



The Future of Chemical Disarmament in an Eroding Global Order

Annotated Bibliography

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Key Questions:

- What lessons can be learned from the 1st 25 years of the treaty regime?
- What technical and political challenges lie ahead?
- How will new geopolitical problems impact the regime?
- What are the prospects for continued progress in chemical disarmament?

Panel Topics:

1. Taking Stock of the CWC and OPCW – The 1st 25 Years
2. Looking Ahead to the Next 25 Years
3. CWC Verification: from Implementation to Innovation?
4. The Troubled Global Norms
5. The Troubled Enforcement Mechanism
6. The Troubled Connections of Bilateral and Multilateral Arms Control
7. Leadership and the Fate of the Multilateral Treaty Regime

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Panel 1: Taking Stock of the CWC and OPCW – The 1st 25 Years

- What are their key accomplishments?
- What key challenges did they face and how did they fare?
- What lessons should we learn?

Ballard, Joseph. “Reassessing Chemical Weapons Threats.” In *Reassessing CBRN Threats in a Changing Global Environment*, edited by Fei Su and Ian Anthony, 14–19. Stockholm: Stockholm International Peace Research Institute, 2019. https://www.sipri.org/sites/default/files/2019-06/1906_cbrn_threats_su_anthony_0.pdf.

Ballard offers a brief introduction to the history of chemical weapons (CW) use, the Chemical Weapons Convention (CWC), the Organisation for the Prohibition of Chemical Weapons (OPCW), and how recent CW use has threatened global norms and weakened the CWC. Within his discussion of the CWC, he covers both the more well-known use of it for addressing state-sponsored CW programs as well as chemical terrorism. He explains that the treaty’s mechanisms to prevent chemical terrorism are less clear, but that they do exist, and it is important for states parties and the secretariat to remain focused on addressing this threat. He also covers the secretariat’s work with states parties to ensure national implementation of the Convention and the outcomes of the 2018 Fourth Review Conference.

Nikitin, Mary Beth. “Resurgence of Chemical Weapons Use: Issues for Congress.” *CSR Reports*. Washington, DC: Congressional Research Service, March 11, 2022. <https://crsreports.congress.gov/product/pdf/IN/IN10936>.

In this Insight brief from the Congressional Research Service, Nikitin provides an overview of recent uses of CW, the OPCW, and its recent work in Germany, Iraq, Malaysia, and Syria. She also provides a summary of U.S. sanctions levied under the Chemical and Biological Weapons Control and Warfare Elimination Act of 1991 against Syria, North Korea, and Russia. She also covers the Commerce Department’s addition of several Russian, German, and Swiss chemical companies and Russian Ministry of Defense facilities to its entities list in response to their proliferation activities in support of Russia’s WMD programs. She concludes by offering that Congress may wish to consider if the OPCW has adequate resources for investigations in addition for U.S. preparedness and deterrence.

Organisation for the Prohibition of Chemical Weapons. “History: Looking Back Helps Us Look Forward.” Organisation for the Prohibition of Chemical Weapons, 2023. <https://www.opcw.org/about/history>.

The historic CWC is the first multilateral disarmament agreement to call for the elimination of an entire category of weapons of mass destruction. After years of difficult negotiations, the UN Conference on Disarmament in Geneva adopted the CWC draft text on 3 September 1992, opened the CWC for signature on 13 January 1993 in Paris, and

the CWC entered into force on 29 April 1997. Since then, 193 states committed to the CWC, 98% of the global population live under the protection of the Convention, and 99% of the chemical weapons stockpiles declared have been verifiably destroyed. In recognition of its extensive efforts to eliminate chemical weapons, the CWC implementing body, the OPCW, was awarded the Nobel Peace Prize in 2013.

Trapp, Ralf. "Compliance Management Under the Chemical Weapons Convention." Geneva, Switzerland: United Nations Institute for Disarmament Research, 2019. <https://www.unidir.org/sites/default/files/2019-12/UNID%20WMD%20CE%20-%20Paper%203%20v3.pdf>.

In this report for the UN Institute for Disarmament Research, Trapp examines CWC compliance management mechanisms, practical experiences with compliance issues, and how the OPCW has historically handled compliance concerns and cases of non-compliance. In doing so, he covers implementation deficiencies that arose following the CWC's entrance into force as well as emerging issues with science and technology advancements, including technological and structural changes in the chemical industry. He concludes that the OPCW has successfully handled a variety of situations in which states parties fell short on implementing the CWC. However, he argues that these management mechanisms worked well only up until the use of Sarin and chlorine in Syria. He discusses the challenges these events and the use of a Novichok agent in Salisbury have posed in terms of polarization of the OPCW and its policymaking organs.

Trapp, Ralf. "The Chemical Weapons Convention – Past Success, Current Challenges." In *Preventing Chemical Weapons: Arms Control and Disarmament as the Sciences Converge*, edited by Michael Crowley, Lijun Shang, and Malcolm Dando, 25–68. Royal Society of Chemistry, 2018. <https://pubs.rsc.org/en/content/chapter/bk9781782626497-00025/978-1-78262-649-7>.

In this book chapter authored ahead of the Fourth Review Conference in 2018, Trapp offers comprehensive coverage of key concepts and provisions of the CWC, successes and failures in implementation, and the importance of science and technology advice in the operation of the Convention in the context of increasing convergence in arms control and disarmament. He examines several overarching challenges facing the CWC and the OPCW, including an evolving security environment, advances in science and technology, industrial manufacturing, and policy making. Trapp also discusses the findings of several OPCW documents, including a 2011 report which determined that the prevailing conditions at the time of the Convention's negotiation are no longer characteristic of the current external environment, and a 2015 OPCW strategy paper that found substantial investments in a wide range of areas would be needed to shift the organization from chemical weapons disarmament to preventing re-emergence of these weapons. He argues that convergence can be useful not just to scientists, but also security and arms control practitioners in implementing treaties and maintaining international norms against chemical and biological weapons (CBW).

Panel 2: Looking Ahead to the Next 25 Years

- What challenges should we anticipate, both technical and political?
- How should the CWC and OPCW adapt?
- Are such adaptations politically plausible?

Costanzi, Stefano, and Gregory D. Koblentz. “Controlling Novichoks after Salisbury: Revising the Chemical Weapons Convention Schedules.” *The Nonproliferation Review* 26, no. 5–6 (September 2, 2019): 599–612. <https://doi.org/10.1080/10736700.2019.1662618>.

In this *Nonproliferation Review* written ahead of the 2019 Conference of states parties to the CWC, Costanzi and Koblentz examine now successful proposals to expand coverage of the Convention’s Schedule 1 to include Novichok agents in the verification system. Focusing on the assassination attempt against the Skripals in Salisbury, United Kingdom in 2018, they offer a review of the event, the CWC schedules as they previously existed, and the difficulties posed by uncertainty about Novichok agents in responding to this incident. They examine both the American-Canadian-Dutch and Russian proposals to amend the CWC’s schedules by adding Novichok agents, identifying loopholes and other shortcomings in the latter. They also offer recommendations for optimal implementation and considerations for including precursors in national and multinational export-control lists, such as those made by the Australia Group. The CWC’s Schedule 1 was later successfully amended, making this piece useful in providing context and analysis of considerations made at the time these discussions occurred when it was clear the Convention needed to be updated.

Costanzi, Stefano, and Gregory D. Koblentz. “Strengthening Controls on Novichoks: A Family-Based Approach to Covering A-Series Agents and Precursors under the Chemical-Weapons Nonproliferation Regime.” *The Nonproliferation Review* 28, no. 1–3 (February 15, 2022): 95–113. <https://doi.org/10.1080/10736700.2021.2020010>.

This piece from Costanzi and Koblentz builds on the previous piece, evaluating revisions made to the CWC schedules and the Australia Group’s list of CW precursors in light of the Navalny incident in 2020, during which a Novichok agent not covered by the amended schedules was used in the assassination attempt. They argue that the CWC and Australia Group should instead use a family-based approach to Novichok agents and their precursors, rather than one that uses individually enumerated chemicals. In doing so, they offer analysis of the Navalny incident as well as the limitations of Schedule 1 and export-controls, even with the changes made after the Skripal incident and the Convention’s general purpose criterion under Article II, and the potential future misuse of Novichok agents by states and non-state groups.

Ham, Peter van, Sico van der Meer, and Malik Ellahi. "Chemical Weapons Challenges Ahead: The Past and Future of the OPCW." *Netherlands Institute of International Relations Clingendael*. The Hague: Clingendael Institute, October 2017.

https://www.clingendael.org/sites/default/files/2017-10/Clingendael_Report_Chemical_Weapons_Challenges_Ahead_2017.pdf.

The authors address debates regarding whether the OPCW can successfully downsize and refocus with its verification mission nearly complete. Using existing literature and interviews with experts, the authors build on previous works from the OPCW and other organizations to assess the Organisation's track record, present a detailed case study of its work Syria, and determine what challenges the OPCW is likely to face in the coming years. The authors conclude that the OPCW has a history of success, but it needs to change its focus from disarmament to non-proliferation to remain relevant. They offer several recommendations, including protecting and strengthening norms against CW and working to ensure policymakers fully understand technical advice from the Scientific Advisory Board.

Mendelsohn, Joshua, Stephanie Young, Jenny Oberholtzer, Yousof Abdelfatah, Gregory Weider Fauerbach, Natasha Lander, and Paul S. Steinberg. "Using Social Media to Extract Information About Chemical Weapons Incidents." Santa Monica, CA: RAND Corporation, 2022.

https://www.rand.org/pubs/research_reports/RRA620-1.html.

This report offers a methodology for using social media to analyze CW incidents and a demonstration using the Syrian Civil War as a case study. The authors created a four-step process that includes identifying operationally relevant factors and examining known events to find incident indicators; developing a feed of social media data; conducting automated daily scans for use of keywords in social media data; and analyzing flagged posts to verify detection and extract information. While the authors note that there would be several operational challenges in further developing and implementing this procedure, including staffing enough analysts to manage such a project, this does offer an innovative way to help address the changing nature of the CW threat.

Panel 3: CWC Verification: from Implementation to Innovation?

- How should the CWC keep pace with S&T changes?
- Should the OPCW seek to revive the dormant challenge inspection mechanism?
- Is it time for a CWC Additional Protocol that restructures verification and compliance regime from a quantitative system to a more robust qualitative system?

Anthony, Ian. "Strengthening Global Regimes: Addressing the Threat Posed by Chemical Weapons." SIPRI Policy Paper No. 57. Stockholm, Sweden: Stockholm International Peace Research Institute, November 2020. <https://www.sipri.org/publications/2020/sipri-policy-papers/strengthening-global-regimes-addressing-threat-posed-chemical-weapons>.

Anthony examines the work of the OPCW following the 2018 Special Session of the states parties, assessing how effective the organization has been at handling tasks like investigating CW use in Syria as it is increasingly shifting from handling disarmament and interstate conflict to internal conflicts and non-state armed actors. He argues that, as the CWC was designed to detect and handle large-scale state CW programs, the Convention's verification system must adapt to meet the increasing threat of small, well-hidden CW programs and unusual delivery means. He also cautions that the OPCW will be impacted by resource constraints amid global economic challenges, so states parties must ensure the organization remains sufficiently staffed, resourced, and able to effectively investigate incidents. Anthony offers five recommendations, including focusing national and regional CW exercises on conducting investigations to identify perpetrators, and the OPCW expanding development of forensic science as an instrument of CW disarmament and attribution.

Claeys, Suzanne, Rebecca Hersman, and Cyrus Jabbari. "Rigid Structures, Evolving Threat: Preventing the Proliferation and Use of Chemical Weapons." Center for Strategic and International Studies, December 18, 2019. <https://www.csis.org/analysis/rigid-structures-evolving-threat-preventing-proliferation-and-use-chemical-weapons>.

The authors highlight growing challenges to the anti-CW regime since 2012, focusing on the changing security environment and challenges to the system of restraint. The authors argue that the system of restraint must adapt to prevent the proliferation and use of CW from becoming an endemic issue in global security again. They identify several gaps and challenges, including disinformation and CW's threat landscape shifting from industrial-scale, state-run CW programs to small-scale and limited use operations. The report concludes with several recommendations centered around adapting the CW regime to the current security environment, improving accountability and enforcement, adapting deterrence approaches, reducing benefit and utility to users, addressing disinformation, and broadening engagement with the international community.

Nguyen, Tuan H. "Countering the Future Chemical Weapons Threat." *Science* 376, no. 6591 (April 22, 2022): 355–57. <https://doi.org/10.1126/science.abo6380>.

Nguyen examines the challenges an evolving security environment and changing chemical industry pose to the OPCW as it moves from CW elimination mission to a preventing CW re-emergence mission dominated by nonproliferation and threat reduction activities. He argues that a next generation OPCW, or OPCW 2.0, must be able to reinforce norms against CW, anticipate future challenges posed by S&T advancements, become more qualitative in its verification system, and keep pace with technological changes. He also argues that the greatest issue for the OPCW now is not that there is a problem with the CWC's legal structure or that there is a lack of tools for the organization, but whether there is political will to use these tools and maintain the Convention's efficacy. He further states that the path that the OPCW 2.0 takes will determine whether the CWC continues to be celebrated as a model for multilateralism or risks becoming less effective in the future.

Rodda, Kabrena E., Kristin M. Omberg, Lori Brown, and Doug M. Rice. "Tools and Incentives for Implementing Codes of Ethics to Help Prevent the Reemergence of Chemical Weapons." *Journal of Chemical Education* 97, no. 7 (January 21, 2020): 1731–38. <https://doi.org/10.1021/acs.jchemed.9b00940>.

Rodda et al. discuss challenges in ethics and those posed to the CWC and OPCW's work by the convergence of chemistry and biology's blurring of regulatory framework boundaries. While they note the importance of ethical codes and guidelines like The Hague Ethical Guidelines and the Global Chemists' Code of Ethics, they argue these measures hardly ensure ethical behavior. Furthermore, they explain that ethics failures typically arise due to a lack of shared investment in an organization's mission. They propose potential solutions to these problems, including implementation of scenario-based e-learning designed to help scientists and trainees practice ethical behavior and to help prevent CW reemergence.

Panel 4: The Troubled Global Norms

- Are the norms against chemical and biological weapons strong or weak? Are they becoming stronger or weaker?
- How are those norms affected by developments in the nuclear nonproliferation regime?
- What additional steps can and should be taken to strengthen anti-CBW norms?

Blair, Christopher W., Jonathan A. Chu, and Joshua A. Schwartz. "The Two Faces of Opposition to Chemical Weapons: Sincere Versus Insincere Norm-Holders." *Journal of Conflict Resolution* 66, no. 4–5 (December 27, 2021): 677–703. <https://doi.org/10.1177/00220027211057057>.

Blair et al. use a list design survey to examine the strength of WMD taboos and the difficulties posed by insincere norm-holders in measuring the strength of norms in international politics. They define insincere norm-holders as those who publicly voice

support for an anti-weapons norm despite privately held counter beliefs because they fear negative consequences of publicly voicing counter-normative beliefs about morally salient norms. They argue that it is important to identify insincere norm-holders and account for them in policymaking to avoid overstating the true strength of norms. Their survey, fielded to members of the U.S. public, found that there are insincere norm-holders in the public and that accounting for them almost doubles the estimated percentages of Americans willing to use chemical weapons in war. In total, their surveys found that between 10% and 17% of Americans falsify their preferences regarding CW use when they are asked directly, carrying complicated implications for how scholars and practitioners consider norms against CW use.

Caves Jr., John P., and W. Seth Carus. "Controlling Chemical Weapons in the New International Order." *CSWMD Proceedings*, August 2022.

<https://wmdcenter.ndu.edu/Publications/Publication-View/Article/3144576/controlling-chemical-weapons-in-the-new-international-order/>.

Caves and Carus try to determine if the CWC and OPCW can remain an effective force to prohibit and control CW in an increasingly anarchic world order. In addition to the changing purpose of the OPCW, they also focus on the departure from consensus-based decision making the organization enjoyed in the CWC's first 15 years. Within this, they discuss Russia, China, and Iran's opposition to majority voting on substantive matters and their insistence that such changes require amendments to the Convention, a process that would essentially give dissenting parties a veto on measures like empowering the OPCW to attribute CW use to a specific actor, a measure Russia notably opposes. They argue that the United States should view attacks on the CWC as efforts by Russia, China, and Iran to erode global norms, that the United States should improve its chemical defense programs, and that it should sustain and increase its support for victims of CW use and efforts to bring accountability for CWC violations.

Masterson, Julia. "Reinforcing the Global Norm Against Chemical Weapons Use." Policy White Papers. Washington DC: Arms Control Association, February 18, 2021.

<https://www.armscontrol.org/policy-white-papers/2021-02/reinforcing-global-norm-against-chemical-weapons-use>.

Masterson argues that systematic violations of the CWC and malign use of chemical agents have gone without adequate accountability for nearly a decade, threatening norms against CW use and risking more severe or widespread incidents in the future. She argues that there is an urgent need to find and implement further, more creative means of reinforcing and strengthening norms against CW use. Masterson offers several approaches the OPCW and states parties can take to reinforce this norm, including establishing a precedent for challenge inspections, clarifying what rights and privileges will be revoked under the CWC for noncompliance, and expanding the mandate of the Investigation and Identification Team to allow it to investigate alleged CW use by a state party. She also argues that partner states should consider expanding the International Partnership Against Impunity for the Use of Chemical Weapons to include a majority of OPCW member states, the OPCW should create a process where findings attributing CW use are near-automatically referred to national or international courts, and the

international community should pursue prosecution of those who use CW to create a credible deterrent.

Poor Toulabi, Biejan. “The Myth of the ‘Poor Man’s Atomic Bomb’: Knowledge, Method, and Ideology in the Study of Chemical, Biological, and Nuclear Weapons.” *Journal of Global Security Studies* 8, no. 1 (January 12, 2023). <https://doi.org/10.1093/jogss/ogac037>.

Poor Toulabi refutes the idea that CBW is the “poor man’s atomic bomb”—a cheap alternative to nuclear weapons with a lower barrier to entry. He argues that this characterization makes analysts and policy makers view the history and future of CBW as characterized by inevitable spread, particularly outside of the West. To do so, he first challenges how others use Horowitz and Narang’s data set on CBW programs, a frequently cited data set in CBW proliferation literature. He argues that analysts often poorly define core concepts like interest in CBW, leading to flawed analyses that erroneously scrutinize states that do not and have not had CBW. He then discusses the history of the “poor man’s atomic bomb” understanding of CBW, arguing that many falsely view these weapons as inherently desirable and easy to spread. He concludes that these issues are perpetuated by a revolving door between government, academia, and think tanks that creates an echo chamber in relevant expert communities.

Shang, Lijun, Tatyana Novosiolova, Michael Crowley, Brett Edwards, Simon Whitby, and Malcolm Dando. “Biological and Chemical Security after COVID-19: Options for Strengthening the Chemical and Biological Weapons Disarmament and Non-Proliferation Regimes.” London Met Repository. London: London Metropolitan University, February 8, 2021. <https://repository.londonmet.ac.uk/6331/>.

This report, written in light of changing biosecurity governance in the United Kingdom, aims to assess the health of the Biological and Toxin Weapons Convention (BTWC/BWC) and CWC, and identify opportunities to maintain their relevance in a changing security environment defined by rapid S&T advancements. They argue that both regimes need to be strengthened, particularly as the BTWC lacks an enforcement mechanism and the OPCW is less able to operate under consensus agreements now. Their recommendations for strengthening the BTWC include further development of the BTWC Cooperation Database, development of a biological security code of conduct, and improving Confidence Building Measures. Their recommendations for the CWC focus on improving international cooperation on tracking uses of Novichok agents, holding those who use CW accountable, and law enforcement forces’ use of riot control agents.

Stewart, Mallory. “Defending Weapons Inspections from the Effects of Disinformation.” *AJIL Unbound* 115 (2021): 106–10. <https://doi.org/10.1017/aju.2021.4>.

Stewart tackles the damage disinformation does to arms control treaties and trust in weapons inspectors themselves, providing a case study of the disinformation campaign aimed at preventing accountability for CW use in Syria. She covers the large-scale efforts by Syria, Russia, and Iran to flood the internet with conflicting media stories about CW use in Syria following the OPCW’s repeated expert confirmation of attribution to the

Syrian government. She argues that these efforts have been virtually unmitigated successes for the Syrian government, poking enough holes in inspectors' and CW experts' conclusions to allow governments and the public to ignore the issue. To combat this, Stewart suggests scaling successful micro-level relationship building done by expert organizations to a much broader scale to increase understanding and trust between states and in these processes. She points to existing efforts to reduce distrust as promising examples of this idea's merit, including the Cooperative Monitoring Center at Sandia National Laboratories.

Panel 5: The Troubled Enforcement Mechanism

- What role can and should the UN Security Council have in treaty enforcement?
- What role has it played and can it be expected to play?
- What are the prospects for P5 cooperation to enable multilateral arms control?

Findlay, Trevor. "The Role of International Organizations in WMD Compliance and Enforcement: Autonomy, Agency and Influence." United Nations Institute for Disarmament Research, December 14, 2020. <https://unidir.org/publication/role-international-organizations-wmd-compliance-and-enforcement-autonomy-agency-and>.

Findlay examines the role of multilateral verification bodies in handling non-compliance and enforcement, how they develop agency and influence in doing so, and how this capacity can be enhanced. Findlay explains that secretariats of WMD organizations are supposed to be impartial and professional in their technically focused work, though their role becomes politically sensitive and critical once allegations of non-compliance emerge. He argues that secretariats' credibility in these situations depends on their agency and influence, which they can grow by making themselves indispensable to member states and the broader international community. Findlay identifies engaging with multiple stakeholders, aiming for excellence in human and technical resources, providing timely and sustainable implementation assistance, and ensuring appropriate organizational culture as the core means by which a secretariat can grow and maintain its influence and agency. Throughout this piece, he identifies ways secretariats can be supported in achieving these goals and common challenges negotiators face in ensuring this, such as shielding these bodies from political interference.

Trapp, Ralf, and Cheng Tang. "Enhancing the Management and Enforcement of Compliance in the Regime Prohibiting Chemical Weapons." Geneva, Switzerland: United Nations Institute for Disarmament Research, December 28, 2021. <https://www.unidir.org/publication/enhancing-management-and-enforcement-compliance-regime-prohibiting-chemical-weapons>.

Trapp and Cheng argue that the international community should improve the management and enforcement of compliance with the CWC and explain how this could happen. They provide an overview of the status of compliance in recent years and examine the compliance mechanisms available under the CWC, outside the Convention, and those available to individual states. They offer six recommendations for improving tools for management and enforcement of compliance, including measures like

strengthening the OPCW's forensic and analytical capabilities in the Technical Secretariat and its designated laboratories, and developing OPCW training to help law enforcement officers, prosecutors, and judges better understand crimes involving chemical weapons.

Panel 6: The Troubled Connections of Bilateral and Multilateral Arms Control

- What impact has the erosion and prospective end of bilateral US-Russian arms control had on the multilateral arms control regime?
- Is China's unwillingness to join the arms control process consequential for the multilateral regime?
- What can be done to insulate the multilateral regime from difficulties in major power relations?

Allison, David M., and Stephen Herzog. "What about China? And the Threat to US-Russian Nuclear Arms Control." *Bulletin of the Atomic Scientists* 76, no. 4 (July 3, 2020): 200–205. <https://doi.org/10.1080/00963402.2020.1778370>.

Allison and Herzog examine domestic political tensions in the United States, and the decline of bipartisan agreement on bilateral nuclear treaties with Russia during the Trump administration as the United States increasingly focused on China's nuclear arsenal in negotiations with Russia. Written before the extension of the New Strategic Arms Reduction Treaty (New START) in 2021, the authors explore what might have happened had Washington and Moscow failed to extend the treaty amid the U.S. administration's insistence that there be a trilateral treaty with China. They explain that, as China was clear it was uninterested in entering a trilateral agreement, the administration risked jeopardizing bilateral arms control with Russia because of heavily politicized concerns about a third party with a much smaller arsenal. They argue that the United States would benefit much more in managing China's rise by continuing to embrace arms control with Russia, preventing arms racing and signaling reliability. Despite the eventual extension of New START, this piece still offers insight into managing factors like domestic political tensions and competing international concerns in arms control.

Meier, Oliver, and Michael Staack. "Engaging China on Multilateral Arms Control." *Arms Control Today*, December 2022. <https://www.armscontrol.org/act/2022-12/features/engaging-china-multilateral-arms-control>.

Meier and Staack argue that further developing the multilateral arms control architecture and addressing challenges in international arms control, such as those posed by Iran and North Korea, will be easier if China is actively included in negotiations. They begin by discussing China's more assertive nature at the 10th NPT review conference in August 2022, noting the PRC's opposition to increased commitments on transparency and its successful rebuffing of calls for a fissile material moratorium. Furthermore, they argue engagement with China in this area is necessary because of the country's military advancements and goal of being on-par with the United States military by 2050. They point to Chinese aspirations to be at least equal to the United States as the main driver of

the PRC's disinterest in engaging in U.S.-Russia nuclear negotiations, particularly as the PRC's stockpile is substantially smaller than the American and Russian ones. They conclude by advocating for an approach to engaging China on arms control that takes Beijing's opportunistic and propagandistic positions on disarmament as word and detaching arms control dialogue from the overarching geopolitical rivalry.

Schepers, Névine. "Transatlantic Security and the Future of Nuclear Arms Control." In *Strategic Trends 2022: Key Developments in Global Affairs*, edited by Brian Carlson and Oliver Thränert, 69–88. Zürich: ETH Zürich, Center for Security Studies, 2022. <https://www.research-collection.ethz.ch/bitstream/handle/20.500.11850/552693/1/ST2022-03-NS.pdf>.

Schepers discusses how Russia's war in Ukraine has harmed prospects for nuclear arms control, focusing on the damage it will do to the NPT regime with the future of the P5 process uncertain. He concludes that risk reduction measures in Europe's evolving security architecture is essential to preventing nuclear escalation. He also argues this can help to balance conflicting demands of strengthening deterrence and pursuing disarmament objectives. He notes this will make it even more difficult to adapt existing processes to include China. He concludes that a transatlantic approach to arms control must include national support and investments in arms control infrastructure from all states contributing to European security to be successful in this environment.

Wisotzki, Simone, and Ulrich Kühn. "Crisis in Arms Control: An Introduction." *Zeitschrift Für Friedens- Und Konfliktforschung* 10, no. 2 (October 2021): 183–94. <https://doi.org/10.1007/s42597-022-00074-8>.

Wisotzki and Ulrich outline this issue's focus on crisis in arms control, discussing the confluence of events that undermine norms and institutions, like the use of CW in Syria, and global events that otherwise hamper progress on international arms control, like the COVID-19 pandemic. In doing so, they offer insight into critical challenges facing the international community as the security environment continues to change. They stress the importance of understanding crises as exceptional opportunities to further arms control in light of challenges, noting that much of the global nuclear nonproliferation and bilateral arms control regimes came to be as a result of the world experiencing the Cuban Missile Crisis. They also highlight that there is often a difference in perception between diplomats and academics, providing the example that many diplomats saw the CWC as being in crisis because of the Assad government's use of CW despite academic research pointing to normative stability offered by the CWC and CW taboo. Finally, they discuss previous German peace and conflict work that warned of crises in arms control, and what it means amid Russia's war in Ukraine and Europe's changing security environment.

Panel 7: Leadership and the Fate of the Multilateral Treaty Regime

- What lessons follow for the U.S. leadership role?
- What leadership should be asked of others?
- What does leadership entail?

Moodie, Michael, and Jerry Zhang. "Bolstering Arms Control in a Contested Geopolitical Environment." Washington DC: Stimson Center, October 31, 2022. <https://www.stimson.org/2022/bolstering-arms-control-in-a-contested-geopolitical-environment/>.

Moodie and Zhang argue that despite unprecedented pressure and challenges in international arms control, cooperation in this area remains critical as it can encourage responsible competition between great powers, avoid advanced weapons proliferation, and reduce the risk of unintended escalation. They explain that the threat of China's rise, instability brought by Russia's invasion of Ukraine, and concerns about weak international organizations, though difficult for international arms control, could make it even more crucial for promoting global security and stability. They specifically address the importance of securing China's involvement in arms control, noting that the country is comparatively much less experienced in arms control than other major powers, and that it is reluctant to join binding agreements that would limit its strategic arsenal. Finally, Moodie and Zhang offer three recommendations—"sustaining long-term engagement between major powers; adopting a multi-stakeholder approach by including smaller states and non-government entities in the process; and reconceptualizing the fundamentals of arms control."



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