sector Lawyers Division's Nelson award, which recognizes exceptional service by a public sector lawyer. She also was selected as a 2023 Director to Watch by Directors & Board magazine. In 2022, she received the Abner J. Mikva Award from the American Constitution Society Chicago Lawyer Chapter. She was also selected to Crain's Chicago Business' Notable Women in STEM in 2020 and Crain's Custom Media's "Chicago's Notable Women Lawyers" in 2018. In 2017, she received a Special Recognition Award from the National Congress of American Indians for her work at the helm of the Indian Health Service. In 2015, she was recognized on the Lawyers of Color Fourth Annual Power List. In 2012, she was a recipient of the ABA Commission on Racial and Ethnic Diversity in the Profession's Spirit of Excellence Award. At the conclusion of her time in the White House in 2001, she received the U.S. Office of Personnel Management Director's Citation for Exemplary Public Service.

Mary graduated from the University of Chicago School of Law, cum laude, and received a B.S. in mathematics and computer science, magna cum laude, from Loyola University Chicago. She served on the Law Review and clerked for the Hon. R. Lanier Anderson III in the Eleventh Circuit Court of Appeals.

Dr. Shane Smith

Director, Air Force Institute for National Security Studies, U.S. Air Force Academy
Associate Professor, Department of Political Sciences, U.S. Air Force Academy

Dr. Shane Smith is Director of the Air Force Institute for National Security Studies, located at the U.S. Air Force Academy, where he is also an Associate Professor of Political Science. Prior to joining the U.S. Air Force Academy, Dr. Smith was a Senior Research Fellow at the National Defense University's Center for the Study of Weapons of Mass Destruction. He has served in the Office of the Security of Defense as a senior advisor for U.S. nuclear policy in East Asia and as a senior advisor at the Defense Threat Reduction Agency.

Allen S. Weiner

Senior Lecturer in Law and Director, Stanford Program in International and Comparative Law, Stanford Law School



Allen S. Weiner, JD '89, is an international legal scholar whose research and teaching focus primarily on the fields of international security and international conflict resolution. He also studies the challenges of online misinformation and disinformation. In the international security realm, his work spans such issues as international law and the response to contemporary security threats; the relationship between international and domestic law in the context of armed conflict; the law of war (international humanitarian law), including its application to nuclear targeting doctrine; just war theory; and international criminal law (including transitional justice). In the realm of international conflict resolution, his highly multidisciplinary work analyzes the barriers to resolving intractable political conflicts, with a particular focus on the Israeli-Palestinian conflict. His work on misinformation and disinformation includes a focus on the potential harmful uses of social media in conflict settings, including war zones. Weiner's scholarship is deeply informed by experience; he practiced international law in the U.S. Department of State for more than a decade advising government policymakers, negotiating international agreements, and representing the United States in litigation before the International Criminal Tribunal for the former Yugoslavia, the International Court of Justice, and the Iran-United States Claims Tribunal.

Senior Lecturer Weiner is director of the Stanford Program in International and Comparative Law, director of the Stanford Humanitarian Program, and director of the Stanford Center on International Conflict and Negotiation. Before joining the Stanford Law School faculty in 2003, he served as legal counselor at the U.S. Embassy in The Hague and attorney adviser in the Office of the Legal Adviser of the U.S. Department of State in Washington, DC. He clerked for Judge John Steadman of the District of Columbia Court of Appeals. He earned his J.D. degree at Stanford Law School and his A.B. degree at Harvard College.

Jules Zacher

Board Chair, Council for a Livable World; Executive Board Member, the Center for Ethics and the Rule of Law at the Annenberg Public Policy Center at the University of Pennsylvania



Jules Zacher has had a lifelong interest in national security issues, with a particular focus on the abolition of nuclear weapons. Towards that end, he has litigated numerous FOIA and FACA cases. Two memorable cases include obtaining documents regarding the President's inability to communicate with 50 warheads at an ICBM missile base, as well as documents regarding WMD's in the runup to the war in Iraq. He is currently the Chairman of the Council for a Livable World, on the Executive Board of the Center for Ethics and the Rule of Law at the University of Pennsylvania Annenberg Public Policy Center, a Director of the Lawyers Committee on Nuclear Policy, and founder of Speaking Truth to Power, an organization devoted to obtaining documents dealing with nuclear weapons.

Jules Zacher is also an experienced litigator representing persons in federal and state courts who have contracted Legionnaires' disease. He has written extensively about how Legionnaires' disease can be contracted, means to prevent the disease, and the legal implications of not doing so. He began his career with one of the pre-eminent plaintiff's firms in the country, and then formed his own firm, where he currently practices in Philadelphia. Mr. Zacher took time off from practicing law by creating and operating a software firm headquartered in Paris, with the intended market being East Europe. He attended the University of Pittsburgh for his undergraduate degree, Temple University for a Master of Arts in Economics, and Temple University for his Juris Doctor degree. He lives with his wife in Philadelphia and is an avid court tennis player.

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GENERAL BY FACULTY MEMBERS

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SETH SELDEN

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WRITTEN MATERIALS AND PRESENTATIONS

Panel 1: Facts and Risks Associated with Nuclear Weapons Highlighted by Russia's Threats to Use Nuclear Weapons in Ukraine

- PowerPoint Presentation by James Scouras: Thinking about nuclear risks.

Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

- Written Materials by Hans Liwång: The possible use of nuclear weapons push the envelope of military risk management.

Panel 5: Strategy Session: Things Lawyers and Others Can Do to Get Involved and Make a Difference in Addressing Nuclear Weapons Risks

- PowerPoint Presentation by Denise Duffield: Bringing communities together to abolish nuclear weapons.
- PowerPoint Presentation by Jules Zacher.
- Written materials by Jules Zacher: Artificial Intelligence and the Decision to Launch the U.S. Nuclear Arsenal: Help or Hindrance
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Thinking About Nuclear Risks

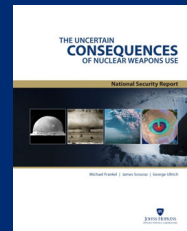
James Scouras

November 8, 2023

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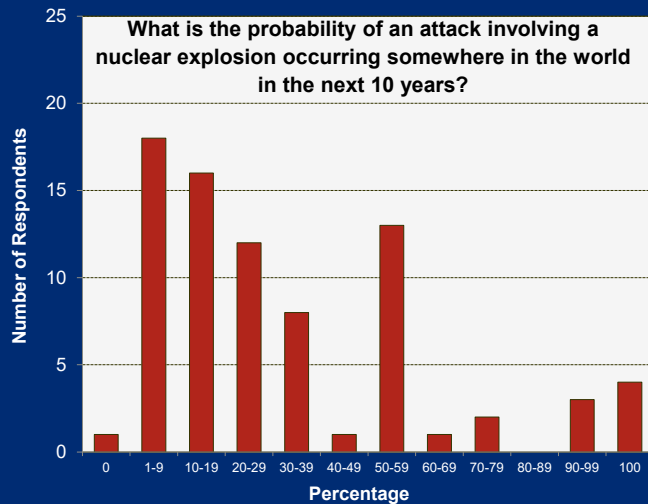
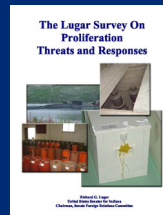
The Uncertain Consequences of Nuclear Weapons Use

- A considerable body of knowledge on the consequences of nuclear weapons use has been accumulated through an extensive, sustained, and costly national investment in testing and analysis
- However, even when consideration is restricted to physical effects—where our knowledge is greatest—there remain very large uncertainties
- Moreover, even more difficult-to-quantify nonphysical consequences have been inadequately studied
- **As a result, the physical consequences of a nuclear war tend to have been underestimated and a full-spectrum consequence assessment is beyond anyone's grasp now or in the foreseeable future**



2

The Lugar Survey of Proliferation Threats and Responses

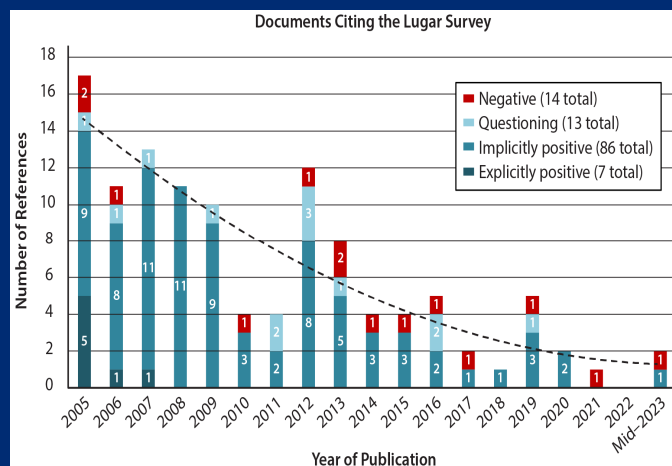


- The Lugar Survey was an effort to raise awareness on nonproliferation issues
- Opinions span the spectrum of possibility
- It fell far short of best elicitation practices
 - Survey a representative sample of true experts
 - Capture experts' reasoning and uncertainties
 - Provide a knowledge repository
- Reasons for experts' divergent views must be understood to establish sound policy

3

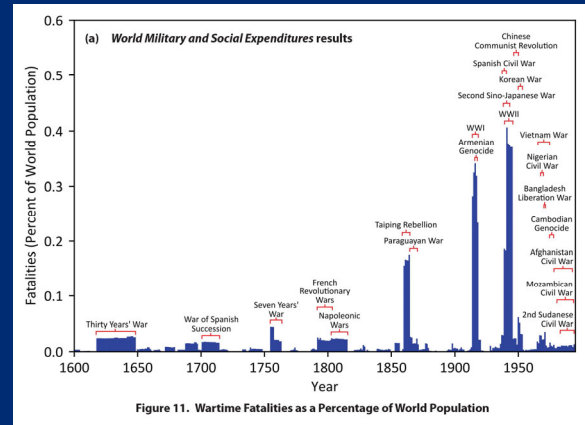
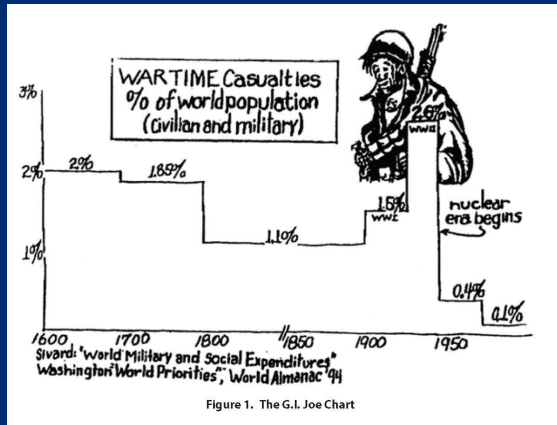
Uses and Abuses of the Lugar Survey

- Over 100 documents cite the Lugar Survey
- The great majority of these report Lugar Survey results uncritically
- Results cited are often cherry-picked consistent with authors' beliefs
- Critical citations focus on expert biases
- Lack of rigor, decline over time of citations, recent world events, and the need to prioritize extracting insights rather than estimates of probabilities suggests it may be time for a new study



4

Wartime Fatalities in the Nuclear Era



Decisions vital to international security must be based on rigorous and traceable analysis.

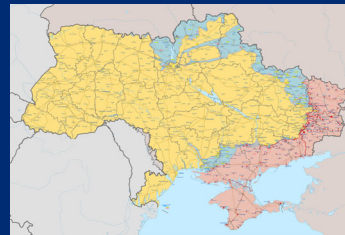
5

Whatever Happened to Nuclear Winter?

- Nuclear winter is potentially among the most severe consequences of nuclear war
- Initial widespread interest waned because of a combination of factors
 - The end of the Cold War
 - The impracticality of policy solutions
 - The problematic mixture of science and politics
 - Difficulties in resolving scientific uncertainties
- With increased proliferation and increasing concern with the nuclear threats from Russia and China, **the science and policy implications of nuclear winter need to be addressed anew**

6

Ukraine



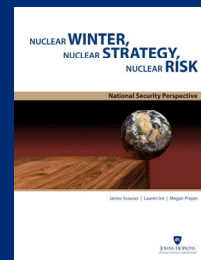
- Post-Cold War complacency about all things nuclear was unwarranted
- Both sides misjudged how the invasion would go
- Much of what has happened since is consistent with deterrence theory
- Deterrence theory also suggests potential enhancements to deterrence
 - Restoring a semblance of balance in non-strategic nuclear weapons
 - Capability and credibly holding Russia's political and military leaders at risk
- Russia's red lines are speculative
- NATO's strategy for responding to limited Russian nuclear use is worrisome



7

Nuclear Winter, Nuclear Strategy, Nuclear Risk

- We strive to explain the long-standing practice of intentionally ignoring the potential for nuclear winter in the formulation of US nuclear strategy
- **Our analysis reveals two primary reasons for ignoring nuclear winter in US nuclear strategy**
 - **First, any single nuclear state can only do so much by itself to reduce nuclear winter's consequences**
 - **The second, largely unspoken, reason is that the side believed to be more concerned about the risk of nuclear winter may be at a disadvantage in nuclear crisis management, deterrence, and warfighting**
- Notwithstanding these reasons, we argue that prudence dictates we revisit current nuclear strategy



8

Final thoughts

- All attempts to escape from nuclear deterrence have failed: Baruch Plan, Strategic Defense Initiative, Global Zero
- It appears that nuclear deterrence will be with us for the foreseeable future
- Risk is inherent in deterrence
- **The challenge is to develop an effective, minimally risky, ethical, legal deterrent strategy for the emerging tri-polar nuclear world**



9

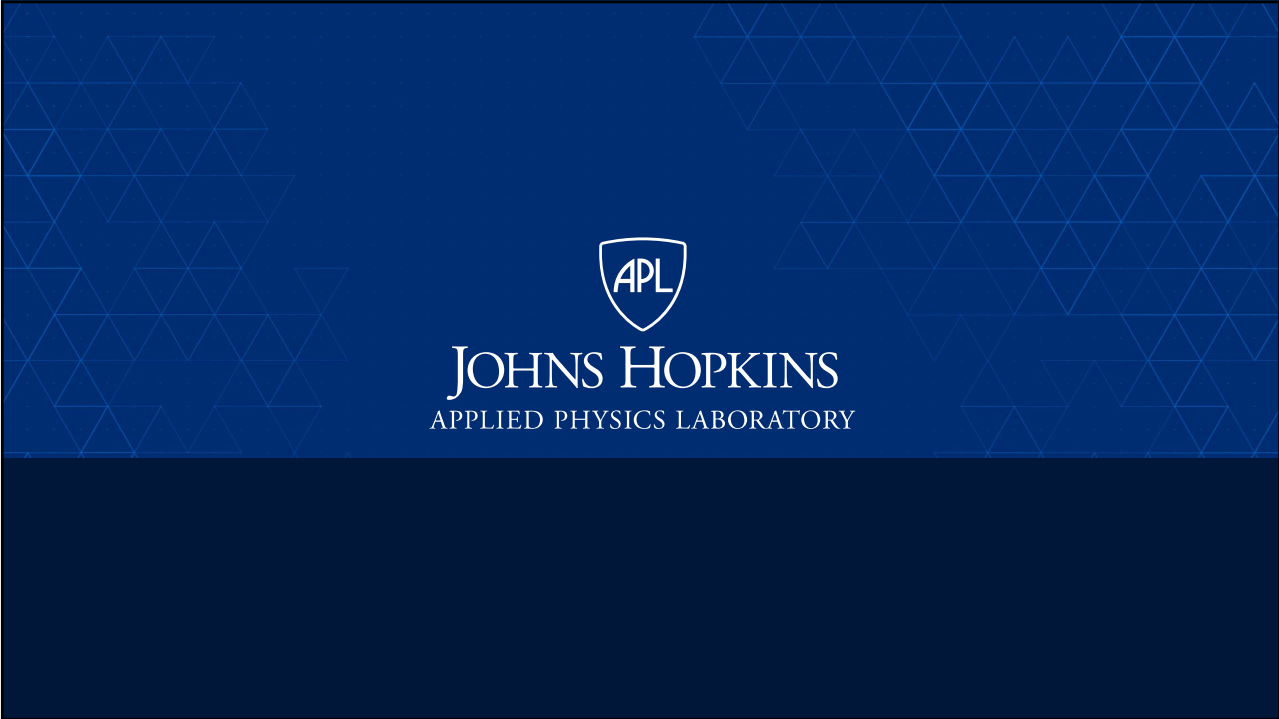
Thank you

James.Scouras@jhuapl.edu

<http://www.jhuapl.edu/work/publications>



10



Liwång. Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

Complementary written material to

The International Section of the New York State Bar Association conference NUCLEAR WEAPONS AND INTERNATIONAL LAW, The Renewed Imperative in Light of the Ukraine War

Wednesday, November 8, 2023

Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

The possible use of nuclear weapons push the envelope of military risk management

Dr. Hans Liwång, Associate Professor, Swedish Defence University, Stockholm, Sweden

Introduction

I want to express my gratitude towards the New York State Bar Association, especially Professor Charlie Moxley, for allowing me to contribute to this important subject.

Here I will first briefly describe my perspective on the role of risk analysis and risk management in military decision making. Secondly, I will draw an overview of risk management in general and military risk management in specific. Lastly, I will discuss the role of risk analysis in the application of international law to nuclear weapons use.

My research and teaching related to the systemic interactions between technology, military organizations, military doctrine and society. I am not a lawyer, but my research also considers laws, ethics and values as an important expression of the society. It is all these aspects together that creates military capability (Liwång et al., 2023).

Military risk management

I define Risk management as the systematic application of management policies, procedures, and practices to the task of analyzing, evaluating, and controlling risk. As such risk analysis deals with assessing how hazards, threats, and actions lead to different consequences. The likelihood of these different consequences is in focus.

Risk management is often defined by the following activities:

- A. Risk analysis including scope or problem definition, threat and hazard identification and risk estimation.
- B. Risk evaluation including risk tolerability decisions and analysis of risk reduction options. Often looping back to the risk analysis for also looking into identified risk reduction options.
- C. Risk reduction and control including decision-making, implementation, and monitoring.

Liwång. Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

Risk management is used in many situations of military decision-making. Examples include intelligence analysis, operational planning and legal considerations. Risk management is scalable and contextual, i.e., different decisions require different considerations, inputs, assumptions and simplifications. The possible and typical applications ranges from situations where the scenario to be assessed is well defined and there are known causes and effects between hazards, measures, and risks to situations where there are large uncertainties on the future scenario and on how different measures will affect the risk situation. The uncertainties are especially challenging when your decisions will interact with others, for example an enemy or threat.

The assumptions behind military risk analysis are not explicitly stated in the doctrines, but from the definition of risk and the process described it must be assumed that military risk-based approaches are based on that the concept of probability used is an objective representation of the frequency of the studied event and that there is a linear relationship between the consequences studied and their utility assignments. This also means that behind the risk management is an assumption about systematic and or rational decision-making.

Military risk management often deals with situations ranging from well-defined technical systems such as the pneumatic system in Figure 1.a to an operational, but limited, group risk decision as illustrated in Figure 1.b.

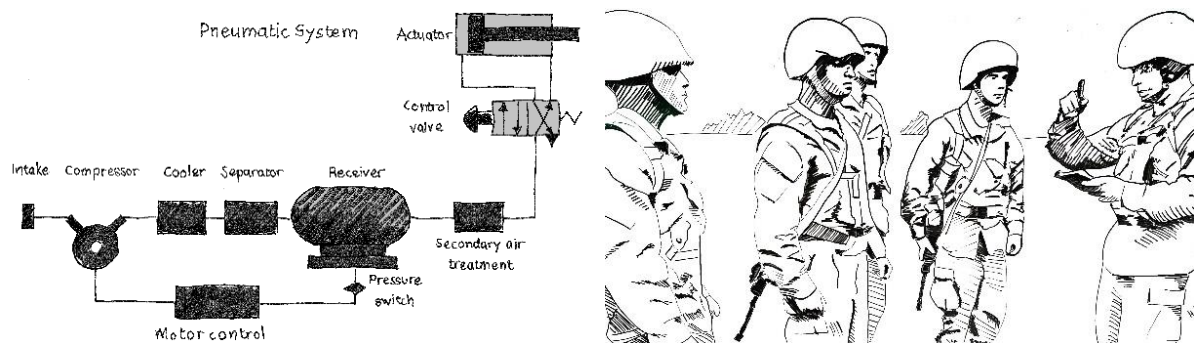


Figure 1. Two different risk decision situations. Left Figure 1.a with a pneumatic system and to the right Figure 1.b with a group risk decision. Illustrations: H. Liwång

To deal with challenges such as how to define the situation and deal with large uncertainties there is an ongoing development of a risk science, where challenges in risk management are researched (Aven, 2020), and a parallel and as important development of the scientific field of risk communication (Boholm, 2019). However, the links between such development and the development of military operational risk management are weak.

One of the major challenges I identify in my research in relation to military risk management and military decisions on risk management is how to take unlikely by relevant futures into account.

To frame these challenges in relation military operational nuclear risk decisions I have several examples:

- Example A. The decision on if to use nuclear weapons in a conflict, especially in relation to escalation of the conflict. How should a possible escalation be judged? Are long-term future effects a part of the risk picture also in legal terms?

Liwång. Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

- Example B. Long term decisions on a nation's nuclear arsenal considers that state as a functional state. It is unlikely that the state will consider a future where that state has failed. This despite the historic example of the Soviet Union shows us that it is a possible and relevant scenario in relation to long term nuclear weapons risks.
- Example C. Unintended use as mentioned by Hans Kristensen at the 2020 conference Nuclear Weapons and International Law where it was suggested that "the risk of unintended nuclear weapons use – resulting from human or equipment failure, or cyber intrusion – may be as great as, or perhaps, greater than the risk of intentional use." (Kristensen, 2020)
- Example D. The military use of civilian nuclear installations as a military weapon.

These four examples present substantial challenges for risk analysis and risk assessment. I'll come back to these examples later.

Risk management is a powerful tool, but it requires an understood and shared definition of risk and also a shared understanding of the role of the risk management in relation to the decision-making process. Also, it is important to note that the negative outcomes and their probability (risk) as well as positive outcomes and their probability (expected gain) must be estimated and assessed. Risk can therefore only provide half of the picture needed for taking a decision, and it must also be weighed against the expected gain with a certain action or operation (Bakx & Richardson, 2013). Therefore, the risk analysis is an integral part of the decision analysis and cannot be separated, in time, space or organizationally, from the decision-making process in general.

The problem definition, the scenario, has a central role in the assessment and will affect every aspect of the risk estimation. One of the most challenging aspects of the problem definition is to define and limit the time span to study. Also, there must be different problem definitions for different decision-making situations.

Only studying direct consequences, and ignoring indirect consequences, are extra troublesome for security risks analysis. This because the consequences in one incident often must be assumed to affect the future intent of the threat and therefore change the problem.

In military organizations the identification of social issues such as risk perception and cultural bias has shown to be weak (Frosdick, 1997) and the reasoning in respect to risk rationality differs at different hierarchy levels (Bakx & Richardson, 2013). Therefore, an effective application of risk analysis places nontrivial responsibilities on the analyst as well as on the decision maker. The decision maker has the responsibility to weigh different consequences against each other.

Shared risk awareness is needed throughout the organization, and it can only exist if the risk and uncertainty are assessed in a documented, structured, and standardized manner.

Therefore, there must be an interaction between the risk analysis and other decision support activities and the decision-making.

An important aspect not included in the military doctrines is how systematic errors, or biases, in the analysis affect the decisions taken, the risk culture, and the perception of security. It is, however, clear that this aspect must be thoroughly thought through and communicated throughout the organization (Liwång, 2017; Liwång et al., 2014).

Risk assessment and nuclear weapons

There are important rules of distinction, proportionality, necessity, and precaution and I will focus a bit on the principle of proportionality.

For a military legal adviser, legal assessments on proportionality will focus on the risks posed by the military operation in order to protected civilians. The assessment is weighing the military advantage or value of hitting a specific military target, with the estimated risks of collateral damage to civilians or civilian objects.

Applying this proportionality principle carries with it several difficult issues that need to be taken into consideration. One of the main issues of interest here is how a legal analysis of causality and risks is carried out.

Experience from the Balkan conflict tells us that a legal adviser who receives a plan for attack in order to review it with regard to international humanitarian law, and specifically the principle of proportionality, will do this as a qualitative assessment of risk. Once the intended target is established as a military objective the legal adviser will focus on the proportionality of the attack. This comprises three questions: What is the expected collateral damage? What is the concrete and direct military advantage of attacking the intended target? Is the expected collateral damage excessive in relation to that advantage? An attack which is expected to cause excessive damage to civilians or civilian objects must then be cancelled. (Liwång et al., 2014)

The analysis is conducted before an operation, so it is the expectation of collateral damages that is assessed. What are “expectations” built on, that is, what factors are considered? There are many possible factors: prior attacks against similar targets, intelligence regarding the intended target and the area where the target is located, the density of the civilian population in the target’s vicinity, whether the defender is deliberately exposing civilians to risk (human shields), the timing of attack, weapon accuracy, and so on. Although if it is possible to objectively assess the accuracy and destructive capacity of specific weapons, the common denominator for most of the factors mentioned is that they to a large degree build on subjective elements.

This is challenging in all situations. However, if the question relates to the use of nuclear weapons, we will hopefully never have knowledge from previous similar attacks.

If the case relates to the use of nuclear weapons, an analysis needs to understand a lot of physics to investigate the destructive effect of the weapon. However, I have even larger concerns for assessing more long-term causes on the enemy, the region, the society, the conflict, and the war.

In the end we end up with questions, which we also see in other more traditional cases: What factors do we include or exclude in the weighing of expected collateral damage and military necessity? The risk assessment needs to be limited and finite, how can we limit the understanding of the use of a nuclear weapon when it risk changing everything we know?

Liwång. Panel 3: The Role of Risk Analysis in the Application of International Law to Nuclear Weapons Use

The use of risk analysis and risk management assumes that there is a finite simplification of the reality that we can identify and analyze and that the process will then tell us something valuable about the future. However, the guidance is very limited on how to find such relevant a finite simplification of the reality for complex problems. There is here a collision between different understandings of our world. One perspective comes for the engineering world, for example nuclear power plants, where the assumption is that we understand the causality of the system and its failure modes. However, that is far from the case of the deliberate use of a nuclear weapon. These challenges are more important when analyzing risk with nuclear weapons than traditional weapons.

Conclusions

We have seen a development of risk management in relation to both large terrorist attacks and to cyber-attacks. That development has been pushing the envelop of risk analysis and risk management towards dealing with larger uncertainty and more complex problems. Looping back to my four examples in relation military operational nuclear risk decisions:

- Example A. The decision on if to use nuclear weapons in a conflict.
- Example B. A nation's nuclear arsenal if that nation fails.
- Example C. Unintended nuclear weapons use.
- Example D. The military use of civilian nuclear installations as a military weapon.

These four examples come with different and large uncertainties, all at least as challenging for a risk assessment as the large terrorist attack or cyber-attack. If we want to be able to capture such challenges, we need create and develop a shared risk understanding specifically for nuclear weapons and nuclear risks. However, here, more than ever, these aspects mean different things for different aspects of society.

A discussion on the risk related to nuclear weapon use will develop our understanding of the problem, the related risks and how identified risk relate to legal considerations.

The effects of nuclear weapons are not linear. One nuclear detonation, even if not deliberate, may completely change everything we know about a conflict. That turns the notion of a rational and systematic decision process upside down. Risk analysis and risk management can provide with some input, but it is a challenging task.

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PANEL 5 - PowerPoint Presentation by Denise Duffield:
Bringing communities together to abolish nuclear weapons.



BRINGING COMMUNITIES TOGETHER TO ABOLISH NUCLEAR WEAPONS



THE NUCLEAR THREAT TODAY

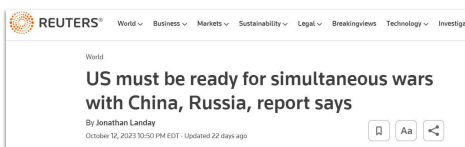
A time of unprecedented danger: It is 90 seconds to midnight



2023 Doomsday Clock Announcement

January 24, 2023

This year, the Science and Security Board of the Bulletin of the Atomic Scientists moves the hands of the Doomsday Clock forward, largely (though not exclusively) because of the mounting dangers of the war in Ukraine. The Clock now stands at 90 seconds to midnight—the closest to global catastrophe it has ever been.





CHALLENGES TO MAKING CHANGE

- ★ Many are unaware of the danger, those who are concerned don't believe there's any meaningful way for them to make a difference
- ★ Our federal representatives - whose voices and votes impact the Executive Branch - will not act on this issue unless their constituents demand it.
- ★ Most advocacy on nuclear disarmament takes place in DC, led by beltway groups who do not have grassroots networks that can be mobilized to bring visible, persistent constituent pressure to bear on their representatives.
- ★ Despite numerous intersections with health, the environment, climate change, social justice, and democracy, nuclear disarmament remains siloed from other social change movements
- ★ Nuclear disarmament activists are largely older, white, the field is small and lacks political power.
- ★ There is little funding available for nuclear disarmament advocacy - \$1 million spent on *Oppenheimer* film 3x what philanthropists spent on nuclear disarmament (and very little of that went to grassroots organizing)



WHAT IS BACK FROM THE BRINK?



Back from the Brink: Bringing Communities Together to Abolish Nuclear Weapons is a US-based grassroots coalition of individuals, organizations and elected officials working together toward a world free of nuclear weapons and advocating for common sense nuclear weapons policies to secure a safer, more just future.

We call on the United States to lead a global effort to prevent nuclear war by:

- ✓ Actively pursuing a verifiable agreement among nuclear-armed states to eliminate their nuclear arsenals
- ✓ Renouncing the option of using nuclear weapons first
- ✓ Ending the sole, unchecked authority of any U.S. President to launch a nuclear attack
- ✓ Taking U.S. nuclear weapons off hair-trigger alert
- ✓ Cancelling the plan to replace the entire U.S. nuclear arsenal with enhanced weapons

The collage features logos for numerous organizations, many of which are grouped into thematic circles:

- Health:** Health Alliance International, ihorc (International Health & Epidemiology Research Center), People's Health Movement - USA.
- Policy:** Union of Concerned Scientists, International Indian Treaty Council, Center for International Policy, Global Security Institute.
- Faith:** Pax Christi USA, Presbyterian Church (USA), Unitarian Universalist Association, Reconstructionist Rabbinical Association.
- Enviro:** Sierra Club, Friends of the Earth.
- Peace:** FAS (Federation of American Scientists), Indivisible, American Friends Service Committee, Veterans for Peace, World Beyond War.
- Other:** PSR (Physicians for Social Responsibility), Nucleus Age Peace Foundation, SGI-USA (Soka Gakkai International - USA), United Church of Christ, Health for All Now!, Center of Concern, REVERB, NIRS (Nuclear Information and Resource Service), 350, Peace Action, future of life, OUTRIDER, WAND, and NUCLEAR FREE SCHOOLS.



COMMUNITY ORGANIZING



80 MUNICIPALITIES & STATE LEG BODIES

www.preventnuclearwar.org/municipalities-and-states/





ICAN CITIES APPEAL

Towns and cities that call for the U.S. to embrace the U.N. Treaty on the Prohibition of Nuclear Weapons in their Back from the Brink resolution also join hundreds of cities worldwide who are part of the International Campaign to Abolish Nuclear Weapons' (ICAN) Cities Appeal.



#ICANSAVE
MY CITY



330+ ELECTED OFFICIALS

www.preventnuclearwar.org/open-letter/

FOR IMMEDIATE RELEASE

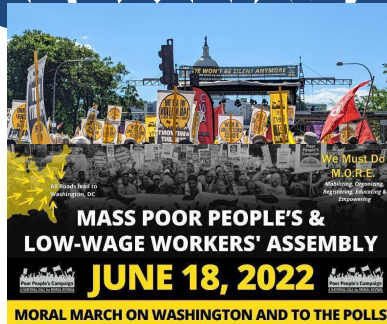
OVER 300 LOCAL & STATE ELECTED
OFFICIALS ACROSS 41 STATES
URGE BIDEN, CONGRESS TO TAKE
BOLD ACTION ON NUCLEAR
WEAPONS





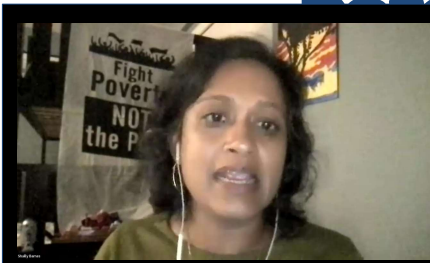
Finding Common Cause

Confronting Interlocking Injustices w/the Poor People's Campaign



Finding Common Cause

Preventing Nuclear War Means Defending Democracy



All In!
Preventing Nuclear War Means Defending Democracy

Virtual Roundtable
Wednesday, September 28, 2022 @ 7 p.m. ET
Register: bit.ly/All-In928

Shelly Gupta Barnes, Policy Director, Middle Atlantic Campaign & Action Center for the Americas, Europe and Global Justice
Justin Kwasa, Director, Center for Constitutional Values, Education Fund
Mike Lohrer, Senior Fellow, Center of Cosmopolitan Studies & Democracy
Hesterly Scott, Director, Project Georgia Workers Action for New Electorates (WAN)

Hosted by: BACK FROM THE BRINK: BRINGING COMMUNITIES TOGETHER TO ABOLISH NUCLEAR WEAPONS



All In! BftB Action Hours

Take Action with Back from the Brink

Join us Wednesdays @ 7 pm ET
October 12, 19 and 26
Register: bit.ly/BftBAction

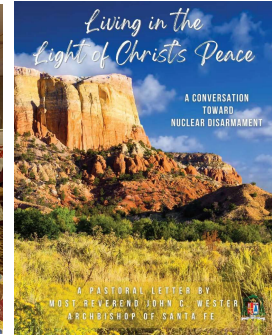
Preventing Nuclear War Means Defending Democracy



Finding Common Cause

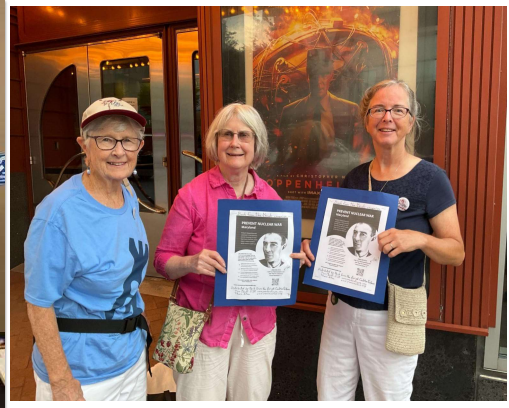
Advancing Interfaith Dialogue on Nuclear Abolition

- ★ 150+ faith national and local faith organizations have endorsed BftB including the National Baptist Convention of America, National Council of Churches (NCC), Friends Committee on National Legislation, Islamic Society of North America, Pax Christi-USA, Presbyterian Church, Reconstructionist Rabbinical Association, Soka Gakkai International-USA, United Church of Christ Justice and Witness Ministries, and United Methodist General Board of Church and Society
- ★ BftB joined with Archbishop Wester of Santa Fe to convene a dialogue about nuclear disarmament with senior leaders from many faiths, and is continuing focused organizing in the faith community



ORGANIZING OPPENHEIMER ADVOCACY

Back from the Brink organized activists around this summer's release of the film *Oppenheimer* to educate and engage their communities about nuclear weapons, the harm they continue to cause, and the imperative to get rid of them. We provided valuable tools and resources to the broader peace and disarmament community. Our co-branded flyers and H. Res. 77 advocacy cards were distributed by BftB activists in 23 communities across 16 states.





OPPENHEIMER FILM ADVOCACY

← → 🔍 <https://preventnuclearwar.org/oppenheimer/> 80%

BACK FROM THE BRINK HOME ABOUT OUR SOLUTIONS WHO'S ON BOARD TAKE ACTION LEARN NEWS & UPDATES DONATE

"Oppenheimer" Advocacy Resources

The Christopher Nolan film *Oppenheimer* debuts on July 21, 2023, one week after the 78th anniversary of the first-ever detonation of a nuclear bomb over Alamogordo, New Mexico. The film is based on the book "American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer" by Martin Sherwin and Kai Bird. J. Robert Oppenheimer was an American physicist who was instrumental in creating the atomic bomb.

Oppenheimer provides an important opportunity to educate the public about the danger that nuclear weapons pose to humanity and all we hold dear, from the environmental health and justice aspects of nuclear weapons production and testing to the real and growing threat of nuclear war. Importantly, the film also provides an opportunity to engage your community in efforts to abolish nuclear weapons and enact Back from the Brink's common sense policies to reduce the risk of nuclear war.

Below are advocacy resources, actions you can take, and materials to share with your community. We will continue to add more resources as they become available—please reach out if you have resources or events you'd like us to add to this page. **And if you haven't already, be sure to sign up for Back from the Brink emails for news, updates, and advocacy opportunities.**

ENGAGE LOCAL MEDIA

LEAFLET MOVIEGOERS

PASS A LOCAL RESOLUTION

SHARE ON SOCIAL MEDIA

BACKGROUND MATERIALS

URGE YOUR U.S. HOUSE REP TO COSPONSOR H. RES. 77

HELP DOWNWINDERS & FRONTLINE COMMUNITIES

ATTEND A SCREENING OR EVENT

OPPENHEIMER FLYER

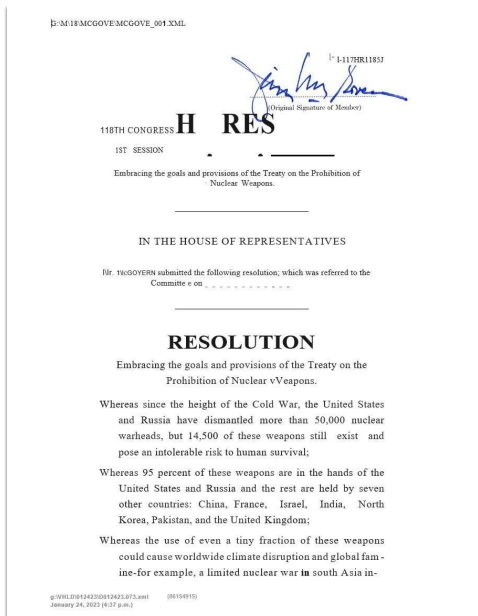
H. RES. 77 ADVOCACY CARDS

Back from the Brink created a comprehensive Oppenheimer Advocacy Resources page for the peace and disarmament community.

These resources may be useful again next year during Oscar season.



H. RES. 77 - EMBRACING THE TPNW



H. RES. 77 - EMBRACING THE GOALS AND THE PROVISIONS OF THE UN TREATY ON THE PROHIBITION OF NUCLEAR WEAPONS

Resolved, That it is the sense of the House of Representatives that the United States—

(1) calls on the President to embrace the goals and provisions of the Treaty on the Prohibition of Nuclear Weapons and make nuclear disarmament the centerpiece of the national security policy of the United States; and

(2) calls on the Secretary of State, the Secretary of Defense, all other Federal and congressional leaders of the United States and the American people to lead a global effort to move the world back from the nuclear brink and to prevent nuclear war by—

(A) actively pursuing and concluding negotiations on a new, bilateral nuclear arms control and disarmament framework agreement with the Russian Federation before 2026 and pursuing negotiations with China and other nuclear-armed states on an agreement or agreements for the verifiable, enforceable, and timebound elimination of global nuclear arsenals;

(B) renouncing the option of using nuclear weapons first;

(C) ending the President's sole authority to launch a nuclear attack;

(D) taking the nuclear weapons of the United States off hair-trigger alert; and

(E) canceling the plan to replace the nuclear arsenal of the United States with modernized, enhanced weapons.



H. RES. 77 ORGANIZATIONAL LETTER



March 8, 2023

Dear Representative:

Vladimir Putin has made terrifying nuclear threats as part of his horrific war against Ukraine. The prospect of war over Taiwan is rising. Last August, the UN Secretary-General said "humanity is just one miscalculation away from nuclear annihilation."

In short the risk of nuclear war is all too real – perhaps greater than it has been since the Cuban Missile Crisis in 1962 – threatening all of humanity. It's well past time for the United States and the world to get serious about nuclear disarmament and to take steps to prevent nuclear war and reduce nuclear risks.

Congress has a vital role to play in championing nuclear risk reduction and disarmament. In that spirit, we ask you to join Rep. Jim McGovern (D-MA) and Rep. Earl Blumenauer (D-OR) in co-sponsoring H. Res. 77, a resolution calling on the United States to embrace the goals and provisions of the Treaty on the Prohibition of Nuclear Weapons (TPNW) and to take concrete policy steps to reduce nuclear risks.

More specifically, the resolution calls on the United States to make nuclear disarmament the centerpiece of the national security policy of the United States and calls on the Secretary of State, the Secretary of Defense, all other Federal and congressional leaders of the United States and the American people to lead a global effort to move the world back from the nuclear brink and to prevent nuclear war by:

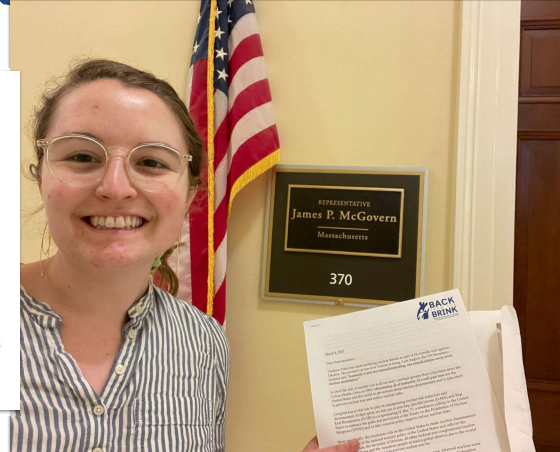
- Actively pursuing and concluding negotiations on a new, bilateral nuclear arms control and disarmament framework agreement with the Russian Federation before 2026 and pursuing negotiations with China and other nuclear-armed states on an agreement or agreements for the verifiable, enforceable, and timebound elimination of global nuclear arsenals;
- Renouncing the option of using nuclear weapons first;
- Ending the President's sole authority to launch a nuclear attack;
- Taking the nuclear weapons of the United States off hair-trigger alert; and
- Canceling the plan to replace the nuclear arsenal of the United States with modernized, enhanced weapons.



U.S. Conference of Mayors Adopts New Resolution in Support of H. Res. 77!

Jun 5, 2023

154 Organizations Call on Congress to Take Leadership on Nuclear Disarmament



H. RES. 77 RESOURCES

https://preventnuclearwar.org/h-res-77-resources/

H. Res. 77 – Embracing the Goals & Provisions of the Treaty on the Prohibition of Nuclear Weapons

H. Res. 77 Advocacy Resources

H. Res. 77 is a resolution introduced in the U.S. House of Representatives by Rep. Jim McGovern (D-MA) and Rep. Earl Blumenauer (D-OR) in January 2023 that calls on the United States to embrace the goals and provisions of the Treaty on the Prohibition of Nuclear Weapons (TPNW) and to adopt Back from the Brink's comprehensive policy prescriptions for preventing nuclear war. Back from the Brink is all in on using H. Res. 77 as a vehicle for transformative change—as a grassroots organizing and advocacy tool to stimulate real debate about nuclear weapons in communities around the country and for cultivating congressional leaders committed to advancing the cause of nuclear disarmament. Below are actions you can take and resources you can use to help grow the demand for change and build a bold, visible nuclear disarmament constituency in the United States. Be sure to also check out our May 31 *Growing Support for Nuclear Abolition* webinar with Congressman McGovern, who shared his wisdom and insights about H. Res. 77 and the many ways folks can make a difference. Questions? Don't hesitate to contact us at info@preventnuclearwar.org.

CURRENT COSPONSORS - 40 (UPDATED 9-22-23)

CONTACT YOUR REPRESENTATIVE PASS A LOCAL BFTB RESOLUTION WRITE LETTERS TO THE EDITOR SHARE ON SOCIAL MEDIA

BACKGROUNDER FOR HOUSE OFFICES ORGANIZATIONAL SIGN-ON LETTER US MAYORS RESOLUTION H. RES. 77 ADVOCACY CARDS

CONTACT YOUR U.S. HOUSE REPRESENTATIVE!

GROWING SUPPORT FOR NUCLEAR ABOLITION

with Rep. Jim McGovern (D-MA) and Back from the Brink
WED. MAY 31 @ 8 PM ET / 5 PM PT

PROGRAM

- Welcome
- Rep. Jim McGovern Q & A
- Taking Action with BFTB Q & A
- Wrap Up

“Growing Support for Nuclear Abolition” featuring Rep. Jim McGovern – Video & Resources



H. RES. 77 - 41 COSPONSORS TO DATE



Rep. Jim McGovern (D-MA)

H. Res. 77 is sponsored by Rep. Jim McGovern (D-MA). Current cosponsors are listed below. If your representative is listed, please take a moment to thank them for showing leadership on nuclear abolition. Thank your representative directly and publicly through social media. You can also ask your representative to give a floor speech, issue a public statement, or announce their H. Res. 77 cosponsorship on their social media channels. If your representative is not listed, please urge them to cosponsor using the resources above.

Thank you for taking action! Together, we can create a safer and more just world free of nuclear weapons.



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LOCAL ELECTEDS 2MSP LETTER TO BIDEN



Local and State Elected Officials Letter to President Biden (Fall, 2023)

All local, county or state elected officials within the United States are encouraged to sign onto the following letter. Current signatories are listed below the sign-on form. The deadline for signature is Friday, November 10, 2023. The letter will be delivered to senior officials within the Biden administration on or around Friday, November 17, 2023. All signatories will be contacted before the public release of the letter with resources and suggestions for how to amplify the effort within your community. Any questions or comments concerning this letter can be directed to Sean Meyer at sean@preventnuclearwar.org.

President Joseph Biden
The White House
1600 Pennsylvania Ave., NW
Washington, D.C. 20500

Dear President Biden:

We, local and state elected officials from throughout the country, write to you about a clear and present danger—the growing threat of nuclear war—to urge you to act decisively and urgently to confront this existential threat to humanity and all we hold dear.

In July, 2022 you said "I have a responsibility to act with urgency and resolve when our nation faces clear and present danger." You also speak regularly and eloquently about the American people's ability to take on big challenges and accomplish whatever it is we set out to do as a people, as a country.

There are a number of steps you should take immediately that will significantly reduce nuclear risks, make the United States and the entire world safer and get us back on the path to a world free of nuclear weapons.

As you know these goals are shared by the other major nuclear powers whose leaders joined with you in 2022 to declare that "a nuclear war cannot be won and must never be fought" while also affirming the shared obligation under the Nuclear Non-Proliferation (NPT) Treaty "to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament."

Mr. President, it's time to act before catastrophe strikes and our luck runs out.



If Not Now, When? Time To Get Serious About Nuclear Disarmament

Oct 23, 2023



HOW TO GET INVOLVED

- ❖ Endorse Back from the Brink, ask others as well
- ❖ Ask your local, county, or state elected official to sign our open letter to Biden (deadline 11-10)
- ❖ Call, write, or meet with your House rep to urge cosponsorship of H. Res. 77
- ❖ Organize a BftB municipal resolution effort
- ❖ Write letters to the editor
- ❖ Attend local organizing meetups 3rd Tuesdays
- ❖ Follow back from the brink on social media
- ❖ Form or join a BftB hub
- ❖ Become a coalition partner (for organizations)



Boston City Councilor Liz Breadon holds up 300 signatures from Boston Latin students in support of the Back from the Brink resolution that Boston adopted on December 8, 2021.



ENDORSE

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ENDORSE & JOIN

ADVOCACY TOOLS

LEGISLATION

Breaking the nuclear status quo and building broad support for nuclear weapons abolition is no small feat. We need everyone — organizations, elected officials, and committed individuals alike — to make it happen. Endorse Back from the Brink and join the effort today! And please check out our advocacy tools if you'd like to start organizing in your community.

INDIVIDUALS

Are you ready to roll up your sleeves? Whether you have just a little bit of time or a lot, this initiative needs your help to educate the public, gather more endorsements and show our elected representatives that our nuclear weapons policies need to change. Please join us! And let us know if you'd like to help with Back from the Brink organizing efforts in your region.

INDIVIDUALS - JOIN THE EFFORT

ORGANIZATIONS

Do you represent an organization or business that cares about the planet and humanity and wants to build a better future? Please sign on! And let us know if you're interested in becoming a Coalition Partner (described in the endorsement form) and/or can actively spread the word to others, be it your membership, chapters, networks or congregations.

ORGANIZATIONS - ENDORSE

Cris Cruz
Co-Founder and Director of Outreach
Nuclear Free Schools

"Back from the Brink provides the opportunity for inter-generational and cross-cultural dialogue, a fundamental step for a world without nuclear weapons."

<https://preventnuclearwar.org/endorse/>



ADVOCACY TOOLS

preventnuclearwar.org/advocacy-tools/

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ADVOCACY TOOLS

Thank you for your interest in getting involved with Back from the Brink! These advocacy tools are designed to help make your organizing efforts as easy as possible. If you have any questions, run into any roadblocks, or have suggestions for how to improve these tools, please contact us. (Note: If you are pursuing a municipal resolution or a Back from the Brink endorsement from a mayor, please consider also asking your mayor to join Mayors for Peace.)



ORGANIZING TOOLKIT



RESOLUTIONS GUIDE



SAMPLE REQUEST



SAMPLE RESOLUTION



ORGANIZING MATERIALS



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https://preventnuclearwar.org/nuclear-weapons-101/

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- NUCLEAR WEAPONS 101
- RESOURCES
- MULTIMEDIA

NUCLEAR WEAPONS 101

Given their devastating force and long-lived toxicity, nuclear weapons can cause death, injury and illness on a cataclysmic scale. The health and environmental impact of nuclear weapons production, testing, and waste is still felt by communities throughout the country, causing disproportionate harm to women, children, and communities of color. Learn more about nuclear weapons and intersections with other critical issues below.



NUCLEAR WEAPONS 101



HEALTH & ENVIRONMENT



RACIAL JUSTICE



CLIMATE CHANGE



MORALITY & ETHICS



DONATE

Back from the Brink Needs Your Support!

Please consider donating to **Back from the Brink: Bringing Communities Together to Abolish Nuclear Weapons**. Your donation will help us build upon our success by expanding our grassroots organizing efforts and promoting the campaign widely. And, if you make a one-time donation of \$75 or more or become a sustainer with monthly donations of \$10 or more, you'll receive a Back from the Brink t-shirt!

Donations to Back from the Brink are fully tax-deductible through our fiscal sponsor, Physicians for Social Responsibility-Los Angeles (PSR-LA). You can donate at www.preventnuclearwar.org/donate or if you prefer, checks can be made payable to PSR-LA and mailed to 617 S. Olive St. Suite 1100 Los Angeles, CA 90014. Please indicate that your gift is designated for the Back from the Brink campaign. Thank you!



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1

Center for Ethics and Rule of Law

- Executive Board
- Located at University of Pennsylvania
- Intersection of ethics and Rule of Law in the national security space
- Various conferences on nuclear weapons and ROL

2

Lawyers Committee for Nuclear Policy

- Executive Board
- Law of Armed Conflict and Nuclear Weapons

3

Council for a Livable World

- Chairman of Board
- Lobby Senate and House about nuclear weapons issues

4

Center for Transparency

- Use FOIA to obtain records from USG about nuclear weapons issues
- Recently obtained records from NNSA about pit production at Los Alamos

DRAFT

Artificial Intelligence and the Decision to Launch the U.S. Nuclear Arsenal: Help
or Hindrance

Jules Zacher
CERL Conference
April 2021

I. Introduction

The decision to launch the U.S. nuclear arsenal in whole or in part will eventually be made autonomously with humans standing by. This is due to the increasing complexity of Nuclear Command, Control and Communications (NC3) and the application of Artificial Intelligence (AI) to it. It is also inevitable because of the history of science and warfare, and the continuing expenditure of monies anticipated by the current Administration. Actions taken by other countries, including countries who do not have developed satellite systems yet are applying AI to their first use capability, will also play a role. This inevitability will not cure, indeed may exacerbate, the illegality of nuclear weapons.

A disturbing confounding factor making the near autonomous decision to launch is the intertwining of one technology with the other in an ever-spiraling chain of escalation. More specifically, a lower-level cyber-attack may eventually trigger a nuclear launch because of automatic responses both within the increasingly offensive cyber environment and NC3. Thus, one technology is playing off another, all to everyone's detriment.

This paper will explore the current status of AI as applied to nuclear weapons, as well as the pros and cons of doing so. It will conclude with the proposition that any attempt to use AI to make them compliant with domestic and international law will be unsuccessful because nuclear weapons are arguably

illegal.

II. Current NC3 Too Slow to Deal with Technological Advancements

The current technology to launch the US nuclear arsenal was created and placed into operation during the Cold War. The system was premised on the idea that a President would have time to deliberate. The current US NC3 combines the systems and personnel necessary to detect the launch of a missile and respond in kind. The US NC3 is designed to operate in all conditions under the time constraints imposed by the adversary's launch. This ability makes up the basis for American deterrence theory.

Some experts have argued that recent technological advancements made by both China and Russia have significantly reduced the response time for any President. Hypersonic weapons, cruise missile employing stealth technology, and artificial intelligence creates the possibility that the current NC3 could not be fast enough for a President to decide and order the launch all or part of the US arsenal. According to two authors, this situation degrades America's nuclear deterrence capabilities. These same authors posit that it may be necessary to develop an automated NC3 relying on artificial intelligence to counter this de-stabilizing situation.¹

¹ "America Needs a 'Dead Hand', Adam Lowther and Curtis

The authors further elaborate on automating the Presidential decision process by stating the new NC3 based on AI will have "predetermined response decisions that detects, decides and directs strategic forces with such speed" that the reduction in time to decide will dissipate.² It is this automation that will be further explored in this paper.

III. Technological Changes Making Current NC3 Too Slow

1. Russian Technological Changes

Russia has made many changes to its arsenal during the last ten years. The main purpose of these changes is to defeat American missile defense. This has been done by changing the shape, materials used, and the attack mode of various. These devices include the Kaliber-MKh-102 cruise missile, the Poseidon Ocean Multipurpose System Status-6 autonomous submarine, and the Avangard Objekt 4202 hypersonic weapon.

It may be instructive to learn just how fast these devices can operate. According to one expert, a hypersonic cruise missile fly at speeds of Mach 5 up to 100,000 feet and would take six minutes from launch to striking a target anywhere in the US. Hypersonic glide vehicles are even faster, traveling at speeds close to

McGiffin, "War on the Rocks", August 16, 2019

² Ibid

Mach 20. Glide missiles are maneuverable and can reveal their intended target only momentarily before impact. The current US defensive capability cannot deal with these weapons. Low-observable nuclear armed cruise missile creates a different threat because they are difficult to track.³

According to Lowther and McGiffin, "These new technologies are shrinking America's senior-leader decision time to such a narrow window that it may soon be impossible to effectively detect, decide, and direct nuclear force in time".⁴ Further, because of these advances in technology and the associated time to respond being dramatically reduced, it is not hard to imagine that a Presidential decision regarding the appropriate response will have been made prior to an attack. Artificial intelligence algorithms furthermore will determine if an attack is under way, determine which of the pre-approved responses is correct, and launch whatever part of the US arsenal is deemed appropriate.⁵

IV. Automating the Decision to Launch

1. Disadvantages of Automation

A. No Previous Experience

A major drawback of using AI in a nuclear weapons environment is the lack

³ Ibid Lowther and McGiffin

⁴ Ibid Lowther and McGiffin

⁵ Ibid Lowther and McGiffin

of any previous experience to learn from. Thankfully there has never been a situation in which a President had to decide to launch the US nuclear arsenal. A "general" NC3 informed by AI, therefore, would be much more difficult to implement than a "narrow" system because of this lack of "knowledge".

AI would be best employed to understand the parameters of an attack as it is happening and use pre-determined responses appropriate based on criteria built into the algorithm. According to Lowther and McGiffin, this would help counter to some small degree the time constraints imposed by the new technology. A six minutes time frame would still prevail in the decision-making process.⁶

B. Lack of Judgment and Unpredictability

Another downside of automating the decision to launch is the absence of human judgment. Compounding this defect is the robustness of the algorithms employed with the resultant increase in false alarms. First use of nuclear weapons, however, would be encouraged in an automated world because no leader would want to lose a conventional conflict.⁷ Machine learning is also very unpredictable,

⁶ Ibid Lowther and McGiffin

⁷ NTI Seminar: A Stable Nuclear Future?

Autonomous Systems, Artificial

Intelligence and Strategic Stability with

UPenn's Michael C. Horowitz

thus not reliable, thereby posing significant testing problems.⁸

C. Perceptions of Adversary

Adopting AI to the nuclear arena could also be very destabilizing because one country may perceive its adversary as having AI capabilities that it may not have. This could result in the country making this mistaken observation taking steps to offset this alleged advantage with the resultant arms race being intensified. These steps could include even further modernization of a country's nuclear arsenal, heightening the alert status, or increasing the automation of the launch of the nuclear arsenal.⁹

AI-enabled systems are also not good at understanding an adversary's intent. A recent (April 2021) example is the buildup of Russian troops along the Ukrainian border. While a CIA analyst might use her understanding of the multi-faceted political environment to predict an adversary's actions, a machine would

⁸ "AI & Global Governance: AI and Nuclear Weapons - Promise and Perils of AI for Nuclear Stability", Dr. Vincent Boulanin, United Nations Centre for Policy Research, 12/7/2018, <https://cpr.unu.edu/publications/articles/ai-global-governance-ai-and-nuclear-weapons-promise-and-perils-of-ai-for-nuclear-stability.html>

⁹ Ibid, Boulanin AI & Global Governance

have a very hard time integrating all the aspects involved in such a contextual-dependent situation.¹⁰

D. Automation Bias

A further problem associated with AI is "automation bias" which occurs when decision makers discredit their own judgment in favor computer generated information. This could be particularly relevant in the stressful situation surrounding the decision to launch. Compounding this negative aspect of automation is what one author calls a "flash war" which is similar to a "flash crash" on Wall Street. Under that scenario one automated system mistakenly reads an enemy's moves and determines that a launch will occur shortly. This in turn causes other computers to start preparing to launch its nuclear arsenal, which in turn prompts an adversary to ratchet up its nuclear status or even launch pre-emptively.¹¹

E. Relationship Between Cyber and AI

The Trump 2018 NPR established that a non-nuclear attack, such as a

¹⁰ Ibid Klare "Skynet...."

¹¹ Paul Scharre, *Army of None: Autonomous Weapons and the Future of War* (New York: W.W.

Norton, 2018), pp. 1-99-230 as quoted in Klare "Skynet..."

cyberattack, on NC3 is justification for the usage of nuclear weapons.¹² An AI response to a cyber-attack is the worst of both worlds. This is particularly worrisome because of US usage of cyber offensive weapons inhibit Russian, Chinese and North Korean NC3 systems.¹³ This "left of launch" strategy artfully entitled "defending forward" by Cyber Command is even more troublesome in an AI environment. One mistake by an algorithm under the extreme time pressures could have devastating effects. This is particularly true with the increasingly sophisticated cyber capabilities of foreign government and their continuing efforts to penetrate US NC3. Placing malware in the US NC3 or spoofing it with false alerts furthermore creates doubt in US decision makers as to the accuracy of information being created by NC3. This would all occur in warped speed time.¹⁴ Rather than stabilizing NC3 through the use of AI, the strategic stability implicit for deterrence theory would be undermined.

One author has written that the risk of inadvertent escalation to using nuclear weapons has increased because of the US increasingly offensive cyber activity

¹² 2018 Nuclear Posture Review

¹³ "Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation", *Arms Control Today*, Michael T. Klare, November 2019

¹⁴ Ibi, Klare "Cyber Batttles"

against conventional assets of an adversary. These assets include satellites, radars on the ground and aircraft used for communications in a conventional, non-nuclear environment. Unfortunately, these conventional assets are "entangled" with nuclear NC3 of US adversaries because they are dual use. They are also increasingly vulnerable to hacking.¹⁵

While President Trump in August 2018 gave US Cyber Command greater offensive authority, President Biden has attempted to coral Cyber Command's authority by requiring review by the White House of all significant cyber operations. Nevertheless, National Security Adviser Jake Sullivan has made clear in the past that sanctions alone are not sufficient to bring Russia and China into talks to discuss regulating cyberspace.¹⁶ The recent Solar Winds hacking by the Russians has prompted a response by the US that the public is aware of. It is unknown what additional actions have been taken by the NSA.

F. Singularity

¹⁵ "Escalation through Entanglement: How the Vulnerability of Command-and-Control Systems ", James M. Acton,

¹⁶ "Preparing for Retaliation Against Russia, U.S. Confronts Hacking by China", David Sanger, Julian Barnes, Nicole Perlroth, NYT, March 7 2021

A major concern for persons in the AI community is the concept of singularity. Essentially singularity is idea "that exponentially accelerating technological progress will create a form of AI that exceeds human intelligence and escapes our control."¹⁷ According to one author, singularity may occur in the 21st century because of the rate of progress in AI.¹⁸ This ability of AI raises disturbing questions for its application NC3.

G. Unintended Conflict Escalation

A recent NSCAI report has stated "While the Commission believes that properly designed, tested and utilized AI-enabled and autonomous weapons systems will bring substantial military and even humanitarian benefit, the unchecked global use of such systems potentially risks unintended conflict escalation and crisis instability. The report highlighted the concern that many experts have that AI and AWS could accelerate the escalatory behavior of decision makers in the exigent circumstances occurring in the run up to using nuclear weapons. These same experts have proposed a "tripwire" being a part of any AI

¹⁷ "AI & Global Governance: Three Distinct AI Challenges for the UN", Dr. Nicholas Wright, UN University Centre for Policy Research, December 7, 2018

¹⁸ Ibid, Wright

NC3 system that would prohibit any actions that would increase the likelihood of using nuclear weapons absent human intervention.¹⁹

2. Advantages of automation

AI is currently helping to identify targets, manage autonomous weapons systems, identify patterns. AI can rapidly process enormous amounts of data and attach the pros and cons to various courses of action.²⁰ Vincent Boulanin has written about the advantages of using AI in a nuclear environment as follows "Recent advances in artificial intelligence could be leveraged in all aspects of the nuclear enterprise. Machine learning could boost the detection capabilities of extant early warning systems and improve the possibility for human analysts to do a cross-analysis of intelligence, surveillance, and reconnaissance (ISR) data. Machine learning could be used to enhance the protection of the command-and-control architecture against cyberattacks and improve the way resources, including human forces, are managed. Machine learning advances could boost the capabilities of non-nuclear means of deterrence be it conventional (air defense

¹⁹ Ibid, Klare "AI Commission..."

²⁰ Ibid Lowther and McGiffin

systems), electronic (jamming) or cyber.²¹"

According to another author, AI could increase strategic stability by providing decision makers with better information more quickly, thereby decreasing incorrect decision making and possible escalation. AI could also enhance treaty enforcing capabilities through verification of a treaty member's behavior.²²

Proponents of automating NC3 also argue that decision makers are overloaded with ever increasing data being fed them. Hypersonic missiles and hacking of NC3 has further reduced the time available. AI could reduce "these challenges by sifting through data at lightning speed and highlighting the most important results and by distinguishing false warning of nuclear attack from

²¹ "AI & Global Governance: AI and Nuclear Weapons - Promise and Perils of AI for Nuclear Stability", Dr. Vincent Boulanin, United Nations Centre for Policy Research, 12/7/2018, <https://cpr.unu.edu/publications/articles/ai-global-governance-ai-and-nuclear-weapons-promise-and-perils-of-ai-for-nuclear-stability.html> as quoted in "America Needs a 'Dead Hand'", Adam Lowther and Curtis McGiffin, "War on the Rocks", August 16, 2019

²² Ibid, Boulanin AI & Global Governance

genuine ones.²³

These same proponents state that "As the complexity of AI systems mature, AI algorithms may also be capable of providing commanders with a menu of viable courses of action based on real-time analysis of the battle-space, in turn enabling faster adaptation to complex events."²⁴ Indeed, an argument being put forward that because of time constraints AI would determine the best response to an impending attack and respond without human intervention. Lowther and McGiffin have written "Thus, it may be necessary to develop a system based on (AI), with predetermined response decisions, that detects, decides and directs strategic forces with such speed that the attack-time compression challenge does not place the United States in an impossible position."²⁵

V. Only Matter of Time Before AI Launches Arsenal

²³ Kelley M. Sayler, "Artificial Intelligence and National Security," CRS Report, R45178, November 21, 2019, pp. 12-13, 28-29 as quoted in Klare "Skynet..."

²⁴ Ibid, Sayler and Klare, p. 13

²⁵ Adam Lowther and Curtis McGiffin, "America Needs a `Dead Hand,'" War on the Rocks, August 16, 2019, <https://warontherocks.com/2019/08/america-needs-a-dead-hand/> (<https://warontherocks.com/2019/08/america-needs-a-dead-hand/>). As quoted in Klare "Skynet"

1. Current NC3 Status

The need to modernize NC3 is being heard all over Washington. NC3 is currently made up of 62 separate systems that were largely implemented in the 1950's and 1960's. In some respects, this antiquity makes NC3 secure because there are few networks involved. The few networks that are involved, namely the Advanced Extremely High Frequency, the SBIRS launch-detection satellites and their attendant ground stations, or the communications link with submarines, are all encrypted, hard to hack, and defended with numerous other methods.²⁶

2. History, Definition, Current Status of AI

AI research began in the 40's with a much greater interest in AI occurring in the first decade of this century because "big data sources became available, machine learning and machine processing improved."²⁷ As a result, Narrow AI, or

²⁶ "Whither Nuclear, Command & Control", Colin Clark, February 14, 2018

²⁷ 8 Executive Office of the President, National Science and Technology Council, Committee on Technology, Preparing for the Future of Artificial Intelligence, October 12, 2016, p. 6, https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf.

algorithms designed to work on discrete tasks such as chess playing and facial recognition, has dramatically increased. Machine learning Narrow AI uses statistical algorithms to recreate cognitive human thinking by creating procedures through analyzing enormous data sets. It is during this analysis, or training process, that AI develops its own model to complete tasks in an environment not previously seen.²⁸ It is widely assumed that General AI, or systems able to perform a large array of tasks using human thinking, is not in the immediate future.²⁹

3. AI's Current Military Uses

Project Maven was a DoD project in part utilizing AI to target militia members in Iraq and Syria.³⁰ The DoD invested \$600 million in unclassified

²⁸ "Artificial Intelligence and National Security", Congressional Research Service, November 10, 2020, p.2

²⁹ Greg Allen, Understanding AI Technology: A concise, practical, and readable overview of Artificial Intelligence and Machine Learning technology designed for nontechnical managers, officers, and executives, Joint Artificial Intelligence Center, April 2020, p.7-9

<https://www.ai.mil/docs/Understanding%20AI%20Technology.pdf>

³⁰ Marcus Weisgerber, "The Pentagon's New Algorithmic

projects involving AI in FY2016. This number has grown to \$2.5 billion in FY2021 with more than 600 AI projects.³¹ DARPA has over 20 AI programs with a \$2 billion multi-year investment.³² A classified AI strategy has been developed

Warfare Cell Gets Its First Mission: Hunt ISIS," Defense

One, May 14, 2017,

[http://www.defenseone.com/technology/2017/05/pentagons-new-algorithmic-warfare-cell-gets-its-first-mission-hunt-isis/137833/.](http://www.defenseone.com/technology/2017/05/pentagons-new-algorithmic-warfare-cell-gets-its-first-mission-hunt-isis/137833/)

³¹ Govini, Department of Defense Artificial Intelligence, Big Data, and Cloud Taxonomy, December 3, 2017, p. 9;

Office of the Under Secretary of Defense (Comptroller)/Chief Financial Officer, Defense Budget Overview: United

States Department of Defense FY2021 Budget Request, February 2020, p. 1-9; and Brendan McCord, Eye on AI,

August 28, 2019, transcript available at [https://static1.squarespace.com/static/5b75ac0285ed1b470f58ae2/t/5d6aa8edb91b0c0001c7a05f/1567.](https://static1.squarespace.com/static/5b75ac0285ed1b470f58ae2/t/5d6aa8edb91b0c0001c7a05f/1567)

³² "DARPA Announces \$2 Billion Campaign to Develop Next Wave of AI Technologies," DARPA, September 7,

2018, [https://www.darpa.mil/news-events/2018-09-07;](https://www.darpa.mil/news-events/2018-09-07)

by DoD part of which is the establishment of a Joint Artificial Intelligence Center (JAIC). The strategy also provides ethical and legal guidance on the creation and usage of AI systems.³³

The 2021 National Defense Authorization Act is one indication of how new technology is playing an increasing role in the US military. The Act has made the position of JAIC in the Pentagon more powerful.³⁴ Further, the Air Force is currently managing Joint All-Domain Command and Control (JADC2) which uses computers to collect sensor data from various platforms, place the ensuing data about the adversary into organized places, and send the results at high speed to various aspects of the military. JADC2 is at the center of the US military's strategy to fight wars of the future through "All-Domain Operations". It is expected that JADC2 will use AI to reduce the possible reactions a commander can make and suggest the best one. The Pentagon has indicated that JADC2 and AI will become a

³³ Defense Innovation Board, "AI Principles: Recommendations on the Ethical Use of Artificial Intelligence by the Department of Defense," October 31, 2019, https://media.defense.gov/2019/Oct/31/2002204458/-1/-1/0/DIB_AI_PRINCIPLES_PRIMARY_DOCUMENT.PDF

³⁴ "U.S. Emerging Technologies Gain Support", "Arms Control Today", Michael T. Klare, January/February 2021

part of the modernization of NC3, whereby data from conventional confrontation will "automatically be fed into NC3 computerized intelligence-gathering systems, possibly altering their assessment of the nuclear threat and leading to a heightened level of alert and possibly a greater risk of inadvertent or precipitous nuclear weapons use."³⁵

4. US Committed to AI

The US has stated that AI is a key technology that can "ensure (the United States) will be able to fight and win the wars of the future".³⁶ A recent report by the National Security Commission on Artificial Intelligence (NSCAI) has stated three main themes in this regard. First is the observation that AI is a "breakthrough" technology that will change how war is conducted. Secondly, the US currently is at risk to lose out to China and Russia in using AI in the military sphere. Finally, far more government resources must be devoted to using the

³⁵ "'Skynet' Revisited: The Dangerous Allure of Nuclear Command Automation", Arms Control Today, Michael T. Klare, April 2020

³⁶ Department of Defense, Summary of the 2018 National Defense Strategy, p.3, <https://dod.defense.gov/Portals/1/documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.

civilian capabilities in AI in the military arena.³⁷

The NSCAI report is reminiscent of similar threat concerns for the US after Sputnik and the "missile threat" of the 1960's. Language in the report states "In the future, warfare will pit algorithm against algorithm. The sources of battlefield advantage will shift from traditional factors like force size and levels of armaments, to factors like superior data collection and assimilation, connectivity, computing power, algorithms, and system security...China is already an AI peer, and it is more technically advanced in some applications. Within the next decade, China could surpass the United States as the world's AI superpower."³⁸

As stated in the "National Defense Strategy" of 2018, "We (the US) face an ever more lethal and disruptive battlefield, combined across domain, and conducted at increasing speed and reach...The security environment is also affected by rapid technological advancements and the changing character of war. The drive to develop new technologies is relentless...and moving at accelerating speed."³⁹

³⁷ "AI Commission Warns of Escalatory Dangers", "Arms Control Today", Michael T. Klare, March 2021

³⁸ Ibid, Klare "AI Commission..."

³⁹ "Summary of the 2018 National Defense Strategy of the United States," U.S. Department of Defense, n.d.,

<https://dod.defense.gov/Portals/1/Documents/pubs/2018->

The report went on to state that the US must control technologies such as AI and make them a part of its military capability.

President Biden has stated in a recent document that "...running beneath many of these broad trends is a revolution in technology that poses both peril and promise. The world's leading powers are racing to develop and deploy emerging technologies, such as artificial intelligence and quantum computing, that could shape everything from the economic and military balance to the future of work, wealth and inequality within them...Emerging technologies remain largely ungoverned by laws or norms designed to center rights and democratic values, foster cooperation, establish guardrails against misuse or malign action, and reduce uncertainty and manage the risk that competition will lead to conflict. America must reinvest in retaining our scientific and technological edge and once again lead, working alongside our partners to establish the new rules and practices that will allow us to seize the opportunities that advances in technology present."⁴⁰

DARPA is developing a program entitled called "Knowledge-directed

National-Defense-Strategy-Summary.pdf

(<https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>) (emphasis in original).

⁴⁰ "Interim National Security Guidance", The White House, March 2021

Artificial Intelligence Reasoning Over Schemas". The program combines the environment of an event such as a launch with the time involved to give decision makers an understanding of what is going on and allow for a rapid response.⁴¹

5. Military Always Exploits Technology

Militaries have always used scientific and technological advancements, frequently before these innovations could have a cost/benefit analysis performed. The costs would include the risks inherent in utilization and what controls that would be needed to contain these risks. Historical military applications of technological change without risk/benefit analysis include the usage of poison gas during WWI and the dropping of the atomic bombs. The same thing is happening today with control of the application of technologies such as AI being far behind any attempts to understand their risks and place appropriate controls on them.⁴²

6. Current U.S. Plans to Use AI to Launch

Current plans to modernize NC3 total \$7 billion and include increasing automation of systems making up NC3. These plans include creating "building blocks for a highly automated command and control system that will progressively

⁴¹ Ibid Lowther and McGiffin

⁴² "A Strategy for Reducing the Escalatory Dangers of Emerging Technologies", "Arms Control Today", Michael T. Klare, December 2020

diminish the role of humans in making critical decisions over the use of nuclear weapons. Humans may be accorded the final authority to launch nuclear bombers and missiles, but assessments of enemy moves and intentions and the winnowing down of possible US responses will largely be conducted by machines relying on artificial intelligence (AI).⁴³

While the existing NC3 contains significant automation in launch-detection radars, many new systems such as decision-support, will contain algorithms used to understand what an adversary is attempting to do and suggesting actions which can be taken by the US in response. Further, all elements of NC3 will be affected by AI in the proposed NC3 modernization.⁴⁴

7. International Implications

Putin has already stated AI will determine "humankind(s)" future. He further stated that the country leading in AI will be the "ruler of the world".⁴⁵ China is

⁴³ "'Skynet' Revisited: The Dangerous Allure of Nuclear Command Automation'", Michael T. Klare, "Arms Control Today", April 2020

⁴⁴ Ibid, Klare "Skynet...."

⁴⁵ NTI Seminar: A Stable Nuclear Future?
Autonomous Systems, Artificial
Intelligence and Strategic Stability with

investing heavily in AI. It has developed a plan to be the leader in developing AI by 2030. China is concentrating on using AI to create faster and more informed decisions, both of which may have application in the nuclear arena.⁴⁶

VI. Can the decision to launch be made more humane

1. Make the algorithms compliant with IHL

One response to this inevitability could be the creation of a body of experts who will advise the units within the military responsible for creating an increasingly autonomous launch system. Just as there should not be sole authority to launch, there should not be sole authority to create the algorithms used in deep learning which would form the basis of any automatic response. It is not far-fetched to think that "group think" and its innate biases found in the creation of

UPenn's Michael C. Horowitz November 15, 2018

⁴⁶ 2 China State Council, "A Next Generation Artificial Intelligence Development Plan," July 20, 2017, translated by New America, <https://www.newamerica.org/documents/1959/translation-fulltext-8.1.17.pdf>, and Tom Simonite, "For Superpowers, Artificial Intelligence Fuels New Global Arms Race," *Wired*, August 8, 2017, <https://www.wired.com/story/for-superpowers-artificial-intelligence-fuels-new-global-arms-race>.

algorithms for commercial AI applications would also be present in the same types of algorithms for reaction and targeting decisions in a nuclear environment.

Creating an "outside" group to weigh in on such questions as what nuclear weapons to employ and their targets and whether there is compliance with IHL could be one useful task performed by this group. This action is of course made with the assumption that nuclear weapons per se comply with IHL, which the author does not agree with. Indeed, nothing can be done to make nuclear weapons legal through automating their usage because nuclear weapons are illegal to begin with.

2. Some Have Argued AI Can Make the Decision to Launch Legal

Lt.Gen. Jack Shanahan has stated "This is the ultimate human decision that needs to be made...nuclear command and control. We have to be very careful. Knowing ...the immaturity of technology today, give(s) us a lot of time to test and evaluate. Can we use artificial intelligence to make better decisions, to make more informed judgments about what might be happening, to reduce the potential for human casualties or collateral damage. I'm an optimist. I believe you can. It will not eliminate it, never. It's war; bad things are going to happen." JAIC had been looking to hire an ethicist who could look at the models and algorithms being developed to "make sure the process is abiding by our rules of the road. I'm also interested in, down the road, getting some help from the outside on sort of those

deeper philosophical questions. I don't focus on them day to day, because of my charter to field now, but it's clear we have to be careful about this"⁴⁷

DARPA has successfully finished a project devoted to creating a structure for what norms are, how these norms appear and act in humans, and how they can be re-created using algorithms based on novel human experiences. The DARPA project, conducted at Brown University and Tufts University, is a major milestone in achieving AI systems that can "intuit" behavior similar to the way humans do.⁴⁸ Significant challenges remain in encompassing AI created norms into existing computer systems. According to a spokesman for DARPA, this difficulty exists because norms are "highly context-specific and only a relevant subset of them get activated, depending on the situation. Moreover, they seem to exist in an organizational hierarchy but can also be activated in horizontal bundles-networks of norms tied together by the contexts in which they apply and triggered by certain context-specific features. They can be in conflict with one another but they are also continuously being updated...The uncertainty inherent in these kinds of human data

⁴⁷ "No AI for Nuclear Command & Control: JAIC's Shanahan", Sydney J. Freedberg, "Defense Industry News, September 25, 2019

⁴⁸ "Teaching Robots "Manner": Digitally Capturing and Conveying Human Norms", DARPA, May 31, 2017

inputs make machine learning of human norms extremely difficult".⁴⁹

Conversely, a NSCAI report states it will not be in the US best interests to employ ethical standards when using autonomous weapons. The report further states that "properly designed and tested AI-enabled and autonomous weapons systems have been and can continue to be used in ways which are consistent" with IHL. Any attempt to prohibit using such systems would place the US at a competitive disadvantage. Further, such a ban would have no impact on countries such as China and Russia because "commitments from such states...likely would be empty ones."⁵⁰

3. UN and Other Efforts

Significant efforts have been made by the UN to deal with the destabilizing effects of cyber technology. A group of experts has been established to create norms and rules for countries to follow not just with cyber but technology in general. The group used the term "information and computer technology" or ICT and went on to state that "International law, and in particular the Charter of the United Nations, is applicable" when dealing with ICT.

A 2015 report by the UN group established stated that countries "should not

⁴⁹ Ibid DARPA "Teaching Robots..."

⁵⁰ Ibid, Klare "AI Commission..."

conduct or knowingly support ICT activity contrary to its obligations under international law that intentionally damages critical infrastructure or otherwise impairs the use and operation of critical infrastructure" of another state. The report also stated the no country should use ICT to carry out a wrongful act. Further, all countries should try to "prevent the proliferation of malicious ICT tools and techniques and the use of harmful hidden functions."⁵¹ While the focus of the report was on dealing with cyber and its disruption of a country's infrastructure, the report could also be used as a launch for dealing with AI and its possible effect on NC3 in any arms control talks dealing with nuclear weapons.

The UN Convention on Certain Conventional Weapons is focusing on the interplay of AI and conventional weapons. Failure to consider nuclear weapons is a major weakness of this effort because AI effects both conventional and nuclear weapons.⁵²

⁵¹ 20.UN General Assembly, "Group of Governmental Experts on Developments in the Field of Information and Telecommunications in the Context of

International Security: Note by the Secretary-General," A/70/174, July 22, 2015 (containing the report). As quoted in Klare "Cyber Battle"

⁵² **"AI & Global Governance: AI and Nuclear Weapons - Promise**

Another initiative to rein in cyber, and thus perhaps AI, is that undertaken by Brad Smith of Microsoft who called for the creation of a "Digital Geneva Convention".⁵³ A report coming out of Notre Dame has called for an international "cyberpeace" based on universally accepted norms.⁵⁴ President Macron created

and Perils of AI for Nuclear Stability", Dr. Vincent Boulanin, United Nations Centre for Policy Research, 12/7/2018, <https://cpr.unu.edu/publications/articles/ai-global-governance-ai-and-nuclear-weapons-promise-and-perils-of-ai-for-nuclear-stability.html>

⁵³ 21. Brad Smith, "The Need for a Digital Geneva Convention," Microsoft, February 14, 2017, <https://blogs.microsoft.com/on-the-issues/2017/02/14/need-digital-geneva-convention/> (<https://blogs.microsoft.com/on-the-issues/2017/02/14/need-digital-geneva-convention/>).

As quoted in Klare "Cyber Battle"

⁵⁴ Scott Shackelford, "The Meaning of Cyber Peace," Notre Dame Institute for Advanced Study, <https://ndias.nd.edu/news-publications/ndias-rterly/the-meaning-of-cyber-peace/> (<https://ndias.nd.edu/news-publications/ndias-quarterly/the-meaning-of-cyber-peace/>). As quoted in Klare "Cyber Battle"

the "Paris Call for Trust and Security" which essentially adopted 2015 UN report.⁵⁵ The US did not sign off on the Paris effort even though 50 other countries did.⁵⁶ Perhaps President Biden will do so and go even further to apply the same precepts to AI as part of the Strategic Stability Dialogue, which should include China as well as Russia. The existing agreement with China which prevents the use of cyberspace to steal intellectual property indicates that such an agreement can be reached in the AI arena.⁵⁷

4. DoD

"DoD Directive 2311.01" "DoD Law of War Program" states in part "It is DoD policy that a. Members of the DoD Components comply with the law of war

⁵⁵ 23. "Paris Call for Trust and Security in Cyberspace," November 12, 2018, https://www.diplomatie.gouv.fr/IMG/pdf/paris_call_cyber_cle443433-1.pdf

(https://www.diplomatie.gouv.fr/IMG/pdf/paris_call_cyber_cle443433-1.pdf).

As cited by Klare "Cyber Battle"

⁵⁶ 24. David E. Sanger, "U.S. Declines to Sign Macron Declaration Against Cyberattacks," The New York Times, November 13, 2018.

⁵⁷ Ibid Klare "Cyber Battles"

during all armed conflicts, however characterized. In all other military operations, members of the DoD Components will continue to act consistent with the law of war's fundamental principles and rules, which include those in Common Article 3 of the 1949 Geneva Conventions and the principles of military necessity, humanity, distinction, proportionality and honor...(d) The intended acquisition, procurement, or modification of weapons or weapon systems is reviewed for consistency with the law of war".⁵⁸

DoD has also promulgated various ethical principles in using Artificial Intelligence. These principles "will build on U.S. military's existing ethics framework based on... (the) Law of War, existing international treaties and longstanding norms and values"⁵⁹ A different DoD document has stated that these "strong AI principles-instills confidence that it (DOD) will be able to field AI-enabled and autonomous systems that are used lawfully. DOD has comprehensive processes for ensuring that the use of any weapon it fields is compliant with IHL and has demonstrated commitment to operating within IHL, minimizing civilian

⁵⁸ "DoD Directive 2311.01", "DoD Law of War Program" July 2, 2020

⁵⁹ "DOD Adopts Ethical Principles for Artificial Intelligence", DoD, February 24, 2020

casualties, and learning from its mistakes.⁶⁰

Another DoD directive mandates that all systems, including lethal autonomous weapons (LAWS) are designed to "allow commanders and operators to exercise appropriate levels of human judgment over the use of force"⁶¹

VI. Conclusion

Employing AI in the launch of the U.S. nuclear arsenal seems inevitable. There are many pros and cons to using AI during the launch of the US nuclear arsenal. One may argue that IHL can be embedded in the data acquisition and targeting algorithms as the various DoD regulations explicitly call for. There can also be normative proscriptions reining in the application of AI to nuclear weapons.

Th fact remains, however, that nuclear weapons are arguably illegal under IHL. Given this starting point, one cannot then say that using technology such as AI will make an inherently illegal weapon legal.

⁶⁰ "Draft NSCAI Document, Chapter 4: Autonomous Weapon Systems and Risks Associated with AI-Enabled Warfare"

⁶¹ DODD 3000.09

STATEMENT OF THE CO-CHAIRMEN OF THE RUSSIAN BAR ASSOCIATION WITH REGARD TO THE MILITARY SPECIAL OPERATION TO PROTECT DONBASS

Over the past decades, the world community has repeatedly witnessed and continues to witness violations of the basic principles of international law associated with the manifestation of armed aggression of certain countries against others.

For example, in March 1999 NATO military-political bloc started a military operation against Yugoslavia (codenamed "Allied Force"). The formal reason for the airstrikes were accusations against official Belgrade of carrying out ethnic cleansing against the Albanian population of Kosovo. At the same time, the UN Security Council did not give its permission to bomb Yugoslavia.

The NATO attacks in Yugoslavia resulted in the deaths of approximately 2,000 civilians. The military operation was carried out with blatant disregard for the norms of international humanitarian law, resulting in the bombing of defenseless civilian targets. The fundamental principles enshrined in the UN Charter and the Helsinki Final Act were flagrantly violated. The actions of the initiators of the military operation were also inconsistent with the North Atlantic Treaty of 1949, which formed the NATO military-political bloc.

In February 2021, the United States of America carried out airstrikes on Syrian territory on the command of U.S. President Joseph Biden. This act of aggression, without a doubt, also remains outside the bounds of generally accepted norms and principles of international law. Arbitrary detentions, extrajudicial executions and torture, bombardment with unconventional (prohibited) weapons, and illegal strikes against civilian objects are only some of the legal arbitrariness that has occurred.

Since 2014, international norms and agreements have continued to be violated in the territory of Donbass, where an unexplainable genocide of the civilian population has been taking place before the eyes of the world. During the entire period of Ukrainian aggression in the Donetsk and Luhansk People's Republics, more than 5,000 people were killed, including around 100 children! More than 1,600 people became disabled. More than 8 thousand people were wounded with various degrees of severity.

The people of Donbass were persecuted based on ethnicity, language, and political beliefs.