THE NONPROLIFERATION CORPUS JURIS: A COHERENT APPROACH TO THE INEFFICIENCIES OF NUCLEAR NONPROLIFERATION LAW

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ABSTRACT

It is largely undisputed among international legal scholars and policymakers that the Treaty on the Nonproliferation of Nuclear Weapons ("NPT") has improved international security since entering into force in 1970. Nonetheless, the nuclear nonproliferation regime—the collection of laws, agreements, institutions, and cooperative efforts established to counter the spread of nuclear weapons—contends with inefficiencies akin to the diseconomies of scale that affect firms in microeconomics theory. In this regard, the international community faces a paradoxical situation with respect to nonproliferation—the nonproliferation regime is both effective

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yet inadequate, and necessary yet fragile. How might international and domestic laws and policies align to ensure that the regime does not regress in light of the enforcement, geopolitical, and technological challenges that it faces?

This Article argues that the long-term viability of the nonproliferation regime depends on the capacity of policymakers and legislators to identify and redress a foundational miscommunication between members of the international community regarding the primary objectives of the regime. This Article addresses this "original miscommunication" through a system-level analysis designed to evaluate the linkages between the myriad sources of nonproliferation law. Based on this analysis, this Article identifies three coordination inefficiencies resulting from the regime's original miscommunication: (1) divergence between the bilateral and multilateral levels of nonproliferation law; (2) poorly calibrated treaties; and (3) a suboptimal enforcement environment. By signaling the importance of developing a coherent approach to these inefficiencies, this Article seeks to promote improved policy outcomes and to enable future nonproliferation laws to serve as platforms to develop a unified approach to the core objectives of the regime.

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INTRODUCTION

In microeconomics theory economies of scale characterize the cost advantages that a firm obtains as it increases in size and complexity.[1] As the firm expands its operations, factors such as improved logistics, lower input costs, and more efficient production decrease the average cost of output.[2] By contrast, diseconomies of scale occur when a firm exceeds its optimal size and suffers inefficiencies that increase average costs and reduce profits over time.[3] Several diseconomies may reduce productivity, including poor communication within the firm, wasteful allocation of resources, and low worker motivation.[4] Taken together, these inefficiencies underscore the reality that firms at varying stages of development respond differently to internal pressures and externalities.

Although the analogy is not quite a perfect fit, the concept of diseconomies of scale offers useful insights into the legal framework that underpins the nuclear nonproliferation regime. In certain respects, the nonproliferation regime is similar to a firm, with its inputs consisting of the collection of laws,

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[1] *Economies of Scale*, A DICTIONARY OF HUMAN GEOGRAPHY (2013) (defining economies of scale as "[t]he cost savings that accrue to a firm or a set of firms from increasing in size").

[2] *See id*.; CAMPBELL R. MCCONNELL ET AL., ECONOMICS: PRINCIPLES, PROBLEM, AND POLICIES 167-69 (Elizabeth Clevenger et al. eds., 18th ed. 2009).

[3] *See* MCCONNELL ET AL., *supra* note 2, at 169 (noting that "[i]n time the expansion of a firm may lead to diseconomies and therefore higher average total costs").

[4] *See id*.

agreements, institutions, and cooperative efforts established to counter the spread of nuclear weapons.[5] However, the question arises as to whether these inputs contribute to the accomplishment of the core objectives of the nonproliferation regime, or whether they lead to inefficiencies akin to the diseconomies that a firm may face.[6]

It is largely undisputed among nonproliferation scholars that the regime has positively impacted international security since the foundational Treaty on the Nonproliferation of Nuclear Weapons ("NPT") entered into force in 1970.[7] Contrary to early predictions that twenty-five to thirty states would have nuclear weapons by the end of the 1970s, today only nine states possess nuclear weapons.[8] Scholars laud several key achievements of the regime, including the widespread ratification of the NPT,[9] the establishment of the

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[5] *See* MARIA ROST RUBLEE, NONPROLIFERATION NORMS: WHY STATES CHOOSE NUCLEAR RESTRAINT 38-39 (2009).

[6] *See id.*; MCCONNELL ET AL., *supra* note 2, at 169.

[7] Treaty on the Non-Proliferation of Nuclear Weapons, Mar. 5, 1970, 729 U.N.T.S. 161 [hereinafter NPT]; *see also* Michael E. O'Hanlon et al., *Experts assess the nuclear Non-Proliferation Treaty, 50 years after it went into effect*, BROOKINGS INST. (Mar. 3, 2020), https://www.brookings.edu/blog/order-from-chaos/2020/03/03/experts-assess-the-nuclear-non-proliferation-treaty-50-years-after-it-went-into-effect/.

[8] Thomas Graham, Jr., *South Asia and the Future of Nuclear Nonproliferation*, ARMS CONTROL TODAY, May 1998, at 3 ("In the 1960s, it was widely predicted that there would be 25-30 declared nuclear-weapon states in the world by the end of the 1970s . . . ."); Hans M. Kristensen & Matt Korda, *Status of World Nuclear Forces*, FED'N AM. SCIENTISTS, https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/ (last updated Sept. 2020).

[9] *See Preserving the Legacy: NPT Depositary Conference on the 50th Anniversary of the Opening for Signature of the Treaty on the Non-Proliferation of Nuclear Weapons*, U.S. STATE DEP'T (Margaret Rowland

International Atomic Energy Agency ("IAEA") and its safeguards protocols,[10] and the advancement of a norm against the spread of nuclear weapons.[11] In addition, members of the international community have developed a mosaic of international and domestic laws to regulate nuclear activities.[12] Building upon the NPT, these efforts contribute to a wide-ranging legal framework—what this Article refers to as the nonproliferation *corpus juris*. This framework is central to the nonproliferation regime, particularly in light of the challenges

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& Paul Warnke, Rapporteurs), https://www.state.gov/wp-content/uploads/2020/03/Summary-NPT-Depositary-Conference-on-the-50th-Anniversary-of-the-Opening-for-Signature-of-the-NPT-Treaty-002.pdf.

[10] The Statute of the IAEA was approved on October 23, 1956 and entered into force on July 29, 1957. *See* Statute of the IAEA, Oct. 23, 1956, https://www.iaea.org/sites/default/files/statute.pdf; *Statute*, INT'L ATOMIC ENERGY AGENCY, https://www.iaea.org/about/overview/statute (last visited Apr. 11, 2022); *see also The Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons*, INT'L ATOMIC ENERGY AGENCY (June 1972), https://www.iaea.org/sites/default/files/publications/documents/infcircs/1972/infcirc153.pdf. The subsequent ratification of the NPT was critical in enabling the IAEA to take on a central role in promulgating global nuclear safety and security standards. *See* O'Hanlon et al., *supra* note 7 ("Without the treaty, and the confidence provided by its IAEA verification system that nuclear equipment and materials would not be diverted to the production of nuclear weapons, the widespread use of nuclear energy for peaceful purposes would not have been possible.").

[11] *See* O'Hanlon et al., *supra* note 7 ("Without the treaty, the powerful norm against proliferation it created, its associated controls on exports of sensitive technologies, the rigorous International Atomic Energy Agency (IAEA) monitoring system, and the threat of sanctions for violating nonproliferation obligations, we would be living in [a] world of many nuclear-armed states . . . .").

[12] *See infra* section I.B.

of consent and enforcement that characterize international law.[13]

Much like a firm facing diseconomies, however, the nonproliferation regime contends with inefficiencies related to the steady accumulation of "inputs" in the form of treaties and other laws. Acknowledging the threats that face the enterprise, scholars and policymakers warn that the regime's achievements are neither inevitable nor impervious to regression.[14] As Steven E. Miller, Director of the International Security Program at the Belfer Center for Science and International Affairs, writes, "[t]oday the NPT regime is widely regarded as a system in distress. It is commonly described as troubled, jeopardized, derailed, unraveling—eroding under the pressure of unresolved compliance crises, inadequate enforcement, diplomatic friction and distrust, spreading nuclear technology, and member-state dissatisfaction."[15] Articulating an understanding shared widely within nonproliferation circles, Miller notes that the tension between the importance of the nonproliferation regime and

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[13] *See* MICHAEL J. GLENNON, THE FOG OF LAW: PRAGMATISM, SECURITY, AND INTERNATIONAL LAW 135 (2010) ("The international legal system cannot compel a state to subscribe to a rule unless it consents to do so."); Steven E. Miller et al., *Nuclear Collisions: Discord, Reform & the Nuclear Nonproliferation Regime*, AM. ACAD. OF ARTS & SCIS. (2012) ("International legal regimes depend on consent. Making and enforcing rules requires that states accept legal limits on their behavior and that they allow their behavior to be audited by some enforcement body.").

[14] *See* O'Hanlon et al., *supra* note 7; Paul Meyer, *The Nuclear Nonproliferation Treaty: Fin de Regime?*, ARMS CONTROL ASS'N (Apr. 2017), https://www.armscontrol.org/act/2017-04/features/nuclear-nonproliferation-treaty-fin-de-regime ("An existential threat to the NPT has emerged that will require dedicated remedial action if the treaty is to mark its golden anniversary at its next review conference in 2020.").

[15] Miller et al., *supra* note 13.

concerns of its impending failure underscores the "paradox" of the regime: "crucial but fragile, resilient but menaced, effective but potentially inadequate."[16] Furthermore, and contrary to the view that the promulgation of laws across a broad range of fields uniformly contributes to positive outcomes, concerns about the nonproliferation regime's viability have mounted as the nonproliferation *corpus juris* has expanded in complexity.[17]

What, then, explains this paradox? Thus far, nonproliferation scholars have adopted one of two approaches. The first approach is to focus on the shortcomings of the NPT as a standalone agreement, including its inability to effectively address issues such as the nuclear aspirations of breakout states,[18] the threat of nuclear terrorism,[19] and the disarmament

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[16] *Id*.

[17] *See* JACK L. GOLDSMITH & ERIC A. POSNER, THE LIMITS OF INTERNATIONAL LAW 86 (2005) ("The past sixty years have witnessed an explosion of [multilateral] agreements, especially treaties . . . . A multilateral treaty . . . can identify focal points that align expectations about which behaviors count as cooperation . . . [and] can also lower the communication and related transaction costs of continued cooperation."); Philippe Sands, *Turtles and Torturers: The Transformation of International Law*, 33 N.Y.U. J. INT'L L. & POL. 527, 530 (2001) ("Treaties and other international obligations were adopted across a broad range of subject areas, establishing limits on sovereign freedoms."). For more on the expansion of the nonproliferation *corpus juris*, *see infra* notes 234-240.

[18] *See, e.g.*, Nah Ling Tuang, *The Road to a Nuclear Breakout: Comparing Iran and North Korea*, THE DIPLOMAT (Feb. 8, 2020), https://thediplomat.com/2020/02/the-road-to-a-nuclear-breakout-comparing-iran-and-north-korea/.

[19] *See, e.g.*, Imrana Iqbal, *International Law of Nuclear Weapons Nonproliferation: Application to Non-State Actors*, 31 PACE INT'L L. REV. 1, 3 (2018) (noting that the regime "provides no reliable protection against the risk of nuclear terrorism by non-State actors").

of existing nuclear arsenals.[20] The second approach is to attribute the nonproliferation regime's weaknesses to its incomplete nature. This approach manifests in several ways: (1) highlighting the absence of certain actors from the nonproliferation fold,[21] (2) arguing that the regime has not

[20] These critiques focus specifically on the failures of the NPT and the legal obligations that the Treaty sets forth. *See, e.g.*, Nobuyasu Abe, *The NPT at Fifty: Successes and Failures*, 3 J. FOR PEACE & NUCLEAR DISARMAMENT 224, 225 (2020) ("In terms of promoting nuclear disarmament, the NPT cannot claim to be very successful. Even after 50 years of its existence, there is a long way to go to achieve the goal set out in Article VI of the treaty."). As noted *infra* Part III, a distinction must be made between the failures of the NPT as a standalone agreement and the failures of the nonproliferation *corpus juris*. Although the NPT is the foundation of the nonproliferation *corpus juris*, the latter also encompasses the laws passed since the Treaty's entry into force.

[21] For instance, the four nuclear-armed states that are not parties to the NPT are Israel, India, Pakistan, and North Korea. *See* David S. Jonas, *Variations on Non-Nuclear: May the "Final Four" Join the Nuclear Nonproliferation Treaty as Non-Nuclear Weapon States While Retaining Their Nuclear Weapons?*, 2005 MICH. STATE L. REV. 417, 418-19 (2005). Scholars point to the inability of the regime to constrain the nuclear ambitions of certain states operating outside of the NPT framework as an explanation for its current fragility. Particularly with respect to North Korea, the nonproliferation regime's inability to halt the state's pursuit of nuclear weapons has rankled latent nuclear states. *See*, *e.g.*, Jake Adelstein, *Is Japan About to Hit its Nuclear Tipping Point?*, DAILY BEAST (Feb. 15, 2018), https://www.thedailybeast.com/is-japan-about-to-hit-its-nuclear-tipping-point; David Tweed et al., *Rift Grows Between US Allies Japan and South Korea Over North Korea's Nuclear Threat*, BLOOMBERG (Aug. 28, 2018), https://www.bloomberg.com/news/articles/2018-08-28/rift-grows-between-u-s-allies-over-north-korea-s-nuclear-threat.

expanded sufficiently,[22] and (3) noting that the rules in place to prevent nuclear proliferation are not properly enforced.[23]

Eschewing the conventional approaches, this Article proposes a novel explanation of the nonproliferation regime's weaknesses that considers the overall functioning of the nonproliferation *corpus juris*. Rather than focus on the merits (or shortcomings) of specific elements of the regime, this Article stresses the need to examine the linkages between, and the shared characteristics of, the constellation of laws that comprises the nonproliferation *corpus juris*. This analysis is accomplished through reference to the coordination inefficiencies of the nonproliferation *corpus juris*, which collectively undermine the effectiveness of the broader nonproliferation regime.[24] In addition, this system-level focus seeks to enhance the ability of scholars and policymakers to understand the source of these coordination inefficiencies and to address the challenges that threaten the regime's long-term viability.[25]

Accordingly, this Article proceeds in three parts. Part I begins with an introduction to the nonproliferation regime,

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[22] *See* PAUL LETTOW, STRENGTHENING THE NUCLEAR NONPROLIFERATION REGIME 3 (Council on Foreign Rels. ed. 2010) (noting "ambiguities and limitations in the current rules" that comprise the regime). According to Lettow, "The rules as currently applied have been unable to prevent the spread of enrichment and reprocessing, which can produce fuel for nuclear reactors or the fissile material for a nuclear weapon, to countries with unclear or military intentions." *Id*.

[23] *See id*. ("Those weaknesses . . . result from a failure to enforce the rules that exist.").

[24] These coordination inefficiencies are defined and discussed further *infra* Part III.

[25] *See supra* notes 18-20.

before turning to the four "levels" of law that comprise the nonproliferation *corpus juris*: the domestic, bilateral, regional, and multilateral levels. Part II then defines "inefficiency" as it is used in this Article. The Article establishes this definition through reference to the international human rights and global trade regimes, two enterprises that contend with their own systemic inefficiencies. Part III identifies the three coordination inefficiencies that affect the nonproliferation regime: (1) divergence between the bilateral and multilateral levels of nonproliferation law, (2) poorly calibrated treaties, and (3) a suboptimal enforcement environment. These inefficiencies derive from a foundational miscommunication that lies at the heart of the nonproliferation regime. This Article concludes with several courses of action through which policymakers and legislators may seek to develop a coherent approach to the regime's coordination inefficiencies.

I. THE BREADTH AND DEPTH OF THE NUCLEAR NONPROLIFERATION REGIME

Before identifying the coordination inefficiencies of the nonproliferation regime, it is first worthwhile to develop an understanding of the rules and institutions that comprise the regime. As such, section A provides an overview of the factors that led to the establishment of the nonproliferation regime and its constituent elements. Section B then turns to the body of law that regulates nuclear nonproliferation today, identifying nonproliferation laws that operate at four levels: (1) the domestic level, (2) the bilateral level, (3) the regional level, and (4) the multilateral level. Though the levels of law that

comprise the nonproliferation *corpus juris* derive from varying sources, globalization and expanded notions of extraterritorial jurisdiction have operated to steadily blur the lines between these levels.

A. The Constituent Elements of the Regime

The nonproliferation regime consists of "a network of agreements to reduce the demand for nuclear weapons, help guarantee the security of those nations that give up the nuclear option, and prevent the unregulated and widespread diffusion of dangerous nuclear technology and know-how."[26] However, nonproliferation scholars widely regard the NPT as the "central pillar" of the regime—the foundational agreement whose core provisions all subsequent additions to the regime acknowledge and expand upon.[27] This section begins with an historical overview of the motivations that compelled the international community to promulgate the NPT toward the end of the 1960s, before turning to the policies, institutions, and norms that comprise the nonproliferation regime today.

It is not surprising that the international community promulgated the NPT toward the end of the 1960s.[28] In the two decades following the U.S. atomic bombings of Hiroshima and Nagasaki, the Soviet Union, the United Kingdom, France, and

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[26] JOSEPH CIRINCIONE, BOMB SCARE: THE HISTORY & FUTURE OF NUCLEAR WEAPONS 42 (2008).
[27] Joseph M. Siracusa & Aiden Warren, *The Nuclear Non-Proliferation Regime: An Historical Perspective*, 29 DIPL. & STATECRAFT 3, 4 (2018).
[28] *See id*. at 4.

China had each developed nuclear weapons capabilities.[29] Moreover, early initiatives such as the Atoms for Peace program and the IAEA lacked the unifying quality necessary to advance a cohesive nonproliferation regime and to establish a norm against nuclear proliferation in international law.[30] In addition, nuclear brinksmanship between the United States and the Soviet Union became more pronounced in the early 1960s, and concerns mounted that at least two dozen states would possess nuclear weapons within twenty years.[31]

With the limitations of earlier initiatives in mind, states negotiating the NPT sought to promote the universal ratification of the instrument.[32] Despite cleavages existing among members of the international community—most prominently the dichotomy between the nuclear haves and have-nots—the NPT's "Grand Bargain" enabled near-universal ratification.[33] Under the terms of this bargain, member states committed 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, and on a treaty on general and complete disarmament under strict and

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[29] *Id*. at 5.

[30] Siracusa & Warren, *supra* note 27, at 4-5; Abe, *supra* note 20 ("The NPT succeeded in its initial task of preventing the proliferation of nuclear weapons among potential key players at the time of its entry into force in 1970 . . . , thus bringing near universal adherence to the treaty.").

[31] *See* Graham, Jr., *supra* note 8, at 3.

[32] *See* Abe, *supra* note 20.

[33] *See* JOZEF GOLDBLAT, NUCLEAR PROLIFERATION AND INTERNATIONAL SECURITY 9 (Morten Bremer Maerli & Sverre Lodgaard eds., 2007) ("To make the asymmetry of rights and obligations under the NPT acceptable to as many countries as possible, the NWS have committed themselves to negotiating nuclear disarmament and to contributing to the development and use of nuclear energy for civilian ends in NNWS.").

effective international control."[34] While the nonnuclear-weapon states ("NNWS") agreed never to acquire nuclear weapons, in exchange they received from the nuclear-weapon states ("NWS") guarantees "to share the benefits of peaceful nuclear technology and to pursue nuclear disarmament aimed at the ultimate elimination of their nuclear arsenals."[35] In this manner, from its inception the NPT articulated three pillars of the nonproliferation regime: (1) nonproliferation, (2) disarmament, and (3) peaceful use of nuclear technology.[36] Although the NPT and the Grand Bargain have faced criticism since 1970, they remain entrenched as cornerstones of the nonproliferation regime, evidenced by the NPT's indefinite extension at its 1995 Review Conference.[37]

Building upon the NPT, the nonproliferation regime has expanded in both breadth and depth over the past half century. Today, the regime consists of dozens of laws, policies, institutions, cooperative efforts, and informal arrangements intended "to reduce the demand for nuclear weapons, help guarantee the security of those nations that give up the nuclear option, and prevent the unregulated and widespread diffusion of dangerous nuclear technology and know-how."[38] Given the

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[34] *See* NPT, *supra* note 7, art. 6.
[35] Thomas Graham, Jr., *Avoiding the Tipping Point*, ARMS CONTROL ASS'N (2004), https://www.armscontrol.org/act/2004_11/BookReview.
[36] *See* Miller et al., *supra* note 13 ("The NPT is built around three pillars: nonproliferation, disarmament, and peaceful uses of nuclear technology."). These pillars bear on the "original miscommunication" that is discussed *infra* section III.A.
[37] *See* IAEA, *Fact Sheet on DPRK Nuclear Safeguards*, https://www.iaea.org/newscenter/focus/dprk/fact-sheet-on-dprk-nuclear-safeguards.
[38] CIRINCIONE, *supra* note 26, at 42.

myriad inputs that comprise the regime, it is worthwhile to separate these elements into three related categories: (1) the *institutional* framework, (2) the *normative* framework, and (3) the *legal* framework.[39]

First, the nonproliferation regime's institutional framework consists of organizations such as the IAEA, multilateral arrangements such as the Nuclear Suppliers Group and the Proliferation Security Initiative,[40] and a range of regional and bilateral initiatives.[41] Although these institutions each serve distinct purposes, together they form a robust functional apparatus.

Second, the nonproliferation regime's normative framework refers to the international social environment that shapes the regime. Defined as "'a standard of appropriate behavior for actors with a given identity,' norms are *shared* belief systems" that "send messages about what is and is not officially and unofficially acceptable."[42] Challenging

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[39] While these categories necessarily overlap, particularly with respect to institutions and their enabling legislation, this three-tiered heuristic is useful in understanding the roles that distinct mechanisms play within the broader regime.

[40] *See generally* Kyle Mathis, *The Nuclear Supplier Group: Problems and Solutions*, 4 ALA. CIV. RTS. & C.L. L. REV. 169 (2017); *Proliferation Security Initiative (*PSI), NUCLEAR THREAT INITIATIVE, https://www.nti.org/learn/treaties-and-regimes/proliferation-security-initiative-psi/ (last updated May 31, 2020).

[41] *See, e.g.*, *Cooperation in Nuclear Power*, WORLD NUCLEAR ASSOCIATION, https://www.world-nuclear.org/information-library/current-and-future-generation/cooperation-in-nuclear-power.aspx (highlighting bilateral research initiatives facilitated by the United States, China, Russia, and Euratom).

[42] RUBLEE, *supra* note 5, at 39-40. "Social psychology pinpoints three major types of norms, classified by how they are transmitted: descriptive norms, injunctive norms, and subjective norms." *Id*. at 40. *See also* Oona A. Hathaway, *Do Human Rights Treaties Make a Difference?*, 111 YALE L.J.

traditional neorealist and liberal institutionalist models of state behavior,[43] scholars have developed normative models of how ideas and values influence nuclear decision-making.[44] For the most part, these models acknowledge the importance of the NPT and subsequent nonproliferation laws in shaping the international social environment in which the nonproliferation regime operates.[45]

While there is growing consensus that this normative framework is an important element of the nonproliferation regime, there is less conformity as to which specific norms shape the international social environment. This division is a result of the challenge of advancing norms in international law. Given the necessity of consensus and challenges of enforcement that characterize international law, norms gain traction only when they attain the widespread recognition of

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1935, 1955-62 (2002) (parsing normative models of state compliance with international obligations).

[43] *See generally* Scott D. Sagan, *Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb*, 21 INT'L SEC. 54 (1996).

[44] This scholarship broadly constitutes the constructivist model of international relations. *See* Jonathan Cristol, *Constructivism*, OXFORD BIBLIOGRAPHIES, https://www.oxfordbibliographies.com/view/document/obo-9780199743292/obo-9780199743292-0061.xml ("The belief that reality is socially constructed leads constructivists to place a greater role on norm development, identity, and ideational power than the other major theoretical paradigms."). For constructivist explanations of the decision to pursue nuclear weapons, *see, e.g.*, RUBLEE, *supra* note 5; Sagan, *supra* note 43, at 73-85 ("A third model focuses on norms concerning weapons acquisition, seeing nuclear decisions as serving important symbolic functions—both shaping and reflecting a state's identity.").

[45] *See, e.g.*, RUBLEE, *supra* note 5, at 38.

the international community.[46] The norm most often discussed with respect to the nonproliferation regime is the norm against the spread of nuclear weapons.[47] However, even the notion of nuclear restraint, which guides the decision-making of most members of the international community, does not command universal adherence. As nonproliferation expert Maria Rost Rublee notes:

> Though it has taken a variety of forms, the rough normative trajectory within the international social environment has been to delegitimize nuclear weapons. . . . Nonetheless, the spread of the norm has been uneven and, in some cases, continues to face substantial resistance. . . . [W]hile nuclear weapons are no longer seen as simply conventional weapons and the nonproliferation norm has spread

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[46] *See* Miller et al., *supra* note 13 ("The international legal system cannot compel a state to subscribe to a rule unless it consents to do so. It cannot adjudicate the application of a rule to a state unless the state has accepted the jurisdiction of the tribunal to apply the rule. It cannot enforce a rule against a state unless the state has consented to the rule's enforcement."). There also is disagreement regarding the point at which a particular value transforms into a norm. *See, e.g.*, Martha Finnemore & Kathryn Sikkink, *International Norm Dynamics and Political Change*, 52 INT'L ORG. 887, 895, 904 (1998) (articulating a three-pronged norm "life cycle" that culminates in internalization, when norms "become so widely accepted that they are internalized by actors and achieve a 'taken-for- granted' quality that makes conformance with the norm almost automatic . . . .").

[47] *But see* Ramesh Thakur, *The NPT and Prohibition Treaty as Alternative Normative Frameworks for Global Denuclearisation*, https://www.recna.nagasaki-u.ac.jp/recna/bd/files/S2-2_Thakur_2.pdf ("In addition, as the NPT regime is treaty based, its normative reach does not extend to non-signatories.").

> widely, the global normative context is by no means uniform or unchanging.[48]

Ongoing efforts to expand the nonproliferation norm demonstrate "the strength of that norm, showing that it is not merely the regime that spurs states to act; the norm spurs states and others to act even outside the regime."[49]

The third framework of the nonproliferation regime is its *legal* framework, referred to in this Article as the nonproliferation *corpus juris*. The nonproliferation *corpus juris* is discussed separately in the following section due to the complexity of the four levels of law that comprise this framework.

B. The Nonproliferation Corpus Juris

Before delving into the constituent elements of the nonproliferation *corpus juris*, two caveats are worth noting. First, the majority of nonproliferation law is statutory.[50]

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[48] RUBLEE, *supra* note 5, at 37.
[49] *Id*. at 39.
[50] Of the four sources of law identified by the Statute of the International Court of Justice, the first, international conventions, relates most directly to nuclear nonproliferation. Statute of the International Court of Justice art. 38, June 26, 1945, 59 Stat. 1055, T.S. No. 993. The relevance of the second basis, customary law, is tenuous, as nonproliferation might not constitute an element of customary international law. *See, e.g.*, James A. Green, *India's Status as a Nuclear Weapons Power Under Customary International Law*, 24 NAT'L L. SCH. INDIA REV. 125, 132-33 (2012) ("Such contrary state practice means that it is impossible to view Article VI as being additionally binding in customary international law."). A similar question exists with respect to the third basis, *jus cogens*. In fact, the ICJ reiterated the difficulty of relying upon these sources of law in its Advisory

Several exceptions exist, in the form of judicial decisions, including the 1996 ICJ Advisory Opinion on the Legality of Threat or Use of Nuclear Weapons.[51] However, the authoritative value of this opinion is far from settled, and judicial decisions remain otherwise limited contributors to the nonproliferation *corpus juris*.[52]

The second caveat, which bears more directly on the nonproliferation regime today than it did in 1970, is that the lines between domestic and international sources of nonproliferation law are increasingly blurred.[53] As

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Opinion on the Legality of Nuclear Weapons. *See* Legality of Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226 (July 8), para. 105(2)(B) [hereinafter ICJ Advisory Opinion] ("There is in neither customary nor conventional international law any comprehensive and universal prohibition of the threat or use of nuclear weapons as such . . . ."). Fourth, "judicial decisions and the teachings of the most highly qualified publicists of the various nations" do not constitute an independent source of law, but rather present "subsidiary means for the determination of the rules of law." Statute of the International Court of Justice art. 38(1)(d).

[51] ICJ Advisory Opinion, *supra* note 50. In addition, on the domestic level states render judicial decisions that may contribute to the nonproliferation *corpus juris*. *See infra* note 66 and accompanying text. For a proposal to establish a judicial body dedicated to adjudicating issues related nuclear nonproliferation, *see generally* Anthony J. Colangelo & Peter Hayes, *An International Tribunal for the Use of Nuclear Weapons*, 2 J. PEACE & NUCLEAR DISARMAMENT 219 (2019).

[52] For more on whether an on-point ICJ Advisory Opinion would hold authoritative value, *see generally* Edvard Hambro, *The Authority of the Advisory Opinions of the International Court of Justice*, 3 INT'L & COMP. L.Q. 2 (1954).

[53] Furthermore, the following discussion does not include nonbinding commitments promulgated with nonproliferation-related ends in mind, such as the U.S.–North Korea Agreed Framework and the Joint Comprehensive Plan of Action. At least three rationales explain state preference for treaties over nonlegal agreements: "(1) treaties usually require legislative consent, a process that conveys important information about state preferences for the treaty; (2) treaties implicate certain interpretive default rules; or (3) treaties

traditionally formulated, international legal studies differentiated between two systems, "one promulgated by states themselves for their domestic relations, and the other promulgated among states for inter-state relations."[54] However, over the course of the twentieth century, "such a formal view of international law became inadequate" due to the transformative impact of globalization.[55] Even courts, the classical legal actors, have developed an increased willingness to "apply international norms transnationally, to engage in a transnational judicial dialogue, and even to adopt conceptions of universal jurisdiction."[56] Along with this change, the twentieth century also witnessed the inclusion of actors previously omitted from international law, including "[i]ndividuals, organizations, regional bodies, non-governmental institutions, and the like."[57]

Four levels of law contribute to the nonproliferation *corpus juris*: the domestic, bilateral, regional, and multilateral levels.[58]

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convey a more serious commitment than nonlegal agreements do." GOLDSMITH & POSNER, *supra* note 17, at 91.

[54] Milena Sterio, *The Evolution of International Law*, 31 B.C. INT'L & COMP. L. REV. 213, 214 (2008).

[55] *Id*. at 215.

[56] *Id*. Along with universal jurisdiction, several other concepts work to expand a State's jurisdiction over extraterritorial acts. *See* Christopher L. Blakesley, *United States Jurisdiction over Extraterritorial Crime*, 73 J. CRIM. L. & CRIMINOLOGY 1109, 1110 (1982) (noting "five theories of criminal jurisdiction: territorial; protective; nationality; universal; and passive personality").

[57] Sterio, *supra* note 54, at 216.

[58] This taxonomy is not meant to exhaustively detail the constituent elements of the nonproliferation *corpus juris* due to: (1) the breadth of applicable law (particularly at the domestic level) and (2) the uncertainty associated with defining the outer bounds of the *corpus juris*. The existing scholarship, however, has not yet proposed a taxonomy to classify the

Laws promulgated at each level regulate areas of concern to the nonproliferation regime, including nuclear security, nuclear weapons testing, arms control, proliferation financing, and civil and criminal punishment.[59] There are gaps in coverage and conflicts between these levels, and significant scholarship is devoted to determining whether nonproliferation laws are even enforceable.[60] Nonetheless, laws at each level have the potential to affect the conduct and policies of actors beyond their immediate jurisdictional reach. In this way, the law of nuclear nonproliferation is truly transnational.

1. The Domestic Level

Of the four levels of law that comprise the nonproliferation *corpus juris*, the first is the only one that does not fall within the Vienna Convention on the Law of Treaties. This

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totality of nuclear nonproliferation law across the domestic, bilateral, regional, and multilateral levels.

[59] A line-drawing challenge accompanies the identification of the constituent elements of the nonproliferation *corpus juris*, given that a substantial number of laws bear on nonproliferation. The ICJ itself grappled with this challenge in its Advisory Opinion regarding the treaties that address the legality of the use of nuclear weapons. *See* ICJ Advisory Opinion, supra note 50, ¶¶ 54-63; *see also* Michael N. Schmitt, *The International Court of Justice and The Use of Nuclear Weapons*, 7 U.S. A.F. ACAD. J. LEG. STUD. 57, 68 (1996–1997) ("[The ICJ] accurately found that in State practice [the treaties in question] have not . . . been interpreted to extend to [nuclear] weapons. . . . Though this approach is entirely consistent with standard practices in treaty interpretation the finding on this point was not unanimous.").

[60] *See, e.g.*, Ronald J. Sievert, *Working Toward a Legally Enforceable Nuclear Non-Proliferation Regime*, 34 FORDHAM INT'L L.J. 93 (2010); Cristian DeFrancia, *Enforcing the Nuclear Nonproliferation Regime: The Legality of Preventive Measures*, 45 VANDERBILT J. TRANSNAT'L L. 705 (2012).

Convention defines treaties as international agreements "concluded between States in written form and governed by international law, whether embodied in a single instrument or in two or more related instruments . . . ."[61]

By contrast, the first level features the domestic laws of individual states that bear on nuclear nonproliferation. To start, certain international laws may fold into a state's domestic legislation by virtue of treaty ratification.[62] In the United States, for instance, treaties are either self-executing, becoming judicially enforceable upon ratification, or non-self-executing, requiring implementing legislation.[63] Numerous nonproliferation conventions expressly call upon parties to incorporate their provisions into national law.[64]

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[61] Vienna Convention on the Law of Treaties art. 2, opened for signature May 23, 1969, 1155 U.N.T.S. 331.

[62] In the United States, treaties are constitutionally recognized as part of the Law of the Land. U.S. CONST. art. 6, § 2 ("[A]nd all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land . . . .").

[63] Carlos Manuel Vázquez, *Treaties as Law of the Land: The Supremacy Clause and the Judicial Enforcement of Treaties*, 122 HARV. L. REV. 599, 601 (2008) ("When confronted with treaties, the courts often address as a threshold question whether a treaty is 'judicially enforceable.' Often, though not always, they will address this question in the context of deciding whether the treaty is 'self-executing.'").

[64] *See, e.g.*, International Convention for the Suppression of Acts of Nuclear Terrorism art. 5, *adopted* Apr. 13, 2005, 2245 U.N.T.S. 89 [hereinafter Nuclear Terrorism Convention] ("Each State Party shall adopt such measures as may be necessary . . . [t]o establish as criminal offences under its national law the offences set forth . . . ."); Report of the Committee Established Pursuant to Security Council Resolution 1540 (2004), U.N. Doc. S/2008/493 (July 30, 2008) (discussing the domestic criminalization requirements of Resolution 1540). Challenges associated with the implementation of nonproliferation treaties are discussed *infra* section III.C.

Along with these obligations under international law, states pass domestic laws and render judicial decisions that contribute to the substantive goals of the nonproliferation regime. For instance, following the Second World War several states enacted atomic energy laws aimed at regulating dangerous nuclear materials and punishing illicit nuclear activities.[65] Domestic court decisions such as Japan's 1963 *Shimoda* case also articulate and arguably extend the objectives of the nonproliferation regime.[66] Although the policies that underlie these domestic laws vary, they each demarcate the jurisdictional reach of states on specified nonproliferation issues.

In light of the challenges of enforcement in international law, a range of domestic laws also have punitive objectives.[67]

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[65] For instance, in the United States 42 U.S.C. § 2077, originally enacted under the Atomic Energy Act of 1946, criminalizes the shipment, transfer, or possession of "special nuclear material." In addition, several decades later the U.S. government enacted the Nuclear Non-Proliferation Act of 1978 to promulgate a comprehensive framework regulating the nuclear fuel cycle and export controls. *See* P.L. 95-242, Mar. 10, 1978, *codified at* 22 U.S.C. § 3201 *et seq.* Other states have enacted similar legislation. *See, e.g.*, Atomgesetz [AtG] [Atomic Energy Act], Dec. 23, 1959, BGBL I at 1565 (Ger.).

[66] *Ryuichi Shimoda et al. v. The State* (下田(隆一)事件), *in* 8 JAPANESE ANN. INT'L L. 212 (1964). For more on the *Shimoda* case, *see* Richard A. Falk, *The Shimoda Case: A Legal Appraisal of the Atomic Attacks Upon Hiroshima and Nagasaki*, 59 AM. J. INT'L L. 759 (1965). U.S. courts have also heard cases that bear on nonproliferation. *See, e.g.*, *Republic of the Marshall Islands v. United States*, 79 F. Supp. 3d 1068, 1070 (2015) ("Plaintiff contends Defendants are in violation of their obligations under the [NPT] to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race.").

[67] *See* Sievert, *supra* note 60; DeFrancia, supra note 60. These articles offer recommendations on bolstering the effectiveness of the nonproliferation regime at the domestic level.

In the United States, for instance, the federal government has enacted nonproliferation laws in line with its traditional reservation of a "unilateral right to apply its criminal laws extraterritorially, with Congress expressly granting extraterritorial interdiction authority in specific instances . . . under the 'protective' principle of jurisdiction."[68] Generally, domestic laws face challenges with respect to their extraterritorial application.[69] However, certain domestic laws—for instance, U.S. civil asset forfeiture laws—have transcended national boundaries so as to contribute to the nonproliferation regime.[70]

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[68] DeFrancia, *supra* note 60, at 766-67.

[69] *See id.* at 769; *see also* Aaron Arnold, *Solving the Jurisdictional Conundrum: How US Enforcement Agencies Target Overseas Illicit Procurement Networks Using Civil Courts*, 25 NONPROLIFERATION REV. 285, 290 (2018) ("What happens, then, when these jurisdictional challenges collide with US domestic law? The stark reality is that the prospects of being held accountable are relatively low, as illicit networks operating in foreign jurisdictions are, in many cases, able to evade the reach of US law.").

[70] *See, e.g.*, Arnold, *supra* note 69, at 299 (noting that while rising in prominence, "[c]ivil-asset forfeiture in proliferation-related cases is relatively rare compared with the number of proliferation-related criminal investigations"); U.S. DEP'T OF JUST., *Iranian Nationals Charged with Conspiring to Evade U.S. Sanctions on Iran by Disguising $300 Million in Transactions Over Two Decades* (Mar. 19, 2021), https://www.justice.gov/opa/pr/iranian-nationals-charged-conspiring-evade-us-sanctions-iran-disguising-300-million. While a state's extraterritorial reach depends in part on its geopolitical stature, the protective principle conceptually grounds the extraterritorial application of all states' laws. *See supra* note 56 and accompanying text.

2. The Bilateral Level

Building upon domestic laws that concern and regulate nonproliferation, the second level of nonproliferation law is the bilateral level. In general, bilateral agreements establish legal rights and obligations between two parties and become effective upon the mutual exchange of instruments. Three types of bilateral agreements are common to the nonproliferation regime. The first are arms-control and related risk-reduction treaties. These agreements feature most prominently in the context of the U.S.–Russian nuclear relationship. Since the 1970s, arrangements between the two states have established some degree of stability in the relationship through mutual and verifiable disarmament.[71] Notable treaties include the Strategic Arms Limitation Talks ("SALT") I and II,[72] the Anti-Ballistic Missile ("ABM") Treaty,[73] the Intermediate-Range Nuclear Forces ("INF") Treaty,[74] the Strategic Offensive Reductions Treaty

[71] Note that not all nuclear arms-reduction arrangements are bilateral. *See, e.g.*, *Nuclear Disarmament France*, NUCLEAR THREAT INITIATIVE (Jan. 2, 2019), https://www.nti.org/analysis/articles/france-nuclear-disarmament/.

[72] Interim Agreement Between the United States of America and the Union of Soviet Socialist Republics on Certain Measures with Respect to the Limitation of Strategic Offensive Arms (SALT I), U.S.–U.S.S.R., May 26, 1972; Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Strategic Offensive Arms (SALT II), U.S.–U.S.S.R., June 18, 1979.

[73] Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems, U.S.–U.S.S.R., May 26, 1972.

[74] Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of Their Intermediate-Range and Shorter-Range Missiles, U.S.–U.S.S.R., Dec. 8, 1987.

("SORT"),[75] and several iterations of the Strategic Arms Reduction Treaty ("START") agreements—most recently New START in 2011.[76] These agreements, spanning the past five decades, have sought to "limit and reduce [the] substantial nuclear warhead and strategic missile and bomber arsenals" of both states.[77]

Since the end of the Cold War, however, U.S.–Russian bilateral treaties have faced pronounced challenges. For instance, START III negotiations faltered after the U.S. withdrawal from the ABM Treaty in 2002, and in 2019 the United States withdrew from the INF Treaty after it accused Russia of violating the agreement.[78] In addition, sunset clauses—treaty provisions that provide for the automatic expiration of an agreement at a specified date—impede the

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[75] Treaty Between the United States of America and the Russian Federation on Strategic Offensive Reductions, U.S.–Rus. May 24, 2002.

[76] Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, U.S. – Rus., Aug. 6, 1982, T.I.A.S. 11-205 [hereinafter New START]. For more on the aforementioned agreements, *see* CONG. RES. SERV., *Arms Control and Nonproliferation: A Catalog of Treaties and Agreements*, https://fas.org/sgp/crs/nuke/RL33865.pdf (last updated Mar. 26, 2020); CAMPAIGN FOR NUCLEAR DISARMAMENT, *International Agreements Relating to Nuclear Weapons: A Guide*, https://cnduk.org/wp-content/uploads/2018/09/International-Agreements.pdf [hereinafter International Nuclear Weapons Agreements Guide].

[77] Daryl Kimball & Kingston Reif, *U.S.-Russian Nuclear Arms Control Agreements at a Glance*, ARMS CONTROL ASS'N, https://www.armscontrol.org/factsheets/USRussiaNuclearAgreements (last reviewed Apr. 2020).

[78] *See* International Nuclear Weapons Agreements Guide, *supra* note 76; Shannon Bugos, *U.S. Completes INF Treaty Withdrawal*, ARMS CONTROL ASS'N (Sept. 2019), https://www.armscontrol.org/act/2019-09/news/us-completes-inf-treaty-withdrawal.

longevity of these arms-reduction initiatives.[79] Nonetheless, bilateral agreements remain the focal point of U.S.–Russian efforts to reduce and secure their nuclear arsenals.[80] Additional nuclear arms-reduction treaties include earlier bilateral hotline and accident-measures agreements,[81] as well as post-Cold War initiatives such as the Nunn–Lugar Cooperative Threat Reduction program.[82]

The next type of bilateral agreement consists of civil nuclear deals. In the United States, these agreements are referred to as Section 123 Agreements, after Section 123 of the Atomic Energy Act of 1954, which mandates an agreement for cooperation as a prerequisite to a nuclear deal between the

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[79] *See* Richard Nephew, *False flag: the bogus uproar over Iran's nuclear sunset*, BROOKINGS INSTITUTE (Mar. 8, 2015), https://www.brookings.edu/blog/markaz/2015/03/08/false-flag-the-bogus-uproar-over-irans-nuclear-sunset; *see, e.g.*, New START, *supra* note 76, art. XIV(2) ("This Treaty shall remain in force for 10 years unless it is superseded earlier by a subsequent agreement on the reduction and limitation of strategic offensive arms.").

[80] In addition, the United States and Russia often point to their bilateral agreements in response to complaints by NNWS regarding their disarmament obligations under the NPT. *See* Tom Sauer & Claire Nardon, *NATO Allies on the Treaty on the Prohibition of Nuclear Weapons*, WAR ON THE ROCKS (Dec. 7, 2020), https://warontherocks.com/2020/12/the-softening-rhetoric-by-nuclear-armed-states-and-nato-allies-on-the-treaty-on-the-prohibition-of-nuclear-weapons/.

[81] *See* FED. AM. SCIENTISTS, *Arms Control Agreements*, https://fas.org/nuke/control/index.html (last updated June 24, 2020).

[82] *See The History of Cooperative Threat Reduction (CTR)*, DEF. THREAT REDUCTION AGENCY, https://www.dtra.mil/Portals/61/Documents/History%20of%20CTR.pdf?ver=2019-04-25-140558-733 (last visited Apr. 11, 2022); Justin Bresolin, *Fact Sheet: The Nunn-Lugar Cooperative Threat Reduction Program*, CTR. FOR ARMS CONTROL & NON-PROLIFERATION (June 2014), https://armscontrolcenter.org/fact-sheet-the-nunn-lugar-cooperative-threat-reduction-program/.

United States and any other state.[83] The United States has entered into twenty-three Section 123 agreements, most controversially with India in 2005.[84] In addition, given the centrality of nuclear energy cooperation to the nonproliferation regime,[85] numerous civil nuclear agreements exist between parties other than the United States. One example is the 1991 Argentina–Brazil civil nuclear agreement, noteworthy in light of the "nuclear competition" that previously had characterized the relationship between the two states.[86] According to one

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[83] *See* Atomic Energy Act of 1954, Pub. L. No. 703, 68 Stat. 919 (codified as amended at 42 U.S.C. §§ 2161-2166 (2006)); *see also Nuclear Cooperation Agreements*, NUCLEAR ENERGY INST., https://www.nei.org/advocacy/compete-globally/nuclear-cooperation-agreements (last visited Apr. 11, 2022).

[84] Joint Statement by President George W. Bush and Prime Minister Manmohan Singh of India, GOV'T PUB. OFF. (2005), https://www.govinfo.gov/content/pkg/WCPD-2005-07-25/pdf/WCPD-2005-07-25-Pg1182.pdf [hereinafter U.S.–India Joint Statement]; *see also* Wade Boese, *NSG, Congress Approve Nuclear Trade with India,* ARMS CONTROL ASS'N (2008). Following this deal, India became the only state with nuclear weapons outside of the NPT framework to carry out nuclear commerce with the United States. *See India Energised by Nuclear Pacts*, ASSOCIATED FOR. PRESS (Oct. 1, 2008), https://web.archive.org/web/20110520182512/http://afp.google.com/article/ALeqM5geN2RWjoN4oJhPibc7rhkyxMXfzg.

[85] *See* Miller et al., *supra* note 13.

[86] *See Agreement Between the Republic of Argentina and the Federative Republic of Brazil for the Exclusively Peaceful use of Nuclear Energy*, Nov. 26, 1991 (INFCIRC/395), https://www.iaea.org/sites/default/files/infcirc395.pdf; *ABACC: Treaty Overview*, NUCLEAR THREAT INITIATIVE, https://www.nti.org/education-center/treaties-and-regimes/brazilian-argentine-agency-accounting-and-control-nuclear-materials-abacc/ (last visited Apr. 11, 2022); *Brazil*, NUCLEAR THREAT INITIATIVE, https://www.nti.org/countries/brazil/ (last visited Apr. 11, 2022).

study, states have promulgated 2,269 bilateral civilian nuclear agreements as of 2009.[87]

The third type of bilateral agreement involves the nuclear security assurances that NWS offer NNWS. These assurances, which contribute to the nonproliferation regime by incentivizing junior alliance partners to forsake their own nuclear arsenals, rest on the concept of extended deterrence: the ability of a state to use (or threaten to use) its nuclear weapons to deter attacks on its allies and thereby assure their security.[88] Several prominent examples of security treaties are multilateral in scope, including NATO and the Russian Collective Security Treaty Organization.[89] However, nuclear deterrence agreements are frequently bilateral in scope, as with

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[87] James F. Keeley, *A List of Bilateral Civilian Nuclear Co-operation Agreements: Volume 5*, UNIVERSITY OF CALGARY (2009), https://perma.cc/S949-QB5C.

[88] *See* Richard C. Bush et al., *U.S. Nuclear and Extended Deterrence: Considerations and Challenges*, BROOKINGS INST. 1 (May 2010), https://www.brookings.edu/wp-content/uploads/2016/06/06_nuclear_deterrence.pdf. Debate on the value of security guarantees provided via NWS–NNWS alliance structures has taken on newfound significance since the Russian invasion of Ukraine in February 2022, evidenced by the efforts of Finland and Sweden to join NATO at the time of publication of this Article. *See* Steven Erlanger & Johanna Lemola, *Despite Russian Warnings, Finland and Sweden Draw Closer to NATO*, N.Y. TIMES (Apr. 13, 2022), https://www.nytimes.com/2022/04/13/world/europe/finland-sweden-nato-russia-ukraine.html.

[89] *See id*. at 18; INT'L L. & POL'Y INST., *Nuclear Umbrellas and Umbrella States*, http://nwp.ilpi.org/?p=1221 (last visited Apr. 11, 2022).

U.S. arrangements with the United Kingdom,[90] Australia,[91] Japan,[92] and South Korea.[93]

The foregoing deals often result in geopolitical consequences that affect more than the two states that agree to each arrangement. Still, such arrangements impose legal obligations only upon the respective parties, in contradistinction to the laws that operate at the third and fourth levels of nonproliferation law.

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[90] *See* Agreement Between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the United States of America for Co-operation on the Uses of Atomic Energy for Mutual Defence Purposes art. I, U.S.–U.K., July 3, 1958, T.S. 041-1958 (outlining the terms of the mutual defense and security arrangement between the parties).

[91] *See* Security Treaty Between Australia, New Zealand and the United States of America [ANZUS], Sept. 1, 1951, 3 U.S.T. 3423-3425, T.I.A.S. No. 2493. Although this extended deterrence assurance originated as part of a tripartite treaty, New Zealand's disavowal of nuclear weapons in 1980 converted U.S. guarantees into a bilateral arrangement with Australia; *See also* Amy L. Catalinac, *Why New Zealand Took Itself Out of ANZUS: Observing "Opposition for Autonomy" in Asymmetric Alliances*, 6 FOR. POL'Y ANALYSIS 317, 334 (2010) (explaining "why the New Zealand government let a dispute over nuclear ship visits lead to the withdrawal of the US security guarantee").

[92] *See* Treaty of Mutual Cooperation and Security Between the United States and Japan, U.S.–Japan, Jan. 19, 1960, 11 U.S.T. 1632; T.I.A.S. No. 4509; *see also* Bush et al., *supra* note 88, at 6 ("When the Japanese government in 1967 formally adopted its three non-nuclear principles . . . it was with the understanding that a reliable U.S. nuclear umbrella covered Japan.").

[93] *See* Between the U.S. and the Republic of Korea Regarding the Mutual Defense Treaty, U.S.–S. Kor., Oct. 1, 1953; *see also* Bush et al., *supra* note 88, at 31-33 ("[T]he United States and the ROK 'will maintain a robust defense posture, backed by allied capabilities which support both nations' security interests.'").

3. The Regional Level

The third level of nonproliferation law is the regional level. A firmly regional contribution to the nonproliferation *corpus juris* is the nuclear-weapon-free zone ("NWFZ"). Along with treaties that bar the use and testing of nuclear weapons in space, on the seabed, in Antarctica, and in Mongolia, five regional NWFZs cover 114 states—nearly 40% of the world's population:[94] (1) the Treaty of Semipalatinsk, covering Central Asia;[95] (2) the Treaty of Tlatelolco, covering Latin America and the Caribbean;[96] (3) the Treaty of Rarotonga, covering the South Pacific;[97] (4) the Bangkok Treaty, covering Southeast Asia;[98] and (5) the Treaty of Pelindaba, covering the continent of Africa.[99] The five de jure NWS have largely recognized these regional agreements and have committed not to use or threaten to use nuclear weapons in an attack on any parties to these regional agreements.[100]

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[94] *See* International Nuclear Weapons Agreements Guide, *supra* note 76; *Fourth Conference of Nuclear-Weapon-Free Zones and Mongolia, 2020*, OPANAL, http://www.opanal.org/en/fourth-conference-of-nwfzs-and-mongolia-2020/ (last visited Apr. 11, 2022).

[95] Treaty on a Nuclear-Weapon-Free Zone in Central Asia (with Rules of Procedure), Sept. 8, 2006, 2970 U.N.T.S.

[96] Treaty for the Prohibition of Nuclear Weapons in Latin America, Feb. 14, 1968, 634 U.N.T.S. 281.

[97] South Pacific Nuclear Free Zone Treaty, Aug. 6, 1985, No. 24592.

[98] Treaty on the Southeast Asia Nuclear Weapon-Free Zone, Dec. 15, 1995, 1981 U.N.T.S. 129.

[99] The African Nuclear-Weapon-Free Zone Treaty (Pelindaba Treaty), July 15, 2009, 35 I.L.M. 698.

[100] The NWS, however, have not universally acknowledged NWFZ treaties for various reasons. *See, e.g.*, *Southeast Asian Nuclear-Weapon-Free-Zone (SEANWFZ) Treaty (Bangkok Treaty)*, NUCLEAR THREAT INITIATIVE, https://www.nti.org/learn/treaties-and-regimes/southeast-asian-nuclear-weapon-free-zone-seanwfz-treaty-bangkok-treaty/ (last updated Oct. 30,

Along with regional nuclear initiatives such as Euratom,[101] NWFZs demonstrate the influence of regional law on the nonproliferation regime, particularly in comparison to the narrower focus of bilateral agreements and the consensus challenges that face multilateral treaties.[102] Moving forward, regional agreements such as NWFZs may well take on a more central role within the nonproliferation regime due to the advancement of the "new regionalism" movement—namely, "the increasing presence and role played by regional arrangements across the political, economic, social, and cultural spheres."[103]

2020) ("None of the nuclear weapon states (NWS) has yet signed the protocols, largely due to U.S. and French objections regarding the unequivocal nature of security assurances and over the definitions of territory . . . ."). In addition, while "[t]here have also been initiatives to set up a zone free of weapons of mass destruction, including nuclear weapons, in the Middle East," such initiatives have not resulted in the establishment a Middle East NWFZ. Nuno Luzio, *The IAEA and a nuclear-weapon-free zone in the Middle East*, INT'L ATOMIC ENERGY AGENCY, https://www.iaea.org/bulletin/the-iaea-and-a-nuclear-weapon-free-zone-in-the-middle-east (last visited Apr. 11, 2022).

[101] *See Treaty Establishing the European Atomic Energy Community (Euratom)*, EUR-LEX, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:xy0024&from=EN (last visited Apr. 11, 2022) (describing Euratom's value in ensuring "the security of atomic energy supply within the framework of a centralized monitoring system").

[102] For more on the value of a regional-based approach to nuclear nonproliferation, *see* WILFRED WAN, REGIONAL PATHWAYS TO NUCLEAR NONPROLIFERATION, 28-44 (2018).

[103] *Id*. at 28-29.

4. The Multilateral Level

The final level of the nonproliferation *corpus juris* comprises the laws most often discussed with respect to nuclear nonproliferation—multilateral treaties and conventions that elicit binding commitments from a swathe of the international community. Of course, foundational contributions to the regime, such as the NPT, are multilateral, as are documents such as the Statute of the IAEA,[104] which authorized the IAEA to establish safeguards systems, and the Additional Protocol, which expanded the IAEA's ability to verify compliance with its safeguards.[105]

Along with these agreements, several other treaties bear on the nonproliferation regime. For instance, due to growing concerns regarding the health and environmental consequences of nuclear-weapons testing, the international community enacted the Partial Test Ban Treaty ("PTBT") in 1963, which

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[104] Statute of the IAEA, Oct. 23, 1956, https://www.iaea.org/sites/default/files/statute.pdf; *see also* Laura Rockwood, *Legal Framework for IAEA Safeguards*, INT'L ATOMIC ENERGY AGENCY 2, might be missing specific pages cited (2013), https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1608_web.pdf ("The fundamental objective of the IAEA, as set out in Article II of its Statute, is to 'seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.'").

[105] Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards, INFCIRC/540 (Corrected), Sept. 1, 1997; *see also* Theodore Hirsch, *The IAEA Additional Protocol: What It Is and Why It Matters*, 11 NONPROLIFERATION REV. 140, 143 (2004) ("The protocol . . . has two principal features: It expands the declaration a state must make to the IAEA of activities that might contribute to the development of nuclear weapons, and it broadens the agency's right of access—referred to as 'complementary access'—to verify that declaration.").

prohibits surface-level nuclear detonations.[106] Although several subsequent efforts to limit nuclear-weapons testing, such as the Peaceful Nuclear Explosion Treaty ("PNET")[107] and Threshold Test Ban Treaty ("TTBT"),[108] are bilateral in scope, the multilateral Comprehensive Test Ban Treaty ("CTBT") was signed in 1996 with the objective of prohibiting all civilian and military nuclear tests.[109] However, the CTBT has not yet entered into force due to the decision of eight states to not ratify the agreement.[110]

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[106] Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water (Partial Test Ban Treaty), Aug. 5, 1963, 480 U.N.T.S. 63; *see also* International Nuclear Weapons Agreements Guide, *supra* note 76.

[107] Treaty on Underground Nuclear Explosions for Peaceful Purposes, U.S.–U.S.S.R., May 28, 1976, No. 29638.

[108] Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Underground Nuclear Weapon Tests (and Protocol Thereto), U.S.–U.S.S.R., *entry into force* Dec. 11, 1990, No. 29637.

[109] Comprehensive Nuclear-Test-Ban Treaty, *opened for signature* Sept. 24, 1996, *in* 50/245, G.A. Res. 50/245, U.N. Doc. A/RES/50/245 (Sept. 17, 1996) ("Comprehensive Nuclear-Test-Ban Treaty").

[110] These "Annex 2" states each possessed nuclear reactors during the CTBT's negotiation. They are the United States, China, Israel, Iran, Egypt, Indonesia, India, Pakistan, and North Korea. The latter three have neither signed nor ratified the document. *See Comprehensive Nuclear-Test-Ban Treaty (CTBT)*, NUCLEAR THREAT INITIATIVE, https://www.nti.org/learn/treaties-and-regimes/comprehensive-nuclear-test-ban-treaty-ctbt/ (last updated Apr. 23, 2020). As Robert Floyd, the Executive Secretary of the CTBT Organization, notes, each of the eight states has its own "policy goals, situation, and natural disposition" with respect to the decision not to ratify this treaty. *Confronting the Comprehensive Test Ban Treaty Challenge: An Interview With New CTBTO Executive Secretary Robert Floyd*, ARMS CONTROL ASS'N (Oct. 2021), https://www.armscontrol.org/act/2021-10/features/confronting-comprehensive-test-ban-treaty-challenge-interview-new-ctbto. In addition, a similar multilateral proposal unable to garner sufficient international

Other multilateral treaties that bear on nonproliferation include the Convention on the Physical Protection of Nuclear Material,[111] the Convention on Early Notification of a Nuclear Accident,[112] the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency,[113] and the Nuclear Terrorism Convention.[114]

Furthermore, UN General Assembly and Security Council resolutions serve as robust sources of rules on nuclear nonproliferation.[115] Noteworthy Security Council resolutions

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support is the Fissile Material Cut-Off Treaty ("FMCT"); *see Proposed Fissile Material (Cut-Off) Treaty (FMCT)*, NUCLEAR THREAT INITIATIVE, https://www.nti.org/learn/treaties-and-regimes/proposed-fissile-material-cut-off-treaty/ (last updated May 14, 2020) (explaining why the UN Conference on Disarmament has not "yet formally launched negotiations on such a treaty").

[111] Convention on the Physical Protection of Nuclear Material, Mar. 3, 1980, 1456 U.N.T.S. 101.

[112] Convention on Early Notification of a Nuclear Accident, Sept. 26, 1986, 1439 U.N.T.S. 275.

[113] Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, Sept. 26, 1986, 1457 U.N.T.S. 133.

[114] Nuclear Terrorism Convention, *supra* note 64. Several other conventions, including the Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation, bear indirectly on the regime. *See* INT'L ATOMIC ENERGY AGENCY, *The International Legal Framework for Nuclear Security* 5-6 (IAEA Int'l Law Series No. 4).

[115] *Resolutions*, UNITED NATIONS SECURITY COUNCIL, https://www.un.org/securitycouncil/content/resolutions-0 (last visited Apr. 11, 2022). Since 1948, 16% of UN Security Council resolutions have concerned nonproliferation-related issues. See Appendix A for a list of these resolutions. General Assembly resolutions are not legally binding; however, they are important "due to their political influence rather than to the legal obligations that they carry." Celine Van den Rul, *Why Have Resolutions of the UN General Assembly If They Are Not Legally Binding?* (June 16, 2016), https://www.e-ir.info/pdf/64272. Prominent General Assembly resolutions relevant to nonproliferation include Resolutions 1653, G.A. Res. 1651, U.N. GAOR, 16th Sess., Supp. No.17, U.N. Doc. A/5100, at 4 ("Declaration on the prohibition of the use of nuclear and

include: (1) Resolution 984, which provided further assurances to NNWS with respect to the legal obligations set forth in the NPT;[116] (2) Resolution 1887, which articulated as a principal objective the disarmament of existing nuclear arsenals;[117] and (3) Resolution 1540, which established the 1540 Committee to monitor state compliance with legal obligations to prevent the proliferation of weapons of mass destruction to nonstate actors.[118] In addition, the General Assembly passed Resolution 71/258 in 2016 to convene a conference to negotiate a legally

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thermonuclear weapons."), and 70/33, G.A. Res. 70/33, U.N. Doc. A/RES/70/33 (Dec. 11, 2015) ("Taking forward multilateral nuclear disarmament negotiations . . . .").

[116] S.C. Res. 984, U.N.Doc.S/RES/984 (Apr. 11, 1995) ("Security assurances against the use of nuclear weapons to non-nuclear-weapon States that are Parties to the Treaty on the Non-Proliferation of Nuclear Weapons . . . .").

[117] S.C. Res. 1887, U.N.Doc.S/RES/1887 (Sept. 24, 2009) ("Resolving to seek a safer world for all and to create the conditions for a world without nuclear weapons, in accordance with the goals of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) . . . .").

[118] S.C. Res. 1540, ¶ 1, U.N.Doc.S/RES/1540 (Apr. 28, 2004) ("[A]ll States shall refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery . . . ."); *see also UN Security Council Resolution 1540 at a Glance*, ARMS CONTROL ASS'N (last reviewed Aug. 2017), https://www.armscontrol.org/factsheets/1540 ("The council established a committee to oversee the implementation of the resolution . . . . [T]he 1540 Committee is tasked with providing awareness of the resolution and its requirements, matching assistance requests with offers, and assessing the status of implementation."). Also note the Security Council resolutions that operate in tandem with Resolution 1540 and the 1540 Committee with respect to counterterrorism. *See, e.g.*, S.C. Res. 1373, U.N.Doc.S/RES/1373 (Sept. 28, 2001).

binding instrument to prohibit nuclear weapons.[119] The conference produced the Treaty on the Prohibition of Nuclear Weapons ("TPNW"), which entered into force in January 2021.[120] The TPNW, which is stricter on disarmament obligations than the NPT, has attracted the support of neither the NWS nor several notable NNWS, but is a strong step taken by states dissatisfied with the progress of the nonproliferation regime.[121]

II. PARSING INEFFICIENCY

Nonproliferation scholars should consider the systemic inefficiencies that characterize and impede the nonproliferation *corpus juris*. Identifying these inefficiencies,

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[119] G.A. Res. 71/258, U.N. Doc. A/RES/71/258 (Dec. 23, 2016); *see also UN General Assembly approve historic resolution*, INT'L CAMPAIGN TO ABOLISH NUCLEAR WEAPONS (Dec. 23, 2016), https://www.icanw.org/campaign-news/un-general-assembly-approves-historic-resolution.

[120] Treaty on the Prohibition of Nuclear Weapons art. 15(1), *entry into force* Jan. 22, 2021, U.N. Doc. A/CONF.229/2017/L.3/Rev.1 ("This Treaty shall enter into force 90 days after the fiftieth instrument of ratification, acceptance, approval or accession has been deposited.").

[121] A number of prominent NNWS decided not to participate in negotiations on the TPNW. *See* Treasa Dunworth, *The Treaty on the Prohibition of Nuclear Weapons*, AM. SOC. INT'L L. (Oct. 13, 2017), https://www.asil.org/insights/volume/21/issue/12/treaty-prohibition-nuclear-weapons#_ednref10 ("[The nuclear-armed states that did not sign onto the TPNW] are joined by all the NATO allies as well as Australia, South Korea, and Japan, which are also in security relationships with the United States."); Ramesh Thakur, *Japan and the Nuclear Weapons Prohibition Treaty: The Wrong Side of History, Geography, Legality, Morality, and Humanity*, 1 J. PEACE & NUCLEAR DISARMAMENT 11, 11 (2018) (criticizing Japan's decision not to accede to the TPNW). For more on the TPNW as a "splintered disruptor" agreement, *see infra* section III.C.

however, requires establishing a conceptual foundation for understanding inefficiency itself. Section A of this Part examines the difference between legal effectiveness and efficiency, a distinction that sheds light on this Article's discussion of the nonproliferation regime's coordination inefficiencies. Sections B and C then turn to the international human rights and global trade regimes—two case studies that demonstrate how inefficiencies arise within complex, multitiered legal frameworks.

A. Effectiveness and Efficiency in the Law

The analogy between diseconomies of scale and the inefficiencies of the nonproliferation regime is not a perfect fit. Their respective inputs are not the same, and the regime produces "output" only insofar as it advances the spread and normalization of its objectives. Nonetheless, just as the excessive growth a firm may result in diseconomies, the expansion of an enterprise such as the nonproliferation regime—and its legal framework—may lead to inefficiency. Therefore, to understand how the growth of the nonproliferation *corpus juris* impairs the regime, it is important to define "inefficiency."

Legal inefficiency can be understood by comparing the related concepts of effectiveness and efficiency. On the one hand, effectiveness addresses *whether* a legal system can reach its intended outcomes.[122] The attributes of effective laws

[122] *See* Harrell R. Rodgers, Jr., *Law as an Instrument of Public Policy*, Review, 7 AM. J. POL. SCI. 638, 639 (1973).

consist of "the characteristics that a law must have and the conditions that must be present if a law is to accomplish its stated goals."[123] An effective legal system accomplishes goals on at least two levels.[124] First, on an enforcement level, a legal system is effective if it encourages or discourages the particular activities that it regulates. Second, the policy level evaluates whether the system promotes the values underlying the laws that comprise the system. Consider, for instance, the legal framework regulating the disposal of nuclear waste: while its enforcement goals involve whether applicable safeguards or storage protocols are properly implemented, its policy goals involve whether the measures contribute to enhanced public health and environmental outcomes.[125]

Building upon the goals of an effective legal system, Alan Macfarlane, a legal historian and comparative anthropologist, identifies four indices of legal effectiveness.[126] Underlying each index is a first principle of fairness: for a legal system to be effective, it must be perceived as treating its subjects equitably.[127]

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[123] *Id*.

[124] *See* ALBERT BRENTON, THE ECONOMIC THEORY OF REPRESENTATIVE GOVERNMENT 20-26 (1974) (distinguishing between "objectives and instruments" in the context of police protection).

[125] *Compare* Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, § 131 *et. seq.*, 96 Stat. 2201, 2229-41 (1983) (regulating the interim storage and management of spent nuclear fuel), *with id*. § 111(a)(1), 96 Stat. 2207 ("The Congress finds that . . . radioactive waste creates potential risks and requires safe and environmentally acceptable methods of disposal.").

[126] Alan Macfarlane, *What Makes Law Effective?*, TIMES HIGHER ED. SUPP. (Apr. 2005), http://www.alanmacfarlane.com/TEXTS/law_effective.pdf.

[127] This notion evokes the two principles that Rawls identifies as the foundation of justice. *See* John Rawls, *Justice as Fairness*, 67 PHIL. REV. 164, 165 (1958) ("[F]irst, each person participating in a practice, or affected by it, has an equal right to the most extensive liberty compatible with a like

The first index is whether the system promotes the rule of law.[128] At the heart of the rule of law is the willingness of the public to resolve disputes through legal process rather than violence. The rule of law is effective when "all actions and all power are ultimately under the law[,]" meaning that the legal process applies uniformly in form and substance.[129]

The second index "concerns the degree to which people abide by legal decisions."[130] Noting its similarities to ritual, Macfarlane characterizes the law as "heavily formalized and standardized with a compulsive pressure."[131] According to this index, the effectiveness of a legal system derives from the respect of the people—particularly the public's acceptance of the authority of the system to resolve disputes and to structure society.

Macfarlane's third index involves whether people feel protected by the law.[132] Similar to the second index, this measure derives from the respect and acceptance of the public. If members of society believe that they have proper recourse through the law to defend their interests, they will likely place greater faith in the functioning of the legal system as a whole.[133]

The fourth index considers the degree of compatibility between the objectives of the legal system and the fundamental

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liberty for all; and second, inequalities are arbitrary unless it is reasonable to expect that they will work out for everyone's advantage . . . .").

[128] Macfarlane, *supra* note 126, at 1.

[129] *Id*.

[130] *Id*.

[131] *Id*. at 2.

[132] *Id*.

[133] *See id*. at 2-4.

values of society.[134] People tend to believe that the law "runs with their interests and not against them" when it reflects deeply engrained mores and sensibilities.[135]

Macfarlane's heuristic on legal effectiveness offers valuable insights on the nonproliferation *corpus juris*. According to the first index, effectiveness depends on the ability of the nonproliferation *corpus juris* to encompass all nonproliferation-related activities and to promulgate a system in which members of the international community are held to equivalent standards and expectations.[136] Meanwhile, the second and third indices concern the faith that states have in the laws that comprise the nonproliferation regime: Are states prepared to abide by the laws in place?[137] Relatedly, do states believe that the nonproliferation *corpus juris* protects their interests and provides proper recourse should disputes arise? Last, according to the fourth index, the nonproliferation *corpus juris* is effective insofar as it remains compatible with the international community's views of the worthiness of curbing proliferation, encouraging disarmament, and promoting peaceful nuclear energy uses.[138]

It is worth noting that Macfarlane's indices are easier to measure in the domestic context than in the international context, as the parties that comprise the latter wield uneven

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[134] *Id*. at 4.

[135] *Id*.; *see also* Yehezkel Dror, *Values and the Law*, 17 ANTIOCH REV. 440, 440 (1957) ("[L]aw consists of a number of norms which constitute obligatory rules of behavior for the members of the society. These legal norms are closely related to various social values . . . .").

[136] *See* Macfarlane, *supra* note 126, at 1.

[137] *See id*. at 1-4.

[138] *See id*. at 4-5. These goals reflect the values that underpin the normative framework of the nonproliferation regime. *See supra* notes 42-49.

power and are their own sovereigns.[139] As Louis Henkin, the international law scholar widely credited with founding the field of human rights law, famously remarked, "[a]lmost all nations observe almost all principles of international law and almost all of their obligations almost all of the time."[140] Still, these indices remain useful benchmarks to measure the broader effectiveness of the nonproliferation *corpus juris*.

If effectiveness concerns *whether* a legal system accomplishes its goals, efficiency, on the other hand, concerns *how* the system meets those ends.[141] In other words, an efficient legal system is one whose characteristics and conditions are well suited to enabling the system to achieve its objectives.[142] Efficiency derives from the functioning of individual components (i.e., individual laws) of a legal system and the environment that shapes the system as a whole. Inefficiency, therefore, arises in two situations: (1) when individual components of a legal system are not tailored properly to their environment, or (2) when these components conflict with one another. Inefficiencies do not lead necessarily

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[139] This challenge in the international context evokes the notion of power politics in international relations. *See* Rüdiger Wolfrum, *International Law*, MAX PLANCK ENCYC. OF PUB. INT'L L. (2006) ("Sources of [international] law are therefore neither identifiable nor authoritative. . . . Due to the lack of coercive authority, compliance with international law completely depends, so it is argued, on the political will of the State concerned.").

[140] LOUIS HENKIN, HOW NATIONS BEHAVE 47 (2d ed. 1979); *Louis Henkin*, COLUMBIA L. SCH., https://www.law.columbia.edu/faculty/louis-henkin (last visited Apr. 11, 2022).

[141] Gordon Tullock, *Two Kinds of Legal Efficiency*, 8 HOFSTRA L. REV. 659, 662 (1980) ("Basically, an efficient legal institution would be one that cannot be changed without making us worse off. This, of course, limits analysis to the present state of knowledge.").

[142] *See* Rodgers, Jr., *supra* note 122, at 639.

to ineffectiveness or system failure outright.[143] Rather, inefficiencies pose obstacles to success. Just as a firm beyond its optimal size faces the prospect of eventual failure, so too does a legal system that is inundated with inefficiencies.

This article articulates three coordination inefficiencies, discussed in Part III, that impede the advancement of the nonproliferation regime. In light of mounting concerns about the regime's long-term viability, it is critical to understand how inefficiencies occur and develop within a legal system. In this regard, two useful starting points are the international human rights and global trade regimes, enterprises that likewise have been stymied by less-than-efficient legal frameworks.

B. The International Human Rights Regime

Perhaps the greatest achievement in modern international law is the internationalization of human rights over the course of the twentieth century. Prior to the end of the Second World War, "[t]here were relatively few rules of international law—and certainly no rules protecting fundamental rights . . . which could be invoked to override immunity or to claim an interest in activities beyond a state's territory."[144] However, changed postwar attitudes led to the establishment of the United Nations

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[143] In certain contexts, designed inefficiency may in fact be desirable. *See, e.g.*, Tullock, *supra* note 141, at 659-60 ("[O]ne custom that is widely approved and that perhaps should be called an 'inefficiency' is the deliberate biasing of process towards one side. . . . There are other areas where people sometimes argue for bias.").

[144] Sands, *supra* note 17, at 529.

as a "bulwark against war and for the preservation of peace."[145] In the seventy-five years since its establishment, the UN has been the centerpiece of the institutional, normative, and legal frameworks that comprise the international human rights regime.[146]

The human rights legal framework that exists under the auspices of the UN operates along two tracks: the Charter-based system and the treaty-based system.[147] The Charter-based human rights system, which binds all 193 UN member states, is predicated on the Universal Declaration of Human Rights ("UDHR").[148] Although drafted as a nonbinding

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[145] Frans Viljoen, *International Human Rights Law: A Short History*, UNITED NATIONS, https://www.un.org/en/chronicle/article/international-human-rights-law-short-history (last visited Apr. 11, 2022).

[146] *See* Slava Balan, *The United Nations at 75: Has It Delivered the Promise of Human Rights?*, MCGILL (Dec. 7, 2020), https://www.mcgill.ca/humanrights/article/inclusive-citizenship-and-deliberative-democracy/united-nations-75-has-it-delivered-promise-human-rights ("Despite the lack of supra-national control and accountability mechanisms under the UN human rights system, this institutional framework has played a significant role in establishing and promoting progressive human rights regimes across the world.").

[147] Viljoen, *supra* note 145 ("The core system of human rights promotion and protection under the United Nations has a dual basis: the UN Charter, adopted in 1945, and a network of treaties subsequently adopted by UN members."). The UN's human rights legal framework is housed under the auspices of the UN Human Rights Council and the various human rights treaty bodies, though these bodies have faced criticism due to the enforcement challenges that they face. *See generally* Philip Alston, *Reconceiving the UN Human Rights Regime: Challenges Confronting the New UN Human Rights Council*, 7 MELB. J. INT'L L. 186 (2006); Valentina Carraro, *Promoting Compliance with Human Rights: The Performance of the United Nations' Universal Periodic Review and Treaty Bodies*, 63 INT'L STUD. Q. 1079 (2019).

[148] Universal Declaration of Human Rights, U.N. GAOR, 2d Special Sess., Supp. No. 2, U.N. Doc. A/810 (1948).

declaration, the UDHR is recognized today as the definitive statement of the rights and freedoms of all human beings.[149]

In a postwar international social environment opening to nonstate actors such as individuals and civil society, the UDHR was transformative due to its centering of human rights discourse on the individual level.[150] The notion that human rights are "inalienable, universal, interdependent and universal in nature" continues to set the international human rights regime apart from regimes that conceptualize their core objectives at the state level.[151]

Unlike the Charter-based system, the treaty-based system applies to states only to the extent that they have ratified specific accords.[152] Nonetheless, the prolific expansion of

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[149] Viljoen, *supra* note 145 ("Although it was adopted as a mere declaration, without a binding force, it has subsequently come to be recognized as a universal yardstick of State conduct."); *see also* Elsa Stamatopoulou, *The Importance of the Universal Declaration of Human Rights in the Past and Future of the United Nation's Human Rights Efforts*, 5 ILSA J. INT'L & COMP. L. 281, 281 (1999) ("[T]he UDHR was a breakthrough and a revolution in international relations and has remained a continuing source of inspiration since 1948.").

[150] The Charter's individual-level focus has not been uncontested. *See, e.g.*, Bangkok NGO Declaration on Human Rights, Apr. 19, 1993, A/CONF.157/PC/83; *see also* Joanne Bauer, *The Bangkok Declaration Three Years After: Reflections on the State of the Asia-West Dialogue on Human Rights*, CARNEGIE COUNCIL FOR ETHICS IN INT'L AFF. (Mar. 4, 1996), https://www.carnegiecouncil.org/publications/archive/dialogue/1_04/articles/518 ("[The Bangkok Declaration] marked the first of many messages Asian state representatives would send to the West saying that Asia intends to set its own standards for human rights.").

[151] Alejandro Anaya Muñoz, *International Human Rights Regimes*, 25 SUR 171, 173 (2017).

[152] Viljoen, *supra* note 145 ("[O]nly those States that have ratified or acceded to particular treaties are bound to observe that part of the treaty-based (or conventional) system to which they have explicitly agreed.").

multilateral instruments that address human rights issues has enabled this system to contribute significantly to the body of human rights law. Along with the UDHR, the International Covenant on Civil and Political Rights ("ICCPR")[153] and the International Covenant on Economic, Social and Cultural Rights ("ICESCR")[154] comprise the international bill of human rights.[155] These documents are widely lauded due in part to the fact that each is "underpinned by reference to human dignity."[156] Division between ICCPR and ICESCR signatories over the justiciability of social and economic rights, however, has since led the regime to "move away from a generic focus, shifting its attention instead to particularly marginalized and oppressed groups or themes."[157]

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[153] International Covenant on Civil and Political Rights, *adopted* Dec. 19, 1966, 999 U.N.T.S. 171, 6 I.L.M. 360 (1967).

[154] International Covenant on Economic, Social and Cultural Rights, *adopted* Dec. 16, 1966, 993 U.N.T.S. 3.

[155] See, e.g., Jane Kotzmann & Cassandra Seery, *Dignity in International Human Rights Law: Potential Applicability in Relation to International Recognition of Animal Rights*, 26 MICH. ST. INT'L L. REV. 1, 3 (2017) ("Following the creation of the International Bill of Human Rights, a multitude of more specific international treaties have entered into force and numerous states have passed domestic legislation implementing these norms.").

[156] *Id*. at 9.

[157] Viljoen, *supra* note 145. Several major treaties address particular groups or human rights issues. *See, e.g.*, International Convention on the Elimination of All Forms of Racial Discrimination, *opened for signature* Dec. 21, 1965, S. Exec. Doc. C, 95-2 (1978), 660 U.N.T.S. 195; Convention on the Elimination of All Forms of Discrimination Against Women, adopted Dec. 18, 1979, 1249 U.N.T.S 1; Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, *adopted* Dec. 10, 1984, S. Treaty Doc. No. 100-20 (1988), 1465 U.N.T.S. 85 [hereinafter Convention Against Torture]; Convention on the Rights of the Child, *adopted* Nov. 20, 1989, 1577 U.N.T.S 3; International Convention

In addition, the international human rights regime extends beyond the UN's Charter-based and treaty-based systems. Regional efforts, for instance, have led some scholars to characterize the enterprise as a set of human rights "regimes."[158] Three noteworthy regional systems are the Council of Europe, the Organization of American States, and the African Union.[159] Despite differences between the regional systems—for instance, the extent to which each system considers socioeconomic rights justiciable, as well as how each system implements human rights protections—they acknowledge collectively a minimum floor for human rights.[160] More broadly, these systems each represent an effort

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on the Protection of the Rights of All Migrant Workers and Members of Their Families, *opened for signature* May 2, 1991, 30 I.L.M. 1517; Convention on the Rights of Persons with Disabilities, Dec. 13, 2006, 2515 U.N.T.S. 3; Convention for the Protection of All Persons from Enforced Disappearance art. 1.1, *adopted* Dec. 20, 2006, 61 U.N.T.S. 488.

[158] See, e.g., Muñoz, *supra* note 151, at 174 ("Until now, we have referred to the 'international human rights regime' in the singular. However . . . there is a much broader and more diverse reality. . . . [T]he most common way of disaggregating the complex international human rights regime . . . is according to the international (or intergovernmental) organisations from which they have originated . . . .").

[159] Viljoen, *supra* note 145. Each system has one constitutive treaty. *See* Statute of the Council of Europe, May 5, 1949, European Treaty Series; Charter of the Organization of the American States, April 30, 1948, 2 U.S.T. 2394, 119 U.N.T.S. 3; Organization of African Unity (OAU) Assembly of the Heads of State and Government, African Charter of Human and People's Rights, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982).

[160] Viljoen, *supra* note 145 ("The American Convention contains rights similar to those in the European Convention but goes further by providing for a minimum of 'socio-economic' rights. In contrast . . . , the African Charter, adopted by OAU in 1981, contains justiciable 'socio-economic' rights and elaborates on the duties of individuals and the rights of peoples."). For more on the justiciability of socioeconomic rights, *see*

by blocs of states to incorporate their human rights imperatives into the mosaic of laws and norms that comprise the regime.[161]

Beyond regional and multilateral treaties, additional levels of law contribute to the international human rights regime, including subregional agreements and domestic laws.[162] Furthermore, and in contrast to the nonproliferation regime, other sources of international law such as customary international law, *jus cogens*, and judicial decisions also bear on the international human rights regime.[163]

Despite the expanse of laws that comprises the international human rights regime's legal framework, the UN and the major human rights conventions remain at the heart of the regime. Consequently, considerable human rights scholarship is devoted to the impact of multilateral treaties on

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Salma Yusu, *The Rise of Judicially Enforced Economic, Social & Cultural Rights—Refocusing Perspectives*, 10 SEATTLE J. SOC. JUST. 753, 754 (2010) ("Prior to the 1990s, the debate on the justiciability of ESCRs was primarily a theoretical one, based for the most part on mere speculation and pure conjecture. Today, however, it has become apparent that the era of justiciability of ESCRs has taken on real practical meaning . . . .").

[161] *Cf.* Zachary Elkins, Tom Ginsburg & Beth Simmon, *Getting to Rights: Treaty Ratification, Constitutional Convergence, and Human Rights Practice*, 54 HARV. INT'L L.J. 61, 62-63 (2013) (articulating a qualified convergence in the qualitative content of human rights since the end of the Second World War), *with* Başak Çalı, Mikael Rask Madsen & Frans Viljoen, *Comparative Regional Human Rights Regimes: Defining a Research Agenda*, 16 ICON 128, 134-35 (2018) (highlighting several differences between the regional systems, including "to what extent deference should be given to national authorities in the interpretation of qualified rights").

[162] Viljoen, *supra* note 145.

[163] See Jean d'Aspremont, *Expansionism and the Sources of International Human Rights Law*, *in* ISRAEL YEARBOOK ON HUMAN RIGHTS 223 (2016) (discussing "the abundant scholarship and practice on the sources of IHRL").

the achievement of human rights objectives. Moreover, a "cottage industry" in the literature asks whether these treaties might actually harm human rights outcomes.[164] Spearheaded by international law professor Oona Hathaway's seminal article, "Do Human Rights Treaties Make a Difference?" this scholarship identifies a key inefficiency facing the international human rights regime: state subversion of treaty obligations due to weak enforcement.[165]

Hathaway's empirical analysis offers a useful framework to understand how and why this inefficiency affects the international human rights regime. Acknowledging that "[t]he forces that induce compliance with other law . . . do not pertain equally to the law of human rights[,]" Hathaway argues that the individualistic nature of human rights often leaves the international community with "little incentive to police

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[164] *See, e.g.*, Hathaway, *supra* note 42; Linda Camp Keith, *The United Nations International Covenant on Civil and Political Rights: Does it Make a Difference in Human Rights Behavior?*, 36 J. PEACE RES. 95 (1999); Eric Neumayer, *Do International Human Rights Treaties Improve Respect for Human Rights?*, 49 J. CONFLICT RES. 925 (2005); Adam S. Chilton, *Experimentally Testing the Effectiveness of Human Rights Treaties*, 18 CHI. J. INT'L L. 164 (2017); Adam S. Chilton & Eric A. Posner, *Treaties and Human Rights: The Role of Long-Term Trends*, 81 L. & CONTEMP. PROBS. 1 (2018). Compare these articles to studies providing empirical evidence that treaty ratification may be associated with improved human rights outcomes. *See, e.g.*, Courtenay R. Conrad & Emily Hencken Ritter, *Treaties, Tenure and Torture: The Conflicting Domestic Effects of International Law*, 75 J. POL. 397 (2013); Daniel W. Hill, Jr., *Estimating the Effects of Human Rights Treaties on State Behavior*, 72 J. POL. 1161 (2010); Yonatan Lupu, *Legislative Veto Players and the Effects of International Human Rights Agreements*, 59 AM. J. POL. SCI. 578 (2015).

[165] *See* Hathaway, *supra* note 42, at 1941 ("Because monitoring and enforcement are usually minimal, the expression by a country of commitment to the treaty's goals need not be consistent with the country's actual course of action.").

noncompliance with treaties" or human rights violations by states against their own citizens.[166] In contrast to an enterprise such as the global trade regime, in which a state's failure to abide by legal obligations would "likely be detected and lead to retaliatory action[,]" human rights violations tend not to impose a direct cost on other states.[167]

After introducing this compliance challenge, Hathaway frames the design of her empirical analysis, which measures human rights in reference to twelve multilateral or regional treaties.[168] She finds that although treaty ratification by democratic states is associated with better human rights practices, in general, "[c]ountries that ratify human rights treaties often appear less likely, rather than more likely, to conform to the requirements of the treaties than countries that do not ratify these treaties."[169] This counterintuitive dynamic may be stronger in regional human rights systems in light of greater external pressures on states to exhibit outwardly a commitment to human rights.[170] Explaining this paradoxical result, Hathaway argues that "treaties operate on more than one

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[166] *Id*. at 1938. As Andrew Moravcsik similarly notes, "Formal international human rights regimes differ from most other forms of international cooperation in that their primary purpose is to hold governments accountable to their own citizens for purely domestic activities." Andrew Moravcsik, *Explaining the Emergence of Human Rights Regimes: Liberal Democracy and Political Uncertainty in Postwar Europe*, WEATHERHEAD CTR. FOR INT'L AFF. (Working Paper Series 98-17) (1998), https://www.princeton.edu/~amoravcs/library/emergence.pdf.
[167] Hathaway, *supra* note 42, at 2006. For more on the global trade regime, *see infra* section II.C.
[168] Hathaway, *supra* note 42, at 1965, 2026.
[169] *Id*. at 1989.
[170] *Id*. at 2020.

level simultaneously."[171] On an instrumental level, treaties constitute binding law intended to effectuate particular outcomes.[172] Meanwhile, on an expressive level, treaties represent the views of their signatories.[173] The expressive value of treaties arises from their dual legal and political nature: treaties express the objectives that a state deems acceptable as well as the internal qualities that the state wishes to showcase.[174]

Appreciating the expressive role of treaties is critical to understanding the consequences of a disjuncture between an agreement's instrumental goals and expressive benefits. According to Hathaway, an instrumental–expressive disjuncture risks permitting the process of treaty ratification "to relieve pressure for real change in performance in countries that ratify the treaty."[175] In the international human rights regime, this disjuncture is prominent because the strongest tools of treaty enforcement—military intervention and economic sanctions—are rarely relied upon.[176] Monitoring bodies associated with human rights treaties frequently are not empowered to induce compliance, which causes the ratification of these treaties to "serve to offset, rather than enhance, pressure for real change in practices."[177] Hathaway

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[171] *Id*. at 2002.
[172] *Id*.
[173] *Id*.
[174] *Id*. at 2005.
[175] *Id*. at 2007.
[176] *Id*. at 2007; *see also* GARY CLYDE HUFBAUER ET AL., ECONOMIC SANCTIONS RECONSIDERED 16-32 (2d ed. 1990) (finding that under 21% of economic sanctions used for foreign policy purposes from 1914–1990 were motivated by human rights rationales).
[177] Hathaway, *supra* note 42, at 2020. An arguable exception is the Convention Against Torture, *see supra* note 157, which, beyond mere

argues that to mitigate these shortcomings, the international community should consider measures that empower treaty bodies with more robust enforcement authority or, alternatively, shift the regime's focus away from universal agreements due to the harmful signals sent when parties renege on their commitments.[178]

Hathaway's analysis is valuable in qualitatively presenting the costs of a weak enforcement environment. Framed as an inefficiency, this feature of the international human rights regime serves as a case study on how legal instruments that operate along a single level of law—here, the multilateral level—may be impaired if the instruments are not in sync with their environment. A scenario in which a treaty is ratified for its expressive value, rather than for its instrumental value, undermines not only the treaty's effectiveness, but also the effectiveness of the legal system as a whole.[179]

Beyond the human rights context, inefficiency associated with the instrumental–expressive disjuncture may arise for

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"name and shame" power, has "introduced a particular model of preventive monitoring through unannounced visits to places where individuals are deprived of liberty." OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS, *Preventing Torture: The Role of National Preventive Mechanisms* (2018), https://www.ohchr.org/sites/default/files/Documents/HRBodies/OPCAT/NPM/NPM_Guide.pdf; *see generally* Emilie M. Hafner-Burton, *Sticks and Stones: Naming and Shaming the Human Rights Enforcement Problem*, 62 INT'L ORG. 689 (2008).

[178] *Id*. at 2022-25.

[179] See, e.g., Marco Battaglini & Bård Harstad, *The Political Economy of Weak Treaties*, 128 J. POL. ECON. 544, 546 (2020) (articulating a model of weak treaties—treaties designed to be noncommittal and otherwise inefficient—that "shed[s] light on why treaties are not effectively addressing the world's most challenging problems").

several reasons. First, inefficiency may stem from weak enforcement. This problem may arise in the absence of strong incentives to police non-compliance with treaty obligations, as in the case of the international human rights regime.[180] Alternatively, the problem may arise due to suboptimal enforcement mechanisms written into the laws themselves.[181]

Second, an expansive legal regime may provide "cover" to states that seek to shirk their legal obligations.[182] Under this rationale, a state's ratification of numerous treaties may minimize the repercussions of violating one of those laws because the state already has presented itself as a member of the global consensus. This rationale evokes the concept of social influence in social psychology.[183] As this concept

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[180] *See* Hathaway, *supra* note 42, at 1938.

[181] *See* Battaglini & Harstad, *supra* note 179, at 581 ("International treaties influence, and perhaps even limit, what domestic policy makers can do. . . . Anticipating this, political incumbents may seek to negotiate and sign treaties strategically and in a way that both ties the hands of the next policy maker and improves the odds of staying in office."). *But see* Emily O'Brien & Richard Gowan, *What Makes International Agreements Work: Defining Factors for Success*, CTR. INT'L COOP. 5 (Sept. 2012), https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7839.pdf ("Strengthening enforcement mechanisms is often perceived to be a solution to parties' compliance shortcomings. But strong enforcement mechanisms can have the result of driving parties to conclude a shallow agreement . . . . Sometimes the best option for states may be to choose a relatively deep agreement with weak enforcement mechanisms to create consensus.").

[182] *See* Ryan Goodman & Derek Jinks, *How to Influence States: Socialization and International Human Rights Law*, 54 *Duke L.J.* 621, 642 (2004) ("Importantly, actors obviously do not always bow to social pressure. . . . Social impact theory suggests that the likelihood of conformity turns on the strength, immediacy, and size of the group.").

[183] See ELLIOT ARONSON ET AL., SOCIAL PSYCHOLOGY 250-97 (4th ed. 2002) (discussing conformity and social pressure). Numerous international relations scholars have applied these social psychology concepts to describe

applies to state behavior, "multilateral institutions can also exert, or provide a forum through which members exert, *social influence*—essentially, a social version of material carrot–stick factors that states include in cost–benefit calculations."[184] Although multilateral pressure may lead dissatisfied states to accept outwardly international obligations, they continue to harbor private reservations and will "do only what is required . . . , and, where feasible, exploit loopholes" in the legal system, including even eschewing their legal obligations.[185]

Third, inefficiency related to the instrumental–expressive disjuncture may be a product of misplaced emphasis on the multilateral level of law. As Hathaway notes in the human rights context, the international community should reconsider its focus on the universal ratification of sweeping conventions due to the normative damage that occurs when a member state reneges on its treaty commitments.[186] Whatever the reason for this inefficiency, the conclusion is the same: poorly enforced treaties present obstacles to achieving broader regime objectives.

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how states respond to varying international norms and activities. *See, e.g.*, Goodman & Jinks, *supra* note 182 (doing so in the human rights context); RUBLEE, *supra* note 5 (doing so in the nonproliferation context).

[184] RUBLEE, *supra* note 5, at 17.

[185] *Id*. at 18, 28.

[186] *See* Hathaway, *supra* note 42, at 2024 ("Although universal ratification of a treaty can make a strong statement to the international community that the activity covered by the treaty is unacceptable, pressure to ratify, if not followed by strong enforcement and monitoring of treaty commitments, may be counterproductive.").

C. The Global Trade Regime

As with the international human rights regime, the modern global trade regime originated in the aftermath of the Second World War.[187] Beyond their respective origins, however, there are several noteworthy differences between the regimes. For instance, while it is difficult to police non-compliance with human rights obligations due to the absence of "competitive market forces," states are acutely aware of and prepared to retaliate against others that abnegate their trade obligations.[188]

The international social environments in which the regimes operate also differ in noteworthy ways. Despite parochial disagreements regarding the scope and justiciability of certain human rights, there is consensus that the broad objectives of the human rights regime are meritorious.[189] Meanwhile, global consensus on the merits of free trade—and even on what "free trade" means—is far less settled. The highly-publicized failure of the 1999 World Trade Organization ("WTO") Ministerial Conference, as well as the failure of the Doha Round, attest to

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[187] Simon Lester, *The Role of the International Trade Regime in Global Governance*, 16 UCLA J. INT'L L. & FOR. AFF. 209, 220 (2011) ("After World War II, the focus shifted from bilateral agreements to a multilateral approach.").

[188] Hathaway, *supra* note 42, at 1938.

[189] *See* LOUIS HENKIN, THE AGE OF RIGHTS ix (1990) ("Human rights is the idea of our time, the only political–moral idea that has received universal acceptance."); Åshild Samnøy, *Human Rights as International Consensus: The Making of the Universal Declaration of Human Rights 1945–1948*, CHR. MICHELSEN INST. 129 (May 1993) ("By the Universal Declaration of Human Rights, the human rights references in the UN Charter got their authoritative interpretation. This interpretation is now a part of international customary law and constitutes the core of an international consensus on human rights.").

the cleavages that exist within the global trade regime.[190] These cleavages—which focus in part on whether the regime should accommodate states based on their respective levels of economic development—divide the international community along one of several binaries: developed versus developing, industrialized versus non-industrialized, the Global North versus South.[191] In this respect, the global trade regime is quite similar to the nonproliferation regime, which is defined by and grapples constantly with the dichotomy between the NWS and NNWS.[192]

The international human rights and global trade regimes contrast in another critical way. While the human rights enforcement fatigue discussed in section B serves as an illustration of inefficiency that impacts legal instruments along one level of law, the challenges facing the global trade regime described in this section characterize inefficiency that occurs due to divergence between multiple levels of law. Additional insight on this inefficiency can be gleaned by reviewing the history and evolution of the modern global trade regime.

Although classical economists articulated the benefits of free trade through bilateral specialization, their scholarship

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[190] UNITED NATIONS DEV. PROG., MAKING GLOBAL TRADE WORK FOR PEOPLE 50-51 (Earthscan Publications Ltd. 2003) [hereinafter Global Trade Regime Chapter] ("The collapse of the 1999 WTO Ministerial Conference in Seattle, Washington (US), caused more attention to be paid to the concerns of developing countries at the 2001 conference in Doha, Qatar.").
[191] *See* Rory Horner, *Towards a New Paradigm of Global Development? Beyond the Limits of International Development*, 44 PROGRESS HUM. GEOGRAPHY 415, 415-16 (2020) (suggesting a reformulation of current discourse on global development). Note also that differences exist between states that fall on either side of each respective binary.
[192] *See* Graham, Jr., *supra* note 8.

served as the theoretical foundation of the multilateral trading system that developed following the Second World War.[193] Articulating their shared vision for a postwar world economic order, the United States and the United Kingdom issued the Atlantic Charter in 1941, which, among other goals, envisaged lowered trade barriers and enhanced global economic cooperation to advance social welfare.[194] This vision culminated six years later in the General Agreement on Tariffs and Trade ("GATT").[195] Although not initially intended to serve as the foundation for the global trade regime, the failure of negotiating states to bring into force a treaty establishing the International Trade Organization elevated the GATT as the principal vehicle for reducing barriers to trade.[196]

From its inception, the GATT has advanced a multilateral international trading system that is predicated on the equality of its members, with each contracting party holding one

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[193] *See* Robert L. Formaini, *David Ricardo: Theory of Free International Trade*, 9 ECON. INSIGHTS, 2 (2004) (noting that "Ricardo's ideas became 'the fountainhead of all nineteenth-century free trade doctrine'" and continued to influence the global trade system thereafter). Note, however, that the modern global trade regime is not characterized by the bilateral specialization of trade that influenced the works of classical economists.

[194] Atlantic Charter ¶¶ 4-5, U.S.–U.K., Aug. 14, 1941, 55 Stat. 1603, E.A.S. 236.

[195] General Agreement on Tariffs and Trade, Oct. 30, 1947, 64 U.N.T.S. 187 [hereinafter GATT Treaty].

[196] *See* Susan Ariel Aaronson, *From GATT to WTO: The Evolution of an Obscure Agency to One Perceived as Obstructing Democracy*, ECON. HIST. ASS'N, JAN. 16, 2001, https://eh.net/encyclopedia/from-gatt-to-wto-the-evolution-of-an-obscure-agency-to-one-perceived-as-obstructing-democracy-2/ ("The US Congress never brought membership in the ITO to a vote, and when the president announced that he would not seek ratification of the Havana Charter, the ITO effectively died. Consequently the provisional GATT . . . governed world trade until 1994.").

vote.[197] From 1947 to 1993, the GATT involved eight rounds of negotiation. The initial rounds focused on tariff reduction and set an important precedent for the regime: the entrenchment at the multilateral level of legal and political processes designed to reduce trade barriers.[198] Starting with the Uruguay Round in 1987, however, the objectives of multilateral trade negotiations began to shift. Specifically, industrialized states' desire "to extend the GATT system to cover additional areas of international economic relations" led to the realization that the GATT "could not accommodate a radical enhancement and extension of multilateral trade mechanisms."[199] Consequently, under the Marrakesh Agreement of 1994, the 123 contracting parties concluded the Uruguay Round with the establishment of the WTO, which expanded the regime to encompass intellectual property and services and also set forth a dispute-resolution process "enabling cross-sectoral retaliation as part of the WTO enforcement mechanism."[200]

From 1995 onward, the WTO has supplanted the GATT as the principal body that facilitates multilateral trade.[201] Two

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[197] *See* MICHAEL J. TREBILCOCK & JOEL TRACHTMAN, ADVANCED INTRODUCTION TO INTERNATIONAL TRADE LAW, ch. 4 (2d eds., 2020).

[198] *See* Global Trade Regime Chapter, *supra* note 190, at 50 ("The first six rounds focused on reducing tariffs. And in the first five, tariff negotiations were based on reciprocal tariff concessions, negotiated bilaterally between 'principal' and 'substantial' suppliers and extended to all contracting parties.").

[199] *Id.*

[200] *Id.*; Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 3, No. 31874.

[201] Note, however, that the provisions of the GATT have merged into the WTO regime. *See The Uruguay Round*, WORLD TRADE ORG.,

principles constitute the normative foundation of the WTO system: (1) most-favored-nation ("MFN") status, which requires a state that offers any advantage or privilege to a trading partner to extend the same treatment to all other WTO members;[202] and (2) the national treatment policy, which requires equal treatment of imported goods and locally produced goods once the former have entered a domestic market.[203] As of 2020, 164 states are WTO members, including most of the former Soviet bloc and China, leading some to consider the WTO the "United Nations of International Trade."[204] The WTO system has a significant impact on world trade and—at least until recently—has been "enforced by the monitoring activities of various WTO bodies and by strengthened dispute resolution mechanisms."[205]

However, recent developments have undercut the effectiveness of the WTO system. The Doha Round, which began in 2001, has stalled indefinitely, as "neither developed

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https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact5_e.htm (last visited Apr. 11, 2022) ("The WTO replaced GATT as an international organization, but the General Agreement still exists as the WTO's umbrella treaty for trade in goods, updated as a result of the Uruguay Round negotiations.").

[202] *See* GATT Treaty, *supra* note 195, art. 1(1) ("[A]ny advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties.").

[203] *See* GATT Treaty, *supra* note 195, art. 3; *see also Principles of the Trading System*, WORLD TRADE ORG., https://www.wto.org/english/theWTO_e/whatis_e/tif_e/fact2_e.htm (last visited Apr. 11, 2022).

[204] Y.S. Lee, *Bilateralism Under the World Trade Organization*, 26 NW. J. INT'L L. & BUS. 357, 357 (2006).

[205] *Id*. at 357.

economies like the United States and the European Union nor developing countries like China and India were willing or able to make fundamental concessions."[206] The failure of these negotiations evokes the division in the global trade regime between developed and developing states.[207] In addition, institutional fragility has impacted the WTO through the U.S.-led freeze on appointments to the Appellate Body due to overreach concerns, which risks undermining the organization's dispute-resolution mechanism.[208] Although it is premature to assert that the WTO has collapsed outright,[209] these challenges persist for a variety of reasons, including an arguably overambitious agenda as well as the isolationist behavior of influential member states.[210]

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[206] *Global Trade After the Failure of the Doha Round*, N.Y. TIMES (Jan. 1, 2016), https://www.nytimes.com/2016/01/01/opinion/global-trade-after-the-failure-of-the-doha-round.html.

[207] *See* Horner, s*upra* note 191 and accompanying text.

[208] Bruce Hirsh, *Resolving the Appellate Body Crisis: Proposals on Overreach*, NATIONAL FOREIGN TRADE COUNCIL/TAILWIND GLOBAL STRATEGIES 2 (December 2019), https://www.nftc.org/default/trade/WTO/Resolving%20the%20WTO%20Appellate%20Body%20Crisis_Proposals%20on%20Overreach.pdf ("[T]he dispute settlement system will likely grind to a halt because of the absence of a quorum at the WTO Appellate Body. The United States has continued to block appointments to the Appellate Body out of its long-standing concern that the Appellate Body has gone beyond its limited mandate . . . .").

[209] Ralph Ossa, *WTO Success: No Trade Agreement but no Trade War*, VOXEU (June 11, 2015), https://voxeu.org/article/wto-success-no-trade-agreement-no-trade-war.

[210] *See, e.g.*, Paolo Galizzi, *Introduction: International Trade: Isolationism, Trade Wars, & Trump*, 42 FORDHAM INT'L L.J. 1375, 1377 (2019) ("The international trade system . . . [has] come under intense scrutiny and some would say attack under and from the Trump Administration. The Administration's isolationist tendencies and strong reaffirmation of

The challenges facing the WTO's multilateral system since the early 2000s have led most members of the international community to turn toward preferential trade agreements ("PTAs") to facilitate international trade.[211] PTAs, which take the form of bilateral, regional, or plurilateral agreements, are deals that offer advantages to contracting parties not otherwise extended to other WTO member states.[212] PTAs are by definition antithetical to the principle of MFN status, although, through a historical quirk, Article 24 of the GATT acknowledges their existence.[213] PTAs have experienced prolific growth throughout the WTO era. According to one estimate, while in the 1990s approximately 100 PTAs were in force, as of 2019 over 700 such deals exist.[214] On average, each

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sovereignty often collide with international rules and institutions and long held traditional alliances and views.").

[211] Pravin Krishna, *Preferential Trade Agreements and the World Trade System: A Multilateralist View*, NAT'L BUREAU ECON. RES. (2012) (NBER Working Paper No. 17840) ("[T]he rise in preferential trade agreements between countries stands as the dominant trend in the evolution of the international trade system in the recent two decades, with hundreds of GATT/WTO-sanctioned agreements having been negotiated during this period and with nearly every member country of the WTO belonging to at least one PTA.").

[212] *See id*. ("However, in an important exception to its own central prescript, the WTO, through Article XXIV of its General Agreement on Tariffs and Trade (GATT), does permit countries to enter into preferential trade agreements (PTAs) with one another."). Under the GATT, PTAs include both free trade agreements ("FTAs") as well as customs unions, though this Article primarily focuses on the former. *See* TREBILCOCK & TRACHTMAN, *supra* note 197.

[213] *See* TREBILCOCK & TRACHTMAN, *supra* note 197 (highlighting the motivations behind GATT Article 24, including the contracting parties' focus on customs unions as well as a clandestine U.S.–Canadian agreement).

[214] Leonardo Baccini, *The Economics and Politics of Preferential Trade Agreements*, 22 ANN. REV. POL. SCI. 75, 75 (2019).

state participates in fourteen PTAs.[215] Preferential deals account for half of global trade, undoubtedly assisted by the expansion of "mega-regional" deals.[216]

Despite the rise of PTAs as an alternative to multilateral deals negotiated under the auspices of the WTO, experts are divided as to whether these agreements promote free trade. Some have concluded that whether PTAs promote free trade depends on the size distribution of the respective trading blocs: a preferential agreement between similarly sized parties, for instance, increases the prospect of trade monopolization, which may undermine free trade globally.[217] Others argue that the consequences of PTAs depend on the diverse geographic, linguistic, and cultural contexts in which these deals operate. [218] Consequently, the effectiveness of PTAs depends on the

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[215] Alvaro Espitia et al., *Assessing the preferences in preferential trade*, VOXEU (July 10, 2019), https://voxeu.org/article/assessing-preferences-preferential-trade.

[216] *See id.* One mega-regional deal, the Trans-Pacific Partnership ("TPP"), notably failed following the Trump Administration's decision to withdraw the United States from the deal. However, other efforts and proposals such as the Regional Comprehensive Economic Partnership ("RCEP") and the Transatlantic Trade and Investment Partnership underscore the prevalence of widespread, multi-party preferential deals in shaping global trade. *See The United States Officially Withdraws from the Trans-Pacific Partnership*, OFFICE OF THE U.S. TRADE REP. (Jan. 2017), https://ustr.gov/about-us/policy-offices/press-office/press-releases/2017/january/US-Withdraws-From-TPP; *Transatlantic Trade and Investment Partnership (T-TIP)*, OFF. OF THE U.S. TRADE REP., https://ustr.gov/ttip (last visited Apr. 11, 2022).

[217] *See* Raymond Riezman, *Can Bilateral Trade Agreements Help to Induce Free Trade?*, 32 CANADIAN J. ECON. 751, 752 (1999) (noting that whether bilateral agreements promote free trade depends "on the size distribution of trading blocs").

[218] Julian Maluck, Nicole Glanemann & Reik V. Donner, *Bilateral Trade Agreements and the Interconnectedness of Global Trade*, FRONTIERS IN PHYSICS vol.6, 2 (2018).

scope and extent of the particular commitments agreed upon.[219] Moreover, these deals may be "negotiated to serve other, strategic (and possibly non-economic) purposes," in which case gains from trade may be distributed neither equitably nor efficiently.[220]

Along with the relative advantages of multilateral deals versus PTAs, considerable scholarly attention is devoted to whether PTAs contribute to the fragmentation of the multilateral trading system and the subversion of the MFN principle.[221] Some scholars contend that PTAs are a catalyst for multilateral agreements, facilitating "the type of coalitional politics that make it necessary to build consensus for agreements in the WTO."[222] In other words, PTAs "could eventually develop into a multinational framework, thereby giving the benefit of lower trade barriers to more countries as the number of participating countries increases."[223] However, even accepting this argument, PTAs still involve the short- to medium-term exclusion of certain states from advantageous

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[219] *Id.*

[220] *Id.*

[221] *See* Krishna, *supra* note 211; Robert McMahon, *The Rise in Bilateral Free Trade Agreements*, COUNCIL FOR. RELS. (June 13, 2006), https://www.cfr.org/backgrounder/rise-bilateral-free-trade-agreements ("A core principle of the World Trade Organization is the most-favored nation clause, meaning every member faces the lowest tariffs any other member has. Bhagwati and others say the proliferation of FTAs destroys this principle.").

[222] *See* McMahon, *supra* note 221.

[223] Lee, *supra* note 204, at 358. Some, however, argue for the existence of a stronger degree of convergence between the bilateral and multilateral levels. *See, e.g.*, STEPHAN W. SCHILL, THE MULTILATERALIZATION OF INTERNATIONAL INVESTMENT LAW (2009); Adrian M. Johnston & Michael J. Trebilcock, *Fragmentation in International Trade Law: Insights from the Global Investment Regime*, 12 WORLD TRADE REV. 621 (2013).

trade arrangements, which risks presenting a permanent "barrier to the trade of other countries . . . , particularly that of less-competitive developing countries."[224]

What, then, is the inefficiency that faces the global trade regime today? The divergence between the regime's multilateral foundation and the proliferation of bilateral and regional PTAs epitomizes the inefficiency that occurs when disparate levels of law do not advance the same objectives. In the global trade regime, the exclusionary advantages that PTAs promote "create a discriminatory environment in international trade."[225] Not only is such an environment conceptually damaging to the regime's core principles, but it also has distributional consequences for states that are unable to leverage PTAs to the extent that they would be able to leverage multilateral WTO deals.[226]

Along with uneven distribution, additional concerns arise from the fact that participation in a PTA may reduce incentives to engage in trade with other states and that inefficient trading blocs may commit weaker members to lopsided deals.[227] These

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[224] *Id.* at 370; *see also* Ben Richardson & Tony Heron, *Path Dependency and the Politics of Liberalisation in the Textiles and Clothing Industry*, NEW POLITICAL ECONOMY vol.13, 2 (2018) (articulating the path dependency tendencies of institutions such as the WTO, which "promote asymmetries in negotiating power that persist over time, thus locking in patterns of negotiation and policy making that are procedurally unfair").

[225] Lee, *supra* note 204, at 358.

[226] *See* Baccini, *supra* note 214, at 77 ("This review suggests . . . focusing on the distributional consequences of preferential trade liberalization. [This] is particularly relevant because it would allow scholars working on PTAs to engage with recent debates pointing to trade shocks as a key determinant of the backlash against globalization.").

[227] *See* TREBILCOCK & TRACHTMAN, *supra* note 197.

points of tension between the multilateral and bilateral or regional levels reflect disagreement about the global trade regime's broader objectives. While some states argue that the regime's focus should be to increase absolute levels of trade, others contend that free trade does not equate to fair trade and that the regime should strive to promote trade in a manner that advances collective social welfare.[228]

The global trade regime illustrates the importance of recognizing the threat of divergence that faces an international regime susceptible to fragmentation. In the trade context, "[c]onvergence, not divergence, . . . between bilateral/regional trade arrangements and WTO disciplines" would help to effectuate "the objectives of the multilateral trading system."[229] Notably, however, the tension between the multilateral and bilateral or regional levels of the global trade regime does not necessarily indicate that advancing a regime along multiple levels of law is futile. Rather, this case study demonstrates that inefficiency arises when laws across multiple levels are misaligned or seek to accomplish inconsistent objectives.

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[228] *See* Espitia et al., *supra* note 215 (contending that "the widening coverage of preferential trade agreements is in itself an antidote to trade diversion"). The goal of international social welfare harkens back to the Atlantic Charter. *See* Atlantic Charter, *supra* note 194, ¶ 5 ("Fifth, [the parties] desire to bring about the fullest collaboration between all nations in the economic field with the object of securing, for all, improved labor standards, economic advancement and social security . . . .").

[229] Lee, *supra* note 204, at 371.

III. COORDINATION INEFFICIENCIES IN THE NONPROLIFERATION CORPUS JURIS

Having considered the scope of the nonproliferation regime and defined inefficiency, this Part identifies the coordination inefficiencies that affect the nonproliferation *corpus juris*. These inefficiencies do not admit of simple solutions. Still, an important step in diagnosing the nonproliferation regime is to acknowledge that its pressure points—rogue nuclear states, nuclear terrorism, and the spread of nuclear technology and materials—are not isolated phenomena, but rather symptoms of systemic fragilities.[230] In this spirit, section A identifies the "original miscommunication" of the nonproliferation regime, which has led regime members to embrace contrasting views of the regime's objectives.[231] Sections B through D then consider three ways that this miscommunication has contributed to coordination inefficiencies in the regime's complex, multitiered body of law: (1) divergence between the bilateral and multilateral levels of law, (2) poorly calibrated treaties, and (3) a suboptimal enforcement environment.

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[230] *See* CIRINCIONE, *supra* note 26, at 139 ("There are three problems, however, that are more difficult to resolve. . . . [These] most difficult nuclear threats [are] terrorism, technology, and new weapon states."); *see also supra* notes 18-20 and accompanying text.

[231] *See infra* notes 246-252 and accompanying text.

A. The Nonproliferation Regime's Original Miscommunication

One of the principal diseconomies of scale that occurs as a firm expands is internal coordination due to the growing complexity of the enterprise's operations.[232] In contrast to the "neat picture" of a smaller firm, in which a single source can facilitate decision-making, a large-scale firm faces more pronounced logistical challenges:

> [E]xpansion . . . leads to problems of communication and cooperation, bureaucratic red tape, and the possibility that decisions will not be coordinated. Similarly, decision making may be slowed down to the point that decisions fail to reflect changes in consumer tastes or technology quickly enough. The result is impaired efficiency and rising average total costs.[233]

This microeconomic challenge reveals a reality that all legal systems face: the more pieces that comprise the system, the more complicated it becomes to facilitate a coordinated response between those pieces in achieving the system's objectives.

As far as this challenge applies to the nonproliferation regime, a foundational disagreement that impedes coordination within the nonproliferation *corpus juris* concerns the scope and prioritization of the regime's core objectives. Since the NPT's entry into force in 1970, a substantial body of law has

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[232] *See* MCCONNELL ET AL., *supra* note 2, at 169.
[233] *Id.*

developed to regulate the technology, institutions, and actors that relate to nuclear nonproliferation.[234] Moreover, the post-Cold War era has witnessed particularly pronounced growth in the nonproliferation *corpus juris*.[235] This growth may be the result of proliferation concerns arising in the absence of strategic stability of the Cold War or due to the burgeoning threats of rogue state and nonstate actors.[236] Since 1991, the international community has extended the NPT indefinitely and advanced at least five conventions bearing directly on nuclear nonproliferation.[237] Likewise, of the 2,552 UN Security Council resolutions passed since 1946, 81 address nuclear nonproliferation and security.[238] More than 80% of those resolutions were adopted after 1991.[239] Even among the five NWFZs, the three zones established following the Cold

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[234] *See infra* section I.B.

[235] *See infra* notes 237-240 and accompanying text.

[236] For a comprehensive analysis of the cogency of the "strategic stability" models used to characterize the U.S.–Soviet relationship during the Cold War, *see* David S. Yost, *Strategic Stability in the Cold War: Lessons for Continuing Challenges*, PROLIFERATION PAPERS, No. 36, 35 (2011) ("Some of the essential strategic choices that the United States and its allies made during the Cold War appear addressed to a bygone world rather than to today's challenges. These challenges include sophisticated terrorist networks . . . ."). On the rise of rogue state actors following the Cold War, *see* Sally-Ann Totman, *The End of the Cold War: Rogue States and Their Characteristics*, *in* HOW HOLLYWOOD PROJECTS FOREIGN POLICY 33-34 (2009) (noting that in the absence of the "open, yet constrained, rivalry" between the Soviet Union and United States, states such as North Korea, Iran, Iraq, and Libya, emerged "as the 'new enemies' that grew out of the . . . end of the bipolar world system").

[237] *See supra* notes 27, 109-114.

[238] These Security Council resolutions are listed in the Appendix referenced *supra* note 115.

[239] *See id*.

War have brought Southeast Asia, Central Asia, and Africa—together consisting of approximately two billion people—into the nuclear-weapons-free fold.[240]

Although the advancement of these legal instruments reflects the growth of the nonproliferation regime, this advancement also reflects the NPT's continued centrality to the regime. As the foundational nonproliferation agreement whose core provisions and paradigms all subsequent laws reference, the NPT's influence permeates the nonproliferation *corpus juris*.[241] Today, the laws that comprise the nonproliferation *corpus juris* reflect the NPT's Grand Bargain and its three pillars: nonproliferation, disarmament, and the promotion of peaceful nuclear energy.[242] However, these instruments also contend with state disagreements regarding the enforceability and prioritization of those objectives—cleavages that were "papered over" during the NPT's negotiation to attain its near-universal ratification.[243] In this respect, the failure, or unwillingness, of NPT negotiating parties to articulate a

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[240] *See Population: World*, WORLDOMETER, https://www.worldometers.info/population/world/ (last visited Apr. 11, 2022).

[241] *See supra* note 27 and accompanying text.

[242] *See supra* note 18 and accompanying text.

[243] *See* Jayantha Dhanapala, *The NPT: A Bear Pit or Threshold to a Nuclear-Weapons-Free World?*, AM. ACAD. ARTS & SCI., https://www.amacad.org/publication/nuclear-collisions-discord-reform-nuclear-nonproliferation-regime/section/4 (last visited Apr. 11, 2022) (noting that the original "sharp disagreement over the comparative importance of each pillar" of the regime has been "routinely papered over" since the 1960s); Steven E. Miller, *Proliferation, Disarmament and the Future of the Non-Proliferation Treaty*, *in* NUCLEAR PROLIFERATION & INT'L SEC. 52 (Morten Bremer Maerli & Sverre Lodgaard eds., 2007) ("On close scrutiny, it is hard to avoid the conclusion that Article VI [of the NPT] was written in an intentionally evasive and ambiguous way.").

cohesive vision for the nonproliferation regime constitutes the regime's "original miscommunication."[244] While some scholars argue that the three pillars represent a single unified stance on the regime's broader purpose, to most the actions and agendas of member states since 1970 indicate that this simplified view does not reflect reality.[245]

Three contrasting stances on the objectives of the nonproliferation regime typify the original miscommunication. In addition, these stances illustrate how the original miscommunication has led to cleavages between member states and to the coordination inefficiencies that this Article identifies. The first stance, held by Western nonproliferation scholars and NWS, contends that the "core rationale and principal purpose of the NPT is to prevent the spread of nuclear weapons."[246] Rather than acknowledging the three pillars as coequal, this stance considers nuclear disarmament and peaceful nuclear energy to be tangential, secondary objectives.[247]

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[244] *See* Miller, *supra* note 243, at 52.

[245] *Cf.* DAVID FISCHER, STOPPING THE SPREAD OF NUCLEAR WEAPONS: THE PAST AND THE PROSPECTS 6-7 (1992) ("A broadly shared perception that one's national interest is better served by not possessing nuclear weapons is thus the foundation of the international non-proliferation regime.").

[246] Miller et al., *supra* note 13.

[247] *See, e.g.*, Baker Spring, *The Misleading Messages from the Nonproliferation Treaty Review Conference*, HERITAGE (June 3, 2010) ("The NPT is designed, first and foremost, to prevent the spread of nuclear."); *see also* Miller, *supra* note 243, at 53 ("At no time during the life of the NPT, from 1968 onwards, have nuclear weapons been regarded as anything other than central and integral to the defense postures of the nuclear weapon states.").

To the contrary, the second stance, widely held by NNWS, holds out the three pillars as equal in importance.[248] According to this view, NWS commitments to fully disarm and to provide access to civil nuclear energy are not merely aspirational, but are legally binding requirements that accompanied the NNWS concession not to acquire nuclear weapons.[249] Reflecting the equality and sovereignty of the states that established the modern nonproliferation regime, "[t]his triangular bargain balances sacrifice with benefit and imposes obligations on NWS and NNWS alike."[250]

The third and final stance reflects an instinct, shared by members of the Non-Aligned Movement ("NAM"), that places less weight on the nonproliferation pillar.[251] As nonproliferation scholars William Potter and Gaukhar Mukhatzhanova write, "[B]roadly speaking, the [NAM] remains united in the conviction that the ultimate goal of the NPT is nuclear disarmament. . . . [N]onproliferation was never a central tenet of the Non-Aligned Movement."[252]

Although these three stances derive from the nonproliferation regime's original miscommunication, most subsequent additions to the nonproliferation *corpus juris* acknowledge and even entrench this division.[253] The

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[248] *See* Miller et al., *supra* note 13.
[249] *See id*.
[250] *Id*.
[251] *See* WILLIAM POTTER & GAUKHAR MUKHATZHANOVA, PRINCIPLES VS. PRAGMATISM: THE NON-ALIGNED MOVEMENT AND NUCLEAR POLITICS ch. 3, 1-2 (2012).
[252] *Id*.
[253] Although modern nonproliferation laws exist in the context of a nonproliferation regime defined by the NPT, these laws do not all reflect any one of the three contrasting stances on the regime. Rather, certain laws

deepening consequence of this miscommunication reflects the path dependence of the development of the nonproliferation *corpus juris*.[254] Premised on the notion that "history matters," the concept of path dependence posits that once a particular actor or system has "started down a track, the costs of reversal are very high. There will be other choice points, but the entrenchments of certain institutional arrangements obstruct an easy reversal of the initial choice."[255] Path dependence is characterized by its unpredictability,[256] inflexibility,[257] and potential inefficiency.[258]

Applying this concept to the nonproliferation regime, the strategic decision by NPT negotiating parties to paper over their differences with respect to the regime's objectives has solidified over time.[259] With subsequent legal developments

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remain "neutral" insofar as they promote objectives that do not run afoul of any one stance. *See supra* notes 263-264 and accompanying text.

[254] For an overview of path dependence in the political context, *see generally* Paul Pierson, *Increasing Returns, Path Dependence, and the Study of Politics*, 94 AM. POL. SCI. REV. 251 (2000).

[255] Margaret Levi, *A Model, a Method, and a Map: Rational Choice in Comparative and Historical Analysis*, COMPARATIVE POLITICS: RATIONALITY, CULTURE, AND STRUCTURE 28 (Mark I. Lichbach & Alan S. Zuckerman eds., 1997).

[256] "Unpredictability" as in actions are random and unplanned. *See* W. BRIAN ARTHUR, INCREASING RETURNS AND PATH DEPENDENCE IN THE ECONOMY 112-13 (1994).

[257]"Inflexibility" as in it is increasingly difficult for actors to shift paths over time. *See id*.

[258] "Potential inefficiency" as in the locked-in path may not be the most beneficial course of action. *See id*.

[259] For more on path dependence in the nonproliferation regime, *see* Wilfred Tsz Hin Wan, INSTITUTIONAL CHANGE AND THE NUCLEAR NON-PROLIFERATION REGIME 107 (Ph.D dissertation, 2013) ("The passive acknowledgement of these Article VII regional arrangements has morphed over the course of the regime's life. . . . I attribute this movement both to

exacerbating these divisions, the institutional entrenchment of the original miscommunication has placed the regime upon a path that is highly inefficient and difficult to depart.[260]

The growth of the nonproliferation *corpus juris* has contributed to the three coordination inefficiencies that affect the regime. These inefficiencies are not products of the NPT as a standalone agreement, but are rather products of the international social environment that the NPT and subsequent laws have created.[261] Importantly, the original miscommunication is distinct from the coordination inefficiencies—in fact, the inefficiencies can be considered consequences of the miscommunication and the international social environment that it has engendered. This distinction is analytically valuable because it demonstrates that the shortcomings of the NPT's Grand Bargain are not limited to the miscommunication formalized in that agreement, but have also been adopted and expanded by the laws and institutions established over the past half century.

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forces outside the regime (the unique regional context surrounding each treaty) and to path dependent processes (each treaty building upon its predecessors).").

[260] One such development is the ICJ's 1996 Advisory Opinion, which both reflects and expands upon the division between members of the nonproliferation regime as to the binding nature of Article VI of the NPT. *See* ICJ Advisory Opinion, *supra* note 50.

[261] Writing on the "slow institutionalization" of the regime, Wilfred Wan notes that this process "is a form of path dependence, with the regime becom[ing] somewhat self-perpetuating. The result is a slow institutionalization (a process of formalization in the implementation of regime principles), slight legalization (establishment of more binding obligations), and even jurisdictional expansion, as the regime has become embedded in the consciousness of policymakers." Wan, *supra* note 259, at 96. Ultimately, Wan finds "high barriers to any change in the NPT regime." *Id*.

Having considered the relationship between the original miscommunication and path dependence, it is unsurprising that disagreements regarding the nonproliferation regime's fundamental objectives cause inefficiency and threaten the regime's long-term viability. Nonetheless, there remains a shared interest among most members of the international community in avoiding a "heavily proliferated world."[262] Consequently, the first step in mitigating the consequences of this miscommunication involves addressing the regime's three coordination inefficiencies.

B. Divergence Between the Bilateral and Multilateral Levels of Nonproliferation Law

The first coordination inefficiency involves divergence between the bilateral and multilateral levels of nonproliferation law. Importantly, these laws that comprise these levels do not experience complete divergence. For instance, several multilateral agreements that comprise the nonproliferation *corpus juris*, including the Statute of the IAEA and the PTBT, enjoy widespread support.[263] Furthermore, bilateral

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[262] Miller et al., *supra* note 13.

[263] *See* Trevor Findlay, *Unleashing the Nuclear Watchdog: Strengthening and Reform of the IAEA*, CTR. FOR INT'L GOVERNANCE INNOVATION 49 (2012), https://www.cigionline.org/sites/default/files/iaea_final_0.pdf ("The IAEA's security documents are prepared in close consultation with member states, which is one reason why they achieve such widespread support."); *1963 Partial Test Ban Treaty*, WEAPONS L. ENCYC., http://www.weaponslaw.org/instruments/1963-partial-test-ban-treaty (last updated July 20, 2017) ("The PTBT is a product of decades of negotiation and a milestone in the nonproliferation effort. . . The PTBT applies to all 105 signatory Member States. France and China were the only nuclear

agreements such as the PNET, the TTBT, and other risk-reduction initiatives converge with those multilateral agreements.[264] These instances of convergence support political science scholar Daniel Verdier's conclusion that the nonproliferation regime represents a "combination of both" multilateral and bilateral legal and diplomatic initiatives.[265]

Although Verdier concludes that "dyadic diplomacy is not incompatible" with a multilateral enterprise such as the nonproliferation regime, there are certain contexts in which bilateral efforts do not constitute an "efficient component" of the broader regime.[266] Two classes of bilateral nonproliferation legislation diverge from the multilateral level due to their embodiment of contrasting stances on the original miscommunication. First, arms-reduction agreements, particularly those between the United States and Russia (and, previously, the Soviet Union), reflect division between NWS and NNWS as to whether the former have upheld their

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weapon states to not sign."). Treaties that include similarly uncontroversial levels of support include international nuclear security conventions. *See supra* notes 111-113.

[264] *See supra* notes 81-82, 107-108 and accompanying text. There is some degree of convergence between the PNET and TTBT, bilateral test-ban agreements between the United States and the Soviet Union, and multilateral test-ban agreements, as they collectively represent efforts to both build upon the foundation advanced by the PTBT and to set a foundation for the subsequent CTBT. *But see* Josef Goldblat, *TTBT/PNET—Steps Towards CTBT?*, 7 INSTANT RES. PEACE & VIOLENCE 26 (1977) (expressing skepticism about the ability of the TTBT and PNET to initiate a process that culminates in the successful adoption of the CTBT).

[265] Daniel Verdier, *Multilateralism, Bilateralism, and Exclusion in the Nuclear Proliferation Regime*, 62 INT'L ORG. 439, 439 (2008).

[266] *Id*. at 470.

commitment to pursue good-faith disarmament efforts.[267] NWS unwillingness to treat this commitment as legally binding has led to mounting NNWS frustration, particularly as U.S.–Russian deals continue to fall short of complete disarmament.[268] This frustration has become more pronounced since the NPT's indefinite extension in 1995, when NNWS "expressed disappointment with the lack of progress toward nuclear disarmament and feared that a decision to extend the treaty indefinitely would by default enable the nuclear-armed states to hold on to their nuclear arsenals in perpetuity and avoid any accountability in eliminating them."[269] The fact that nuclear weapons continue to play a focal role in the foreign

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[267] *See supra* notes 71-76 and accompanying text. For more on the enforceability of the NPT's requirement that NWS pursue disarmament in good faith, *see* Miller, *supra* note 243, at 52 ("Nevertheless, the elusive character of Article VI has given rise to several decades of contentious disputes over the meaning of the provision and to several decades of friction over whether the nuclear-weapon states have fulfilled their obligations under Article VI."); David A. Koplow, *Parsing Good Faith: Has the United States Violated Article VI of the Nuclear Non-Proliferation Treaty?*, 1993 WIS. L. REV. 301, 303 (evaluating the "United States' unwillingness to pursue test ban agreements more vigorously and [measuring] that performance against existing legal obligations").

[268] *See* Miller, *supra* note 243, at 53 ("From the beginning, therefore a significant and—over the years—a swelling chorus of voices has accused the nuclear-weapon states—especially the United States and Russia—of failing to live up to their disarmament obligations.").

[269] *Timeline of the Nuclear Nonproliferation Treaty (NPT)*, ARMS CONTROL ASS'N (last reviewed Mar. 2020), https://www.armscontrol.org/factsheets/Timeline-of-the-Treaty-on-the-Non-Proliferation-of-Nuclear-Weapons-NPT.

policies of the NWS, particularly the United States and Russia, suggests that this NNWS fear was, and remains, warranted.[270]

NWS and NNWS views on bilateral arms-reduction efforts have further diverged with time: while the United States and Russia argue today that their bilateral efforts squarely satisfy their disarmament commitments, NNWS deride these efforts as ineffectual and placatory.[271] For instance, NNWS have characterized post-Cold War era agreements such as SORT and the START treaties as designed to avoid placing the United States and Russia on a committed path toward Nuclear Zero.[272] Recent NNWS criticism is directed toward the failure of the START III negotiations and the U.S. withdrawal from the ABM and INF Treaties.[273] In an international social

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[270] *See* Miller, *supra* note 243, at 53 (noting that the disarmament obligation has "always coexisted with a reality marked by large nuclear arsenals and unshakable belief in the unique value and importance of nuclear weapons").

[271] *See* Sievert, *supra* note 60, at 95 (noting that these efforts do "not represent a practical commitment by the leaders of either the United States or Russia to actually abolish nuclear weapons"); *The International Nuclear Nonproliferation Regime*, *in* OVERCOMING IMPEDIMENTS TO U.S.–RUSSIAN COOPERATION ON NUCLEAR NONPROLIFERATION: REPORT OF A JOINT WORKSHOP 15 (2004) [hereinafter U.S.–RUSSIAN REPORT] ("The status of efforts by the nuclear-weapon states to fulfill their commitments under the international nuclear nonproliferation regime, including reductions of their nuclear arsenals, was indicated as a second reason why non-nuclear weapon states seek nuclear weapons.").

[272] *See* Merav Datan & Jürgen Scheffran, *The Treaty is Out of the Bottle: The Power and Logic of Nuclear Disarmament*, J. PEACE & NUCLEAR DISARMAMENT 114, 116 (2019) ("Although the existing non-proliferation and disarmament regime slowed down the spread and development of nuclear weapons and made first cuts into nuclear arsenals possible, it does not provide a practical path towards a nuclear-weapon-free world . . . ").

[273] *See supra* note 78 and accompanying text; *see also* Pranay Vaddi & George Perkovich, *Statement on the INF Treaty and Recommendations for Managing the Fallout of U.S. Withdrawal*, CARNEGIE ENDOWMENT FOR INT'L PEACE (Jan. 30, 2019),

environment in which NNWS believe that such agreements undermine the multilateral regime's core objectives, the inability to sustain even insubstantial bilateral deals indicates that these efforts do justice to neither NWS nor NNWS stances on the regime.

The second class of divergent bilateral laws, evoking divergence in the global trade regime, concerns civilian nuclear deals. The 2005 U.S.–Indian nuclear deal showcases an instance of stark divergence between the bilateral and multilateral levels of nonproliferation law.[274] While the NPT prohibits the provision and trade of nuclear energy technology with non-ratifying states such as India, the United States entered into this agreement on the basis that it serves nonproliferation ends to include India in international nuclear export control regimes.[275] Meanwhile, NNWS critics contend that the U.S. justification for the deal was mere pretense, and

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https://carnegieendowment.org/2019/01/30/statement-on-inf-treaty-and-recommendations-for-managing-fallout-of-u.s.-withdrawal-pub-78249 ("U.S. withdrawal [from the INF Treaty] will exacerbate missile proliferation in Asia without improving U.S. security in the Pacific. U.S. standing with its Asian regional allies—including Japan, South Korea, Australia, Taiwan, and India—could be further reduced without a comprehensive regional security strategy that those allies support.").

[274] *See supra* note 84 and accompanying text.

[275] *See* Jayshree Bajoria & Esther Pan, *The U.S.–India Nuclear Deal*, COUNCIL FOR. RELS. (Nov. 5, 2010), https://www.cfr.org/backgrounder/us-india-nuclear-deal ("If you look at the three countries outside the Nuclear Non-Proliferation Treaty (NPT)-Israel, India, and Pakistan-this stands to be a unique deal." (quoting Charles D. Ferguson, then a science and technology fellow at the Council on Foreign Relations)); *see also* U.S.–India Joint Statement, supra note 84 ("[Both states] [c]ommit to play a leading role in international efforts to prevent the proliferation of Weapons of Mass Destruction. The U.S. welcomed the adoption by India of legislation on WMD (Prevention of Unlawful Activities Bill).").

that this, and other politically motivated deals, inflict lasting damage on the regime because they disadvantage states that agreed to substantial concessions with the expectation that they alone will benefit from civilian nuclear energy.[276]

As in the global trade context, a concern that extends to both bilateral arms-reduction and civilian nuclear deals is that such deals may discourage members of the international community from pursuing multilateral nonproliferation efforts in favor of less efficient, bilateral agreements.[277] Perception matters in international law,[278] and the more that NNWS view NWS as shirking their multilateral legal obligations through bilateral agreements, the more challenging it becomes to reconcile this inefficiency.

C. Poorly Calibrated Treaties

The second coordination inefficiency, poorly calibrated treaties, cuts in two directions: what this Article terms "splintered disruptors" and "cohesive enablers." First, splintered disruptors encompass multilateral agreements that

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[276] Amitai Etzioni, *The Darker Side of the U.S.-India Nuclear Deal*, THE DIPLOMAT (Feb. 13, 2015), https://thediplomat.com/2015/02/the-darker-side-of-the-u-s-india-nuclear-deal/ ("[T]he deal violated the spirit if not the letter of the [NPT, which made] a twofold promise: that those nations that possess nuclear weapons will gradually give them up, and that these same nations will refuse to share nuclear technology and fuel with countries that refuse to sign the NPT.").

[277] *See supra* note 227 and accompanying text.

[278] *See* Oona Hathaway & Scott. J. Shapiro, *Outcasting: Enforcement in Domestic and International Law*, 121 YALE L.J. 252, 256 (2011) (noting the common criticism of international law that it "cannot be real law because real law must be capable of affecting behavior through the threat and exercise of" coercion).

do not command widespread international support because they seek to shift the regime's status quo with respect to its core pillars.[279] An important caveat is that not all treaties that command less-than-universal support are splintered disruptors. For instance, although the Nuclear Terrorism Convention only has 115 ratifying states (far fewer than the 191 states that have ratified the NPT), it is not a splintered disruptor because the breadth of the convention's ratification does not reflect substantial opposition to its objectives.[280] Evaluating splintering, therefore, is not solely a quantitative exercise. Rather, the reasons that a state or bloc of states object to the ratification of a treaty (and specifically, whether their objections reflect contrasting stances on the purpose of the regime) carry weight in determining whether that treaty is a splintered disruptor.

One category of splintered disruptor consists of multilateral agreements that are negotiated and signed, but that

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[279] *See* Miller et al., *supra* note 13 ("The NPT is built around three pillars: nonproliferation, disarmament, and peaceful uses of nuclear technology.").

[280] An important characteristic of instruments such as the Nuclear Terrorism Convention is that little dissension occurs due to divergent stances on the regime's original miscommunication. For more on why states choose to not sign, or to sign but not ratify treaties for reasons other than actual opposition to the objectives of the agreement, *see* Natalie Baird, *To Ratify or not to Ratify? An Assessment of the Case for Ratification of International Human Rights Treaties in the Pacific*, 12 MELBOURNE J. INT'L L. 1, 20-21 (2011) (noting that even if a state values the objectives of a particular treaty, the drain on resources stemming from "upfront implementation costs and ongoing compliance costs" may lead the state to focus on more controversial accords that require full-fledged ratification); Nicole Eva, *Treaties and Ratification*, 28 TALL Q. 25, 25 (2009) ("Another interesting fact is that sometimes countries sign treaties which they have no intention of actually ratifying primarily as a public relations exercise for that country.").

fail to attain the level of support required to enter into force. Two prominent treaties in this respect are the CTBT and the FMCT, which respectively call for the prohibition of all nuclear testing and the prohibition of fissile material production.[281] If enforced, these agreements would arguably represent the most substantial legal steps taken toward both disarmament and nonproliferation in over fifty years.[282] However, the failure to build a sufficiently broad coalition of support for the FMCT and the unwillingness of influential states such as the United States and China to ratify the CTBT have left both proposals in limbo.[283] Meanwhile, numerous states (unsurprisingly majority NNWS) ratified the CTBT over two decades ago, leaving the regime to contend with a piecemeal legal framework in which these agreements will remain proposals indefinitely.[284]

Perhaps in response to the stagnation associated with the first category of splintered disruptor, the second category

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[281] *See supra* notes 109-110 and accompanying text.

[282] *See supra* note 263 and accompanying text (referencing the IAEA Statute and the PTBT, along with the NPT, as early multilateral instruments that formed the foundation of the nonproliferation regime).

[283] *See* John Carlson, *Is the NPT Still Relevant? – How to Progress the NPT's Disarmament Provisions*, 2 J. PEACE & NUCLEAR DISARMAMENT 97, 103 (2019).

[284] *See* Daryl G. Kimball, *Revive the Test Ban Treaty*, ARMS CONTROL ASS'N, https://www.armscontrol.org/act/2006-09/issue-briefs/revive-test-ban-treaty (last visited Apr. 11, 2022) ("Indeed, support for the treaty has steadily grown, as 176 states have signed the CTBT and 135 have ratified it. But the U.S. Senate's highly partisan 1999 rejection of the CTBT . . . and the reluctance of nine other CTBT 'rogue states' have delayed its formal entry into force . . . ."). Although over 130 states have ratified the CTBT, the proposed treaty still constitutes a splintered disruptor because the opposition of the eight requisite Annex 2 states stems from their conviction that the treaty's entry into force would unacceptably solidify their legal disarmament obligations.

consists of treaties advanced by dissatisfied regime members, primarily NNWS, that seek to disrupt the status quo of the nonproliferation regime. The most prominent treaty in this respect is the TPNW, which may well serve as a template for NNWS moving forward.[285] As the cleavages between regime members become further engrained, the nonproliferation regime will likely witness an increase in agreements comparable to the TPNW that advance controversial, divisive, and firmly held perspectives on the future of the regime.[286]

Along with splintered disruptors, the nonproliferation regime's second coordination inefficiency encompasses "cohesive enablers"—treaties that command widespread adherence without requiring member states to stake out an ideological position with respect to the regime's core pillars. Consider the principal multilateral instruments that address nuclear terrorism, the Nuclear Terrorism Convention and UN Security Council Resolution 1540.[287] These agreements are cohesive enablers not only because they have been universally ratified and implemented, but also because they achieved this widespread ratification through palatable, relatively

[285] *See supra* notes 120-121 and accompanying text.
[286] *See* Nick Ritchie, *The Treaty on the Prohibition of Nuclear Weapons: delegitimising unacceptable weapons*, EUROPEAN LEADERSHIP NETWORK 47 (Dec. 2017), https://www.europeanleadershipnetwork.org/wp-content/uploads/2017/12/ELN-Global-Perspectives-on-the-Nuclear-Ban-Treaty-December-2017.pdf ("Claims that the prohibition treaty is a threat to the NPT tend to mask a deeper opposition to the delegitimation of nuclear weapons . . . . [C]laims that the treaty is divisive miss the point that it is a symptom of deep and growing division within the NPT, not a cause of it.").
[287] *See supra* notes 114, 118.

uncontroversial objectives that do not strain the regime's three pillars.[288]

One may ask: How is nuclear terrorism a "relatively uncontroversial" objective? The answer reveals an important truth about cohesive enablers. Preventing nuclear terrorism is undoubtedly a worthy goal. In this respect, cohesive enablers such as the Nuclear Terrorism Convention and Resolution 1540 have the capacity to contribute positively—and significantly—to the regime. Nonetheless, the widespread, almost foregone, conclusion that nuclear terrorism should be deterred makes overreliance on such treaties tempting. In the long run, however, hinging the advancement of the nonproliferation regime solely on politically palatable treaties that do not address the regime's core structural challenges risks creating the illusion of progress.[289] Moreover, as the path

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[288] *See supra* note 280 and accompanying text. Scholarship on both instruments suggests that international opposition to these two instruments is predicated on considerations other than ideological opposition to their respective objectives. On the Nuclear Terrorism Convention, *see* Paige Willan, *The Convention on the Suppression of Acts of Nuclear Terrorism: An Old Solution to a New Problem*, 39 GEO. J. INT'L L. 527, 537 (2008). On Resolution 1540, *see* Peter Crail, *Implementing UN Security Council Resolution 1540: A Risk-Based Approach*, 13 NONPROLIFERATION REV. 355, 357-58 (2006) ("Even if a state supports the [Resolution's] aim of preventing WMD proliferation to non-state actors, it must still be able to muster a certain degree of technical and legal expertise, as well as financial and human resources, to establish the specific mechanisms outlined in the resolution.").

[289] This overreliance concern reflects the view that since the inception of the modern nonproliferation regime, the collective decision to "paper over" differences between states has made progress challenging. *See* Dhanapala, *supra* note 243. With time, this decision risks rendering the regime "an unambitious static regime, solidifying prevailing inequities and the discriminatory status quo." Nabil Fahmy, *An Assessment of International*

dependence of the nonproliferation *corps juris* suggests, overreliance on cohesive enablers may make the pursuit of meaningful multilateral progress more challenging with time.[290]

D. Suboptimal Enforcement Environment

The nonproliferation regime's third coordination inefficiency parallels a diseconomy of scale that arises in microeconomics:

> [I]n massive production facilities workers may feel alienated from their employers and care little about working efficiently. Opportunities to shirk, by avoiding work in favor of on-the-job leisure, may be greater in large plants than in small ones. Countering worker alienation and shirking may require additional worker supervision, which increases costs.[291]

The challenge of ensuring proper supervision and enforcement with respect to international legal obligations is not unique to the nonproliferation regime. For instance, the experience of the international human rights regime attests to the difficulty of encouraging compliance with international law given that states are sovereign actors that typically do not answer to

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Nuclear Nonproliferation Efforts After 60 Years, 13 NONPROLIFERATION REV. 81, 82 (2006).

[290] *See* Wan, *supra* note 259, at 96 (emphasizing the "high barriers to any change in the NPT regime").

[291] *See* MCCONNELL ET AL., *supra* note 2, at 169.

supranational authorities.[292] Rather, state compliance with international law is often attributed to one of two rationales: (1) respect for power politics[293] or (2) adherence to the rule of law.[294]

To be sure, the nonproliferation regime does not yet face the scope of enforcement challenges facing the international human rights regime.[295] As Hathaway notes, low incentives to police adherence to legal obligations exacerbate the consequences of the instrumental–expressive disjuncture in the human rights context.[296] Conversely, the international community has stronger incentives to monitor compliance with respect to security-related agreements.[297] Nonetheless, the risk of disjuncture in the nonproliferation context raises the

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[292] *See supra* notes 166-167 and accompanying text.

[293] *See* Wolfrum, *supra* note 139, at 13-19 ("Sources of [international] law are therefore neither identifiable nor authoritative. . . . Due to the lack of coercive authority, compliance with international law completely depends, so it is argued, on the political will of the State concerned. Big and powerful States are favoured over small or less potent States").

[294] *See id*. at 83-89. For more on why states cede their sovereignty to abide by international norms, *see generally* Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599 (1997) (describing why states comply with international law despite the absence of effective enforcement mechanisms).

[295] *See* DeFrancia, *supra* note 60, at 709 ("Although nuclear law is highly specialized, the employment of coercive measures to enforce nonproliferation obligations implicates a range of cross-cutting international law disciplines, including the law of international sanctions, use of force law, and the law of intervention.").

[296] *See supra* notes 166, 171-177 and accompanying text. (Make sure the supra notes are correct).

[297] *See* Hathaway, *supra* note 42, at 2006 ("[A] country is unlikely to ratify a security pact or a treaty governing the use of airspace or the sea and then fail to abide by its terms.").

possibility that the nonproliferation regime too will contend increasingly with a suboptimal enforcement environment.

As with the first two coordination inefficiencies, the risk of an instrumental–expressive disjuncture in the nonproliferation context derives from the regime's original miscommunication. Perceived NWS disregard for, and NNWS dissatisfaction with, the regime's three pillars may convince disillusioned states to disavow their legal commitments, making it difficult to determine whether their private intentions align with their public obligations.[298] In this sense, the regime's suboptimal enforcement environment derives from an inability to timely and accurately detect state intentions with respect to their nonproliferation commitments, rather than from low incentives to "police noncompliance" with such commitments.[299] This limited capacity for detection reflects the ability of certain states to use an expansive enterprise such as the nonproliferation regime as "cover" to selectively uphold their legal commitments.[300]

The reasons why states may grow dissatisfied with the nonproliferation regime and consequently disavow their commitments under the NPT may vary. Furthermore, it is possible that considerations distinct from regime

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[298] For more on the gulf between public statements and private reservations in international law, *see supra* notes 184-185 and accompanying text. For a work that creates an analytical approach to evaluate state intentions with respect to their nonproliferation obligations, *see generally* Peter R. Lavoy, *Nuclear Proliferation Over the Next Decade: Causes, Warning Signs, and Policy Responses*, 13 NONPROLIFERATION REV. 433 (2006).

[299] Hathaway, *supra* note 42, at 1938; *see* RUBLEE, *supra* note 5, at 18, 28.

[300] *See supra* notes 183-185 and accompanying text; *see also* Eva, *supra* note 280, at 25.

dissatisfaction will compel states to disavow their NPT commitments. These considerations coincide with several key arguments on the decision to proliferate, which in turn are based on competing theories of state behavior separated into the neorealist, liberal institutionalist, and constructivist camps.[301] The triggers to which these arguments point may vary. For instance, neorealist analysis focuses on regional security concerns and other geopolitical security dynamics that would convince a state to shirk its NPT obligations.[302] Meanwhile, liberal and constructivist theory explain regime dissatisfaction by referencing, respectively, the breakdown of institutional capabilities within the nonproliferation *corpus juris* and collective loss of faith in the regime's mission.[303] Although these theories articulate differing reasons for regime dissatisfaction—and, in fact, certain theories do not analyze dissatisfaction with the regime at all—under each theory, a state's weakened commitment to the NPT would reflect and contribute to the suboptimal enforcement environment in which the nonproliferation regime operates.

Two contexts demonstrate the challenge of detecting states that are likely to shirk their nonproliferation obligations due to an instrumental–expressive disjuncture. The first context concerns states that are currently invested in the nonproliferation regime but may decide that the enterprise

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[301] *See generally* Scott D. Sagan, *Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb*, 21 INT'L SEC. 54 (Winter 1996/1997).
[302] *See, e.g.*, Mark Fitzpatrick, *How Japan Could Go Nuclear*, FOR. AFF. (Oct. 3, 2019), https://www.foreignaffairs.com/articles/asia/2019-10-03/how-japan-could-go-nuclear. *But see* William C. Potter & Gaukhar Mukhatzhanova, *Divining Nuclear Intentions: A Review Essay*, 33 INT'L SEC. 136, 153-55 (Summer 2008).
[303] *See* Potter & Mukhatzhanova, *supra* note 302, at 155-58.

offers few benefits in exchange for substantial concessions. Some scholars argue that the nonproliferation *corpus juris* already experiences setbacks due to states acting on this dissatisfaction. As Ian Anthony, Director of the European Security Programme at the Stockholm International Peace Research Institute, writes:

> A significant number of legal and technical innovations developed to strengthen the nonproliferation regime in recent years are not being applied and used to the degree that is desirable even though they are potentially powerful tools. One hypothesis to explain why that should be is that states are unwilling to bear the cost of applying these tools in support of the NPT because they see less and less advantage to themselves in working actively to strengthen the nonproliferation regime.[304]

This statement captures the concern that regime dissatisfaction will progressively undercut state adherence to international legal obligations. Although the sources of dissatisfaction vary, they may collectively result in states losing faith in the benefits that they believed stemmed from regime membership, including "Negative Security Assurances, sharing in peaceful

[304] Ian Anthony, *Managing the Transfer of Nuclear Technologies Under the NPT*, *in* NUCLEAR WEAPONS AFTER THE 2010 NPT REVIEW CONFERENCE 27 (Zanders ed., 2010), https://www.iss.europa.eu/sites/default/files/EUISSFiles/cp120_0.pdf.

nuclear technology, and a very real perception of responsible statehood."[305]

The potential actions of two groups of states reveal the consequences of failing to timely address long-term dissatisfaction with the regime. These groups, latent nuclear and non-latent states, distinguish states that possess the technological capabilities needed to develop nuclear weapons from those that do not.[306] If any of the thirty to fifty latent nuclear states decide that their agreement to not pursue nuclear weapons is no longer worthwhile due to the lack of disarmament progress by the NWS, they may invest in becoming "one screwdriver's turn away" from a full-fledged weapons program and use this as leverage in future negotiations.[307] Moreover, latent states such as Japan and South Korea may decide that outright acquisition is the best course of action due to international security concerns, in particular the threat that North Korea poses.[308] At that point, it

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[305] *See* Jonas, *supra* note 21, at 435 (2005).

[306] *See* Joseph F. Pilat, *Report of a Workshop on Nuclear Latency*, WOODROW WILSON INT'L CTR. FOR SCHOLARS (2014), https://www.wilsoncenter.org/publication/exploring-nuclear-latency.

[307] *See The International Nuclear Nonproliferation Regime*, *in* OVERCOMING IMPEDIMENTS TO U.S.–RUSSIAN COOPERATION ON NUCLEAR NONPROLIFERATION: REPORT OF A JOINT WORKSHOP 15 (2004) ("The status of efforts by the nuclear-weapon states to fulfill their commitments under the international nuclear nonproliferation regime, including reductions of their nuclear arsenals, was indicated as a second reason why non-nuclear weapon states seek nuclear weapons."). For more on using latency as leverage, *see generally* Tristan A. Volpe, *Atomic Leverage: Compellence with Nuclear Latency*, 26 SEC. STUD. 517 (2017).

[308] *See* Rohan Mishra, Note, *Toward a Nuclear Recognition Threshold*, 120 COLUM. L. REV. 1035, 1060 (2020) ("In a global context where North Korea has superior conventional and nuclear forces and where Japan and South Korea have reason to doubt the United States' ability and willingness

would be untenable to characterize those states as "rogue" given the profound transformation of the international social environment that would accompany their decision to act on their latent nuclear capabilities.[309]

Although technologically incapable of acquiring nuclear weapons, non-latent states also pose a long-term challenge to the nonproliferation regime. If their dissatisfaction with the regime intensifies, non-latent states may consider forsaking their own nonproliferation commitments.[310] The ensuing deterioration of the nonproliferation *corpus juris* would likely extend across several critical elements of the existing nonproliferation infrastructure: (1) abstention from nonproliferation dialogue and policymaking, (2) unwillingness to support regime objectives through unilateral action such as economic sanctions, and (3) withholding of financial and political support for initiatives such as the IAEA safeguards systems. The breadth of these concerns reflects the importance of multilateral engagement to the regime and the nonproliferation norm.[311] The nonproliferation regime

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to provide security, they may choose to break out and build their nuclear arsenals to guarantee their own security.").

[309] *See id*. at 1060-61 ("Many commentators would mark Japan and South Korea's decision to proliferate alone as the effective end of the Grand Bargain and dissolution of the NPT. Even if this were not the case, the domino effect that would soon ensue following their decision to proliferate . . . would decisively sound the death knell for the NPT framework.").

[310] *See* Meyer, *supra* note 14 ("Reinvigorating the NPT will require a major change of policy and practice on the part of its leading states-parties. If this rescue effort is not mounted, there is a serious risk that the treaty will start to hemorrhage its authority and support."); Anthony, *supra* note 304.

[311] *See* Jayantha Dhanapala, *Multilateralism and the Future of the Global Nuclear Nonproliferation Regime*, 8 NONPROLIFERATION REV. 99, 102 (2001) ("A challenge of this global scope . . . requires a collaborative global

ultimately derives its legitimacy from the entire international community, and a cascading decision by latent nuclear or non-latent states to abandon the nonproliferation *corpus juris* surely would be devastating. Consequently, improving the detection of state intentions with respect to their nonproliferation commitments remains a necessary step moving forward.

The second context susceptible to suboptimal enforcement involves attempts by rogue states to acquire nuclear weapons. Determining whether a state is "rogue" is a subjective inquiry made in reference to geopolitical and strategic considerations.[312] Nonetheless, of the geopolitically isolated countries commonly labeled as rogue states, North Korea is the only one to successfully develop nuclear weapons.[313] Although a multitude of factors motivated North Korea's pursuit of nuclear weapons, members of the international community have long directed their attention toward the inability of the nonproliferation *corpus juris* to promulgate a framework that accurately monitors the progression of North Korea's nuclear

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solution. When Article VI of the NPT says that 'Each of the Parties to the Treaty' (not just the NWS) shall undertake to pursue negotiations on nuclear disarmament, it yet again reflects the multilateral approach to the overall nuclear regime.").

[312] *See* Jason Rose, *Defining the Rogue State: A Definitional Comparative Analysis Within the*
Rationalist, Culturalist, and Structural Traditions, J. POL. INQUIRY vol.4, 1 (2011) ("In political science literature the term 'rogue state' is used ostensibly to define a class of states that combines the seeming irrationality and fanaticism of terror groups with the military assets of states. It is a loose and controversial term.").

[313] *See* Sico van der Meer, *How Rogue States Play the Game: The Case of North Korea's Nuclear Programme*, *in* CHALLENGES IN A CHANGING WORLD 221-23 (de Zwaan et al. eds., 2009).

ambitions.[314] Decades-long legal and diplomatic efforts to bring North Korea to the negotiating table prior to its acquisition of deliverable nuclear weapons were largely futile.[315] Likewise, the state's 2003 withdrawal from the NPT, then a shock to the international community, became a legal inevitability once the state declared its intention to remove itself from the nonproliferation fold.[316]

Although North Korea is the only rogue state to acquire nuclear weapons thus far, the shortcomings of the nonproliferation regime's ability to detect and discourage nuclear breakout remain relevant with respect to future would-be proliferants.[317] Among other steps, an improved capacity for

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[314] *See* John Gershman & Wade L. Huntley, *North Korea & the NPT*, INST. POL'Y STUD. (Oct. 2, 2005), https://ips-dc.org/north_korea_the_npt/ ("North Korea is the first state to withdraw from the NPT. Pyongyang also reneged on both the 1992 agreement with South Korea to keep the Korean Peninsula nuclear free and on the 1994 Agreed Framework. Thus, there currently exist no formal international legal constraints on North Korea's nuclear activities.").

[315] *But see* Christopher Lawrence, *Normalization by Other Means: Technological Infrastructure and Political Commitment in the North Korean Nuclear Crisis*, 45 INT'L SEC. 9, 10 (2020) (presenting a "techno-diplomacy" model that holds that efforts to constrain North Korea's nuclear ambitions such as the 1994 Agreed Framework should be considered successful).

[316] See Raven Winters, Note, *Preventing Repeat Offenders: North Korea's Withdrawal and the Need for Revisions to the Nuclear Non-Proliferation Treaty*, 38 VAND. J. TRANSNAT'L L. 1499, 1507-08 (2005); Matthew Liles, Comment, *Did Kim Jong-Il Break the Law? A Case Study on How North Korea Highlights the Flaws of the Non-Proliferation Regime*, 33 N.C. J. INT'L L. & COM. REG. 103, 116-17 (2007) (describing North Korea's withdrawal from the NPT and possible legal violations that accompanied that withdrawal).

[317] *See* George Perkovich, *Abolishing Nuclear Weapons: Why the United States Should Lead*, CARNEGIE ENDOWMENT FOR INT'L PEACE 2 (October

detection would likely involve the development of a more attuned sense of the states most likely to perceive an instrumental–expressive disjuncture. Some, as in the case of Iran, may be more obvious than others in light of clear statements of dissatisfaction with the nonproliferation regime and its inequities.[318] For states that are more guarded with their reservations, the international community would do well to heighten the legal consequences of acting on those reservations. Even if international law alone is unable to prevent a would-be proliferant from acquiring nuclear weapons, an improved enforcement environment could cut off legitimate pathways to regime withdrawal and coordinate state responses to illegal action.[319]

2008, Policy Brief No. 66) ("[A]s nuclear know-how, equipment, and material spread around the world, so too does the wherewithal to develop nuclear weapons. The difficulty of detecting weapons proliferation rises as the overall density of nuclear commerce, training and cooperation increases."); *Will More States Acquire Nuclear Weapons?* FOR. AFF. (Dec. 14, 2021), https://www.foreignaffairs.com/ask-the-experts/2021-12-14/will-more-states-acquire-nuclear-weapons.

[318] *See National Intelligence Estimate Iran: Nuclear Intentions and Capabilities—Key Judgments*, INTELLIGENCE & NAT'L SEC. (Jan. 11, 2021), https://www.tandfonline.com/doi/abs/10.1080/02684527.2021.1857071?journalCode=fint20.

[319] *See* Winters, *supra* note 316, at 1525-27 (describing a proposal to strengthen the NPT's Article X withdrawal mechanism to prevent a situation in which a would-be proliferant leaves the regime in an arguably legal manner that suspends the authority of the IAEA to inspect its facilities). Although such an effort would not reverse a would-be proliferant's nuclear breakout, it would be important in ensuring that the state's breakout is not legally permissible, as North Korea's breakout was. *See* Liles, *supra* note 316.

CONCLUSION

This Article contributes to the nonproliferation scholarship by identifying the coordination inefficiencies of the nonproliferation *corpus juris*. The original miscommunication makes addressing these inefficiencies challenging, as states hold conflicting and deeply engrained views of the nonproliferation regime and international security. Still, attempts to theorize the systemic inefficiencies of the international human rights and global trade regimes attest to the value of pursuing comparable efforts in the nonproliferation context, as they may help to identify opportunities to address these inefficiencies moving forward.

FIGURE 1. COORDINATION INEFFICIENCIES

Coordination Inefficiencies	Areas of Concern
Bilateral–Multilateral Level Divergence	U.S.–Russian arms-reduction agreements, bilateral civilian nuclear deals
Poorly Calibrated Treaties	Splintered Disruptors: CTBT, FMCT, TPNW
	Cohesive Enablers: Nuclear Terrorism Convention, UN S.C. Resolution 1540
Suboptimal Enforcement Environment	Rogue states, latent nuclear states, nonlatent states

In this spirit, two guiding questions are worthwhile for nonproliferation scholars and policymakers to consider. First, does the international community share a vocabulary on the nonproliferation regime? As discussed earlier, most regime members hold a common desire to prevent a heavily proliferated world.[320] However, the original miscommunication makes reaching common ground challenging due to contrasting perspectives that blocs of states hold on the purpose of the nonproliferation regime. The inability of the regime to address these discrepancies undermines collective action, as states lack a framework to understand and engage with their counterparts' worldviews. Consequently, it is critical to advance a shared vocabulary. Even if these efforts do not immediately compel states to adjust their respective stances, genuine reconciliation requires the nonproliferation regime to shift from its tendency to paper over differences and to instead promote direct, ambitious discourse.[321]

Second, which venues are best suited to encouraging the development of this shared vocabulary? Several options should be considered. For instance, multilateral fora such as the NPT Review Conference and UN Security Council committees are advantageous due to the groupings of states (both NWS and NNWS) that they facilitate as well as their

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[320] Miller et al., *supra* note 13.

[321] *See* Paul Meyer, *The NPT Turns 50: A Mid-life Crisis?*, CTR. INT'L POL'Y STUD. (Mar. 4, 2020), https://www.cips-cepi.ca/2020/03/04/the-npt-turns-50-a-mid-life-crisis/ ("The papering over of fundamental fault lines in the NPT's condition is not a sustainable strategy. . . . The NPT needs a concerted effort by all its states parties to demonstrate that its commitments will be respected and implemented, or it risks having its authority melt away.").

ability to promulgate final declarations and statements of understanding.[322] Alternatively, shifting collective efforts toward currently underleveraged levels of law may yield positive results. Echoing Hathaway's concern that overreliance on universal treaties may be counterproductive in the human rights context, regime members should critically evaluate the shortcomings of the multilateral level of nonproliferation law.[323] Moreover, just as the regional human rights systems enable certain states to express their human rights imperatives,[324] a regional reorientation of the nonproliferation *corpus juris* may allow blocs of states to hold space for their nonproliferation priorities within the broader regime.[325]

Last, regime members should consider whether prospective laws can be designed to increase compliance and to facilitate a shared vocabulary. As the experiences of the international human rights and global trade regimes indicate, "[a]greements are more likely to succeed when design elements complement one another, and reflect the constraints

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[322] Although past NPT Review Conferences have only been modestly successful in reaching universal outcomes, specific focus on an ideational objective such as developing a shared vocabulary might yield more promising results. *See* Miller et al., *supra* note 13.

[323] *See* Hathaway, *supra* note 42, at 2024.

[324] This phenomenon is observed also with respect to the ability of the major regional human rights systems to articulate differing conceptions of the scope and justiciability of socioeconomic rights. *See supra* note 160 and accompanying text.

[325] *See* WAN, *supra* note 102, at 7 (arguing that "a regional reorientation presents the most effective means with which the international community can bolster the NPT and existing global nuclear order"). The advantages of the regional level of nonproliferation law are already seen with NWFZs. *See supra* section I.B.3.

of the political environment the agreement is negotiated in."[326] Improving the "situational awareness" of nonproliferation laws, therefore, may require leveraging new modes of enforcement.[327] This contextual approach to nonproliferation lawmaking can help to promote improved legal outcomes and to enable future laws to serve as platforms for discourse.

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"Theory, it is important to understand, does not emerge merely from the sum of past events. It takes shape also from inferences about present and emerging trends that may be only partially known yet plausibly inferred by contemporary observers."[328] This Article seeks to develop a theory of systemic inefficiency that explains the nonproliferation regime's challenges today and moving forward. This exercise, however, is not intended to be purely theoretical in nature, and the hope is that nonproliferation policymakers and lawyers pursue initiatives that address the effects of inefficiency. Absent concerted efforts to bridge the original miscommunication, the health of the nonproliferation regime is certain to deteriorate with time. This certainty signals the importance of developing a coherent and unified approach to the inefficiencies of nuclear nonproliferation law.

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[326] *See* O'Brien & Richard Gowan, *supra* note 181, at 5.
[327] *See, e.g.*, Sievert, *supra* note 60, at 122-23 (reimagining nonproliferation laws, among them a "new" NPT, as self-executing in nature so that enforcement of the regime can shift to domestic-level judicial forums).
[328] LUCAS KELLO, THE VIRTUAL WEAPON AND INTERNATIONAL ORDER 41 (2017).

APPENDIX A: NONPROLIFERATION-RELATED SECURITY COUNCIL RESOLUTIONS[329]

Resolution	Date	Voting Record	Subject of Resolution
18	13 February 1947	10–0–1 (abstention: USSR)	Armaments: regulation and reduction
20	10 March 1947	11–0–0	Atomic energy: international control
52	22 June 1948	9–0–2 (abstentions: Ukraine, USSR)	Atomic Energy: international control
74	16 September 1949	9–0–2 (abstentions: Ukraine, USSR)	Atomic energy: international control
135	27 May 1960	9–0–2 (abstentions: Poland, USSR)	Question of relations between Great Powers
255	19 June 1968	10–0–5 (abstentions: Algeria, Brazil, France, India, Pakistan)	Question relating to measures to safeguard non-nuclear-weapon States parties to the Treaty on the Non-Proliferation of Nuclear Weapons
418	4 November 1977	Adopted 15–0–0	South Africa
487	19 June 1981	Adopted 15–0–0	Iraq-Israel
569	26 July 1985	13–0–2 (abstentions: UK, US)	South Africa
591	28 November 1986	Adopted "by consensus"	South Africa

[329] With respect to whether a United Nations Security Council resolution is "nonproliferation-related," this Appendix collates all resolutions containing the terms "nuclear" or "atomic." *See UNSCR*, http://unscr.com/.

687	3 April 1991	12–1–2 (against: Cuba; abstentions: Ecuador, Yemen)	Iraq-Kuwait (3 Apr)
699	17 June 1991	15–0–0	Iraq (17 June)
706	15 August 1991	13–1–1 (against: Cuba; abstention: Yemen)	Iraq-Kuwait (15 Aug)
707	15 August 1991	15–0–0	Iraq (15 Aug)
715	11 October 1991	15–0–0	Iraq (11 Oct)
END OF COLD WAR			
825	11 May 1993	13–0–2 (abstentions: China, Pakistan)	Democratic People's Republic of Korea (11 May)
984	11 April 1995	15–0–0	Security assurances against the use of nuclear weapons to non-nuclear-weapon States
1051	27 March 1996	15–0–0	The situation between Iraq and Kuwait
1154	2 March 1998	15–0–0	The situation between Iraq and Kuwait
1170	28 May 1998	15–0–0	The situation in Africa
1172	6 June 1998	15–0–0	International peace and security (condemns nuclear tests carried out by India and Pakistan)
1194	9 September 1998	15–0–0	The situation between Iraq and Kuwait
1205	5 November 1998	15–0–0	The situation between Iraq and Kuwait
1284	17 December 1999	11–0–4 (abstentions: China, France, Malaysia, Russia)	The situation between Iraq and Kuwait
1330	5 December 2000	15–0–0	The situation between Iraq and Kuwait
1373	28 September 2001	15–0–0	Threats to international peace and security caused by terrorist acts

1382	29 November 2001	15–0–0	The situation between Iraq and Kuwait
1409	14 May 2002	15–0–0	The situation between Iraq and Kuwait
1441	8 November 2002	15–0–0	The situation between Iraq and Kuwait
1454	30 December 2002	13–0–2 (abstentions: Russia, Syria)	The situation between Iraq and Kuwait
1456	20 January 2003	15–0–0	High-level meeting of the Security Council: combating terrorism
1483	22 May 2003	14–0–0 (Syria did not participate)	The situation between Iraq and Kuwait
1540	28 April 2004	15–0–0	Non-proliferation of weapons of mass destruction
1546	8 June 2004	15–0–0	The situation between Iraq and Kuwait
1566	8 October 2004	15–0–0	Threats to international peace and security caused by terrorist acts
1617	29 July 2005	15–0–0	Threats to international peace and security caused by terrorist acts
1624	14 September 2005	15–0–0	Threats to international peace and security (Security Council Summit 2005)
1625	14 September 2005	15–0–0	Threats to international peace and security (Security Council Summit 2005)
1673	27 April 2006	15–0–0	Non-proliferation of weapons of mass destruction
1695	15 July 2006	15–0–0	Letter dated 4 July 2006 from the Permanent Representative of Japan to the United Nations addressed to the President of the Security Council (S/2006/481)

1696	31 July 2006	14–1–0 (against: Qatar)	Non-proliferation (demands Iran end uranium enrichment activities)
1718	14 October 2006	15–0–0	Non-proliferation/Democratic People's Republic of Korea
1737	23 December 2006	15–0–0	Non-proliferation
1747	24 March 2007	15–0–0	Non-proliferation
1762	29 June 2007	14–0–1 (Russia abstains)	The situation concerning Iraq
1790	18 December 2007	15–0–0	The situation concerning Iraq
1803	3 March 2008	14–0–1 (Indonesia abstains)	Non-proliferation
1810	25 April 2008	15–0–0	Non-proliferation of weapons of mass destruction
1835	27 September 2008	15–0–0	Non-proliferation
1874	12 June 2009	15–0–0	Non-proliferation/Democratic People's Republic of Korea
1887	24 September 2009	15–0–0 by heads of state or government and Permanent Representative (Libya)	Maintenance of international peace and security: Nuclear non-proliferation and nuclear disarmament
1928	7 June 2010	15–0–0	Non-proliferation/Democratic People's Republic of Korea
1929	9 June 2010	12–2–1 (against: Brazil, Turkey; abstention: Lebanon)	Non-proliferation

1957	15 December 2010	15–0–0	The situation concerning Iraq
1977	20 April 2011	15–0–0	Non-proliferation of weapons of mass destruction
1985	10 June 2011	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2040	12 March 2012	15–0–0	The situation in Libya
2050	12 June 2012	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2087	22 January 2013	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2094	7 March 2013	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2095	14 March 2013	15–0–0	The situation in Libya
2118	27 September 2013	15–0–0	Middle East (on chemical weapons in Syria)
2141	5 March 2014	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2207	4 March 2015	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2231	20 July 2015	15–0–0	Non-proliferation
2270	2 March 2016	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2276	24 March 2016	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2298	22 July 2016	15–0–0	The situation in Libya
2310	23 September 2016	14–0–1 (abstention: Egypt)	Maintenance of international peace and security

2321	30 November 2016	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2325	15 December 2016	15–0–0	Non-proliferation of weapons of mass destruction
2345	23 March 2017	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2356	2 June 2017	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2371	5 August 2017	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2375	11 September 2017	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2397	21 December 2017	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2407	21 March 2018	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2457	27 February 2019	15–0–0	Cooperation between the United Nations and regional and sub-regional organizations in maintaining international peace and security
2464	10 April 2019	15–0–0	Non-proliferation/Democratic People's Republic of Korea
2515	30 March 2020	15–0–0	Non-proliferation/Democratic People's Republic of Korea. Letter from the President of the Council on the voting (S/2020/246, added)
2569	26 March 2021	15–0–0	Non-proliferation/Democratic People's Republic of Korea