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## War & IP

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## War and IP

Peter K. Yu\*

*This Article examines wartime and postwar protection of intellectual property rights, with a focus on the Russo-Ukrainian War that broke out in February 2022. It begins by showing that armed conflicts are not new to the international intellectual property regime and that this regime already contains robust structural features and carefully drafted safeguards, limitations, and flexibilities to protect intellectual property rights holders during wartime. The Article then explores the international intellectual property obligations of countries that are parties to an armed conflict as well as those that are not directly involved but have imposed sanctions on belligerent states. This Article further outlines the different proactive measures that policymakers can introduce to help protect intellectual property rights holders during and in relation to an armed conflict. This Article concludes by probing the deeper theoretical questions generated by wartime and postwar experiences in relation to innovation theory, intellectual property law, and international law.*

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\* Copyright © 2023 Peter K. Yu. Regents Professor of Law and Communication and Director, Center for Law and Intellectual Property, Texas A&M University. This Article benefits from insights gleaned from the “Facilitating Access to Affordable Medicines During Wartime in Ukraine” Roundtable jointly organized by the Max Planck Institute for Intellectual Property and Competition Law, the National Academy of Law Sciences of Ukraine, Taras Shevchenko National University of Kyiv, and 100% Life. An earlier version of this Article was delivered as keynote remarks at the 14th Intellectual Property Conference in Hong Kong organized by the United States-China Intellectual Property Institute and the Faculty of Law at the Chinese University of Hong Kong. Other versions were presented at the 12th Annual Conference on Innovation and Communications Law at Danube University Krems in Austria, the 6th Annual Texas A&M Intellectual Property Scholars Roundtable at Texas A&M University School of Law, the Works-in-Progress Intellectual Property (WIPIP) Colloquium 2023 at Suffolk University Law School, and International Law Weekend 2023 at Fordham University School of Law. The Author is grateful to Clemens Appl, Albert Wai-Kit Chan, Philipp Homar, Daria Kim, and Lee Jyh-An for their hospitality. He would also like to thank Clemens Appl, Daniel Benoliel, Albert Wai-Kit Chan, Charles Duan, Barbara Lauriat, Mark Lemley, Doris Long, Zvi Rosen, Lucy Xiaolu Wang, and the participants of these events for their valuable comments and suggestions.

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## INTRODUCTION

On February 24, 2022, war broke out between Russia and Ukraine, sparking concerns among government leaders, intergovernmental bodies, and the public at large.<sup>1</sup> Although intellectual property issues are usually quite far away from war-related discussions—with the exception of ownership and licensing of military technology, perhaps<sup>2</sup>—this war has caught the rare attention of intellectual property policymakers, rights holders, and attorneys.<sup>3</sup>

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1. Anton Troianovski & Neil MacFarquhar, *Russia Attacks as Putin Warns World; Biden Vows to Hold Him Accountable*, N.Y. TIMES, Feb. 24, 2022, at A1. This conflict traces back to Russia's annexation of Crimea in 2014. *Id.*

2. See *infra* text accompanying notes 272–273.

3. For discussions of Russia's changing intellectual property policy toward “unfriendly” nations, see generally Raj S. Dave & Hou Shaomeng, *What It Means That Russian Businesses Can Now Legally Steal Intellectual Property from “Unfriendly Countries,”* IP WATCHDOG (Mar. 16, 2022), <https://ipwatchdog.com/2022/03/16/russian-businesses-can->

A month after the war's outbreak, the Russian government issued Decree 299, which reduced to zero the royalty rate for national security-based compulsory licenses to intellectual property rights held by individuals or entities originating from the United States or other "unfriendly" nations.<sup>4</sup> Meanwhile, the United States and other members of the international community imposed sanctions on Russia,<sup>5</sup> raising questions about whether those sanctions would prevent U.S. companies and individuals from engaging with Russian intellectual property agencies, such as those involved in patent and trademark filings and renewals.<sup>6</sup> As if these complications were not challenging enough, many multinational corporations withdrew from the Russian market.<sup>7</sup> Such withdrawals necessitated the development of new strategies to protect intellectual property rights holders going forward.<sup>8</sup>

In its first year, the Russo-Ukrainian War garnered considerable attention, ranging from coverage in mainstream media to the Ukrainian President's high-profile call for support during the 2022 Grammy Awards ceremony.<sup>9</sup> Nevertheless, armed conflicts are

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now-legally-steal-intellectual-property-unfriendly-countries; Kenneth J. Davis, John L. Hemmer, Anastasia Dergacheva & Alyssa R.M. Pugh, *Russian Decree Undermines Value of Certain Patents; USPTO Cuts All Ties with Russian Patent Office*, MORGAN LEWIS (Apr. 7, 2022), <https://www.morganlewis.com/pubs/2022/04/russian-decree-undermines-value-of-certain-patents-uspto-cuts-all-ties-with-russian-patent-office>; James A. Shimota & Adrian Gonzalez Cerrillo, *The Kremlin's Intellectual Property Cold War: Legalizing Patent Theft with Decree 299*, NAT'L L. REV. (Mar. 28, 2022), <https://www.natlawreview.com/article/kremlins-intellectual-property-cold-war-legalizing-patent-theft-decree-299>.

4. Hannah Knowles & Zina Pozen, *Russia Says Its Businesses Can Steal Patents from Anyone in "Unfriendly" Countries*, WASH. POST (Mar. 9, 2022), <https://www.washingtonpost.com/business/2022/03/09/russia-allows-patent-theft>.

5. *Ukraine/Russia-Related Sanctions*, U.S. DEP'T OF THE TREASURY, <https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions> (last visited Oct. 21, 2023).

6. See *infra* text accompanying notes 211–214.

7. See Alex Kalman, Antonio De Luca & Maia Coleman, *No Longer in Russia*, N.Y. TIMES, Mar. 28, 2022, at B4 (noting the withdrawal from Russia of McDonald's, Coca-Cola, Pepsi, British American Tobacco, Levi Strauss, 3M, Uniqlo, Dior, Ferrari, Pizza Hut, IKEA, DHL, Apple, BP, and Ford).

8. See Irene Calboli & Vera Sevastianova, *Fashion in the Times of War: The Recent Exodus of Luxury Brands from Russia and What It Means for Trademark Law*, 13 HARV. J. SPORTS & ENT. L. 187 (2022) (discussing the trademark implications for the luxury brands' withdrawal from the Russian market).

9. Morgan Enos, *Rewatch Ukrainian President Volodymyr Zelensky's Impassioned Speech at the 2022 GRAMMYS: A Call for Peace During War, Truth During Lies & Sound Over Silence*, GRAMMYS (Apr. 5, 2022), <https://www.grammy.com/news/ukraine-president-volodymyr-zelensky-speech-2022-grammys>.

more common than we are ready to admit. Despite the rather peaceful geopolitical environment since the Second World War, many countries have struggled with these conflicts both inside and at the border.<sup>10</sup> From the wars in Afghanistan and Iraq to military operations against Al-Qaeda and the Islamic State of Iraq and Syria (ISIS), the United States has also been involved in many widely reported armed conflicts.<sup>11</sup>

Moreover, the Russo-Ukrainian War has inspired commentators and mainstream media to explore the source of heightened international tensions and the possibility for the United States to enter into armed conflicts in other parts of the world.<sup>12</sup> Unsurprisingly, most of these predictions involve China, Iran, North Korea, Russia, and transnational terrorist groups.<sup>13</sup> With intense economic and technological rivalry and escalated bilateral tensions between China and the United States, pundits and political scientists further debate the imminence and inevitability of a war between these two countries.<sup>14</sup> Quite revealing were the tensions posed by the shutdown of a Chinese balloon in U.S. airspace in February 2023 and Secretary of State Antony Blinken's subsequent postponement of his trip to China.<sup>15</sup>

Notwithstanding the wide array of armed conflicts that have taken place throughout the world in the past few decades, the questions raised by the Russo-Ukrainian War have sparked a rare and interesting debate on intellectual property law and policy. As a BRICS country,<sup>16</sup> Russia has provided many U.S. intellectual

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10. See H.A. Hellyer, *Coverage of Ukraine Has Exposed Long-Standing Racist Biases in Western Media*, WASH. POST (Feb. 28, 2022), <https://www.washingtonpost.com/opinions/2022/02/28/ukraine-coverage-media-racist-biases> (noting the conflicts around the world despite the media bias toward the Russo-Ukrainian War).

11. Mark Landler, *A War Rages on in the Shadows*, N.Y. TIMES, Sept. 11, 2021, at A1.

12. See, e.g., *Conflicts to Watch in 2023*, COUNCIL ON FOREIGN RELS. (Jan. 4, 2023), <https://www.cfr.org/report/conflicts-watch-2023>.

13. *Id.*

14. See generally GRAHAM ALLISON, *DESTINED FOR WAR: CAN AMERICA AND CHINA ESCAPE THUCYDIDES'S TRAP?* (2018) (drawing on history and current events to explore whether China and the United States are heading toward a war).

15. Edward Wong, Helene Cooper & Chris Buckley, *Blinken Calls Off Meetings in China Over Spy Balloon*, N.Y. TIMES, Feb. 4, 2023, at A1.

16. "BRICS" refers to Brazil, Russia, India, China, and South Africa. See Peter K. Yu, *Building Intellectual Property Infrastructure Along China's Belt and Road*, 14 U. PA. ASIAN L. REV. 275, 275 n.1 (2019) (providing background sources on the BRICS countries).

property rights holders with an important emerging market.<sup>17</sup> Only a few years ago, Russia began actively participating in BRICS-focused discussions in the areas of international trade, economic development, and intellectual property.<sup>18</sup> Meanwhile, the strong technological capabilities in Ukraine have allowed its companies and nationals to provide offshore information technology support to many U.S. and multinational corporations.<sup>19</sup>

More importantly, the Russo-Ukrainian War has raised important questions that have been virtually unexplored in intellectual property literature: How do armed conflicts affect the international intellectual property regime? What are the obligations of countries engaging in these conflicts as well as those that are not directly involved but have imposed sanctions on belligerent states? Can policymakers introduce proactive measures to help alleviate the challenges posed to intellectual property rights holders? If so, should those measures be implemented at the domestic level, international level, or both? As these armed conflicts escalate or subside, what insights can wartime and postwar experiences provide into the development of intellectual property and international laws?

To fill this major gap in intellectual property literature, the present Article examines wartime and postwar protection of intellectual property rights. Part I shows that armed conflicts are not new to the international intellectual property regime and that this regime already contains robust structural features and carefully drafted safeguards, limitations, and flexibilities to protect intellectual property rights holders during wartime. Part II explores the international intellectual property obligations of countries that are parties to an armed conflict as well as those that are not directly

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17. See Peter K. Yu, *Access to Medicines, BRICS Alliances, and Collective Action*, 34 AM. J.L. & MED. 345, 354 (2008) (discussing Russia in the BRICS context).

18. See Peter K. Yu, *Intellectual Property Negotiations, the BRICS Factor and the Changing North-South Debate*, in *THE BRICS-LAWYERS' GUIDE TO GLOBAL COOPERATION* 148, 168–72 (Rostam J. Neuwirth, Alexandr Svetlicinii & Denis De Castro Halis eds., 2017) (discussing the changes that the BRICS countries and other large developing countries have brought to the international norm-setting environment in both the trade and intellectual property arenas).

19. See Stephanie Overby, *Ukraine Crisis Puts Global IT Outsourcing on Edge*, CIO (Mar. 21, 2022), <https://www.cio.com/article/306959/ukraine-crisis-puts-global-it-outsourcing-on-edge.html> (noting that the Ukrainian information technology outsourcing industry “exports \$6.8 billion of [information technology] services annually, approximately 4% of GDP”).

involved but have imposed sanctions on belligerent states. To cover developments in areas relating to international trade, investment, and intellectual property laws, this Part focuses on the Agreement on Trade-Related Aspects of Intellectual Property Rights<sup>20</sup> (TRIPS Agreement) of the World Trade Organization (WTO), bilateral investment agreements, and regional or plurilateral trade agreements that include intellectual property and investment chapters. Part III outlines the different proactive measures that policymakers can introduce to help protect intellectual property rights holders during and in relation to an armed conflict. This Part specifically explores the development of domestic measures, international mechanisms, and academic and policy research. Part IV concludes by probing the deeper theoretical questions generated by wartime and postwar experiences in relation to innovation theory, intellectual property law, and international law.

#### I. WAR AND INTELLECTUAL PROPERTY TREATIES

Despite its breadth and depth, intellectual property literature is filled with scant analysis of wartime and postwar protection of intellectual property rights. The lack of research in this area is unsurprising. To begin with, intellectual property rights are highly specialized legal tools that are often used in well-functioning markets.<sup>21</sup> In war-torn and postwar markets, however, intellectual property protection is of a lower priority. With many difficult problems during and after the war, policymakers and commentators understandably focus their attention on more pressing policy issues.

In addition, before the Second World War, there was limited scholarship on international intellectual property law, most of which covered the establishment or revision of international

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20. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299 [hereinafter TRIPS Agreement].

21. See Paul J. Heald, *Mowing the Playing Field: Addressing Information Distortion and Asymmetry in the TRIPS Game*, 88 MINN. L. REV. 249, 258–60 (2003) (discussing the different intellectual property concerns relating to the marketing of a finished product and the location of manufacturing and research facilities).

intellectual property agreements.<sup>22</sup> In fact, much research in this area did not emerge<sup>23</sup> until shortly after the launch of the TRIPS negotiations in the mid-1980s.<sup>24</sup> In the ensuing decades, the world has seen only short-term or geographically constrained armed conflicts.<sup>25</sup> The lack of major global armed conflicts and the existence of a more peaceful geopolitical environment may have impeded research on wartime and postwar protection of intellectual property rights.

#### A. International Intellectual Property Agreements

Although wartime and postwar protections have not received much coverage in intellectual property literature<sup>26</sup>—and only occasional coverage since the 1950s—the international intellectual property system is very familiar with the disruption caused by armed conflicts or other political instabilities. In fact, the

22. See generally Peter K. Yu, *Teaching International Intellectual Property Law*, 52 ST. LOUIS U. L.J. 923, 926–40 (2008) (discussing the evolution of teaching of international intellectual property law). Among the noted exceptions before the Second World War are STEPHEN P. LADAS, *THE INTERNATIONAL PROTECTION OF INDUSTRIAL PROPERTY* (1930); STEPHEN P. LADAS, *THE INTERNATIONAL PROTECTION OF LITERARY AND ARTISTIC PROPERTY* (1938) [hereinafter LADAS, *LITERARY AND ARTISTIC PROPERTY*].

23. Cf. FREDERICK M. ABBOTT, THOMAS COTTIER & FRANCIS GURRY, *INTERNATIONAL INTELLECTUAL PROPERTY IN AN INTEGRATED WORLD ECONOMY* 4 (4th ed. 2019) (“The TRIPS Agreement represented a sea change in the international regulation of IPRs [intellectual property rights].”); Charles R. McManis, *Teaching Current Trends and Future Developments in Intellectual Property*, 52 ST. LOUIS U. L.J. 855, 856 (2008) (“[T]he field of international intellectual property law underwent a tectonic shift with the promulgation of the [TRIPS Agreement] . . .”).

24. See GATT, *Ministerial Declaration on the Uruguay Round of Multilateral Trade Negotiations* pt. I.D, Sept. 20, 1986, 25 I.L.M. 1623, 1626 (1986) (outlining the scope of negotiations in the area of “trade-related aspects of intellectual property rights, including trade in counterfeit goods”).

25. See *supra* text accompanying notes 10–11.

26. Most research in this area was published before the end of the Second World War. See, e.g., Karl Fenning, *Patents and National Defense*, 22 J. PAT. OFF. SOC’Y 869 (1940); Norman N. Holland, *Patent Law in War and Peace*, 24 J. PAT. OFF. SOC’Y 739 (1942); W.B. Kerkam, *The Patent System in War and Peace*, 24 J. PAT. OFF. SOC’Y 235 (1942); Wallace McClure, *Copyright in War and Peace*, 36 AM. J. INT’L L. 383 (1942); Lothar Michaelis & Wilbur A. Schaich, *Restoration of Patent Rights Affected by War, the Nolan Act*, 24 J. PAT. OFF. SOC’Y 376 (1942); Helen Stephenson, *Copyright in a World at War*, 32 KY. L.J. 315 (1944); A.M. Zalkind, *Patent Rights in War Department Purchasing*, 23 J. PAT. OFF. SOC’Y 713 (1941).

international intellectual property regime was instituted in part to address issues brought about by such disruption.<sup>27</sup>

Before the establishment of the Paris Convention for the Protection of Industrial Property<sup>28</sup> (Paris Convention) and the Berne Convention for the Protection of Literary and Artistic Works<sup>29</sup> (Berne Convention) in the late nineteenth century, countries relied heavily on the establishment of bilateral commercial treaties to maintain international intellectual property relations and to provide local authors and inventors with cross-border intellectual property protection.<sup>30</sup> While these treaties offered protections in different forms and of varying scope and duration,<sup>31</sup> a key drawback of the linkage between bilateral treaties and cross-border protections is that wars, revolutions, civil strife, and other political instabilities could disrupt such protections.<sup>32</sup> Should disruption occur, bilateral intellectual property relations often would not be restored until the end of the conflict or after a change in government.

The establishment of the Paris and Berne Conventions minimized this type of disruption. By creating membership unions where countries can join or withdraw without affecting other members,<sup>33</sup> the Conventions effectively contain or manage the

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27. As Robert Keohane declares:

In the absence of authoritative global institutions, . . . conflicts of interest [among states] produce uncertainty and risk: possible future evils are often even more terrifying than present ones. All too obvious with respect to matters of war and peace, this is also characteristic of the international economic environment.

Robert O. Keohane, *The Demand for International Regimes*, 36 INT'L ORG. 325, 332 (1982); see also Peter K. Yu, *Toward a Nonzero-sum Approach to Resolving Global Intellectual Property Disputes: What We Can Learn from Mediators, Business Strategists, and International Relations Theorists*, 70 U. CIN. L. REV. 569, 606-07 (2002) [hereinafter Yu, *Nonzero-sum Approach*] (“[I]nternational regimes reduce uncertainty and risk in the international system.”).

28. Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 828 U.N.T.S. 305 (revised at Stockholm July 14, 1967) [hereinafter Paris Convention].

29. Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, 828 U.N.T.S. 221 (revised at Paris July 24, 1971) [hereinafter Berne Convention].

30. See Peter K. Yu, *Currents and Crosscurrents in the International Intellectual Property Regime*, 38 LOY. L.A. L. REV. 323, 333-34 (2004) [hereinafter Yu, *Currents and Crosscurrents*] (discussing the use of bilateral treaties to protect authors and their creative efforts).

31. See *id.* at 334 (noting the lack of uniformity in protection outside of home countries despite the existence of bilateral treaties).

32. See *id.* at 335; see also LADAS, LITERARY AND ARTISTIC PROPERTY, *supra* note 22, at 66-67; Sam Ricketson, *The Birth of the Berne Union*, 11 COLUM.-VLA J.L. & ARTS 9, 15 (1986).

33. See Berne Convention, *supra* note 29, art. 1; Paris Convention, *supra* note 28, art. 1(1); see also Yu, *Currents and Crosscurrents*, *supra* note 30, at 339, 352 (noting that both unions “ha[ve] an independent existence regardless of . . . membership”).

disruption posed by armed conflicts or other political instabilities to their member states. These instruments also prevent those conflicts from spilling over into international norm-setting, thereby preserving the previously established substantive and procedural international intellectual property standards.

To a large extent, the creation of membership unions through the Paris and Berne Conventions explains why the international intellectual property regime continued to operate during both the First and Second World Wars.<sup>34</sup> If any disruption occurred during wartime, such disruption was caused by changing market and trading conditions rather than wartime suspension of the two Conventions. After the First and Second World Wars, there was also no need for these Conventions to restart their operations.<sup>35</sup> Despite these global armed conflicts, which lasted during 1914–18 and 1939–45, the Paris Convention was revised in The Hague in 1925, in London in 1934, and in Lisbon in 1958,<sup>36</sup> while the Berne Convention was revised in Rome in 1928 and in Brussels in 1948.<sup>37</sup> These revisions were not about either war but about new issues and technologies that had emerged since the last revision of both Conventions.

Apart from establishing membership unions, the international intellectual property regime incorporates other robust structural features and carefully drafted safeguards, limitations, and

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34. See Yu, *Currents and Crosscurrents*, *supra* note 30, at 352 (“[The Paris] Union was so effective that none of the contracting states denounced the [Paris] Convention expressly or impliedly during the First and Second World Wars.”); Peter K. Yu, *Intellectual Property Paradoxes in Pandemic Times*, 71 GRUR INT’L 293, 293 (2022) [hereinafter Yu, *Intellectual Property Paradoxes*] (“Since their inception in the 1880s, the [Paris and Berne] conventions have survived two world wars and many other major international and regional conflicts.”).

35. It is worth noting that the Treaty of Versailles signed between Germany and the Allied Powers after the First World War did include provisions on the protection of industrial property. Treaty of Versailles arts. 306–311, June 28, 1919, *reprinted in* 2 TREATIES AND OTHER INTERNATIONAL AGREEMENTS OF THE UNITED STATES OF AMERICA 1776–1949, at 43, 201–05 (Charles I. Bevans ed., 1969).

36. Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 74 L.N.T.S. 289 (revised at The Hague Nov. 6, 1925); Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 192 L.N.T.S. 17 (revised at London June 2, 1934); Paris Convention for the Protection of Industrial Property, Mar. 20, 1883, 828 U.N.T.S. 107 (revised at Lisbon Oct. 31, 1958).

37. Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, 123 L.N.T.S. 233 (revised at Rome June 2, 1928); Berne Convention for the Protection of Literary and Artistic Works, Sept. 9, 1886, 331 U.N.T.S. 217, 231 (revised at Brussels June 26, 1948).

flexibilities to make the regime less vulnerable during armed conflicts and to prevent cross-border intellectual property disputes from escalating into such conflicts. Three additional regime features deserve special mention.

First, instead of requiring member states to adopt uniform rules throughout the world, delegates involved in drafting the Paris and Berne Conventions recognized the need to agree to disagree.<sup>38</sup> As a result, they adopted the principle of national treatment<sup>39</sup> and focused their efforts on developing a limited set of international minimum standards.<sup>40</sup> More elaborate substantive and procedural intellectual property standards did not emerge until after the establishment of the Conventions.<sup>41</sup> This “agree to disagree” mentality continues even today. Examples in the TRIPS context are the rules for international exhaustion of intellectual property rights,<sup>42</sup> the exclusion of disputes involving moral rights from the

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38. See Yu, *Currents and Crosscurrents*, *supra* note 30, at 350 (discussing the strong disagreement between countries participating in the Congress negotiating the Paris Convention over how and what type of universal rules the international community should adopt).

39. See Berne Convention, *supra* note 29, art. 5(1) (providing for national treatment); Paris Convention, *supra* note 28, art. 2(1) (same).

40. See Graeme B. Dinwoodie, *The International Intellectual Property System: Treaties, Norms, National Courts, and Private Ordering*, in INTELLECTUAL PROPERTY, TRADE AND DEVELOPMENT: STRATEGIES TO OPTIMIZE ECONOMIC DEVELOPMENT IN A TRIPS-PLUS ERA 61, 66–67 (Daniel J. Gervais ed., 1st ed. 2007) (“[N]ational treatment plus substantive minima . . . remains the dominant approach in current intellectual property treaties.”); Yu, *Currents and Crosscurrents*, *supra* note 30, at 349 (noting that countries participating in the drafting of the Paris Convention “could not reach a consensus on . . . questions . . . such as ‘previous examination of the invention, conditions of patentability, [and] effects of registration of trademarks’” and eventually “settle[d] on some common ground of minimal unification”).

41. See Yu, *Currents and Crosscurrents*, *supra* note 30, at 339 (noting that “the [Berne] Convention provided merely minimum protection for translation and public performance rights” when it was first adopted); Peter K. Yu, *Marshalling Copyright Knowledge to Understand Four Decades of Berne*, 12 IP THEORY, no. 1, 2022, at 59, 69–70 [hereinafter Yu, *Marshalling Copyright Knowledge*] (discussing the expansion of protections provided under the Berne Convention to keep pace with technological development).

42. See TRIPS Agreement, *supra* note 20, art. 6 (“For the purposes of dispute settlement under this Agreement, subject to the provisions of Articles 3 and 4 nothing in this Agreement shall be used to address the issue of the exhaustion of intellectual property rights.”). See generally Vincent Chiappetta, *The Desirability of Agreeing to Disagree: The WTO, TRIPS, International IPR Exhaustion and a Few Other Things*, 21 MICH. J. INT’L L. 333 (2000) (discussing the disagreement over the exhaustion issue during the TRIPS negotiations).

WTO dispute settlement process,<sup>43</sup> the provision of tests for evaluating whether limitations and exceptions in the law of a member state comply with the TRIPS Agreement,<sup>44</sup> and the emphasis on international minimum standards at both the substantive and procedural levels.<sup>45</sup>

Second, the Paris and Berne Conventions include safeguards, limitations, and flexibilities that respect the need for national autonomy in sensitive areas. For instance, Article 17 of the Berne Convention recognizes sovereign police power and allows countries “to permit, to control, or to prohibit, by legislation or regulation, the circulation, presentation, or exhibition of any work or production in regard to which the competent authority may find it necessary to exercise that right.”<sup>46</sup> Article 5A(2) of the Paris Convention also permits countries “to take legislative measures providing for the grant of compulsory licenses to prevent the abuses which might result from the exercise of the exclusive rights conferred by the patent, for example, failure to work.”<sup>47</sup> The delegates’ readiness to respect national autonomy in these Conventions eventually paved the way for the adoption of national security exceptions in multilateral and regional intellectual property agreements. A case in point is Article 73 of the TRIPS Agreement,<sup>48</sup> which Part II will further discuss.<sup>49</sup> Similar exceptions can also be found in other international intellectual property

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43. See TRIPS Agreement, *supra* note 20, art. 9.1 (“Members shall not have rights or obligations under this Agreement in respect of the rights conferred under Article 6bis of that Convention or of the rights derived therefrom.”).

44. See *id.* arts. 13, 17, 26.2 (providing for the three-step test in the areas of copyright, patent, and industrial design); *id.* art. 17 (providing for a similar test in the trademark area).

45. See *id.* art. 1.1 (“Members may, but shall not be obliged to, implement in their law more extensive protection than is required by this Agreement, provided that such protection does not contravene the provisions of this Agreement.”).

46. Berne Convention, *supra* note 29, art. 17; see also Panel Report, *China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, ¶¶ 7.120–.139, WTO Doc. WT/DS362/R (adopted Jan. 26, 2009) [hereinafter *China – Intellectual Property Rights Panel Report*] (discussing the application of Article 17 of the Berne Convention to the use of thresholds for criminal procedures and penalties).

47. Paris Convention, *supra* note 28, art. 5A(2).

48. TRIPS Agreement, *supra* note 20, art. 73.

49. See discussion *infra* Part II.

agreements, such as the Trans-Pacific Partnership Agreement<sup>50</sup> and the Regional Comprehensive Economic Partnership Agreement.<sup>51</sup>

Third, to reduce tensions and conflicts, international intellectual property agreements facilitate the resolution of cross-border disputes. Article 28(1) of the Paris Convention and Article 33(1) of the Berne Convention provide an optional dispute resolution mechanism that involves the International Court of Justice.<sup>52</sup> Because “no multinational intellectual property dispute has ever been brought” under this mechanism,<sup>53</sup> countries had to rely on diplomacy and negotiations to resolve cross-border disputes<sup>54</sup> before the introduction of more elaborate dispute resolution arrangements in later international intellectual property agreements. The most widely cited example is Article 64 of the TRIPS Agreement, which requires the use of the WTO’s mandatory dispute settlement process to settle all disputes arising under the Agreement.<sup>55</sup> The WTO Dispute Settlement Understanding further delineates rules governing this process.<sup>56</sup> To date, the WTO process has been used to resolve cross-border intellectual property disputes over issues such as the unlicensed public performance of copyrighted music,<sup>57</sup> the regulatory review and stockpiling exceptions to patent rights,<sup>58</sup> the protection of geographical

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50. Trans-Pacific Partnership Agreement art. 29.2, Feb. 4, 2016, <https://ustr.gov/trade-agreements/free-trade-agreements/trans-pacific-partnership/tpp-full-text>.

51. Regional Comprehensive Economic Partnership Agreement art. 17.13, Nov. 15, 2020, <https://rcepsec.org/legal-text>.

52. Berne Convention, *supra* note 29, at art. 33(1); Paris Convention, *supra* note 28, at art. 28(1).

53. Peter K. Yu, *The Pathways of Multinational Intellectual Property Dispute Settlement*, in INTELLECTUAL PROPERTY AND INTERNATIONAL DISPUTE RESOLUTION 123, 127 (Christopher Heath & Anselm Kamperman Sanders eds., 2019) [hereinafter Yu, *Pathways*].

54. See Oscar Schachter, *International Law in Theory and Practice*, 178 RECUEIL DES COURS 9, 208 (1982) (“Litigation is uncertain, time consuming, troublesome. Political officials do not want to lose control of a case that they might resolve by negotiation or political pressures. Diplomats naturally prefer diplomacy; political leaders value persuasion, manoeuvre and flexibility.”).

55. TRIPS Agreement, *supra* note 20, art. 64.

56. Understanding on Rules and Procedures Governing the Settlement of Disputes, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401 [hereinafter Dispute Settlement Understanding].

57. Panel Report, *United States – Section 110(5) of the US Copyright Act*, WTO Doc. WT/DS160/R (adopted June 15, 2000).

58. Panel Report, *Canada – Patent Protection of Pharmaceutical Products*, WTO Doc. WT/DS114/R (adopted Mar. 17, 2000).

indications,<sup>59</sup> and trademark issues raised by laws requiring the plain packaging of tobacco products.<sup>60</sup>

When exploring international intellectual property reforms, policymakers and commentators have paid considerable attention to the need for both balance and coherence. The balance in the international intellectual property regime has been front and center in the North-South debate between developed and developing countries, including during the TRIPS negotiations.<sup>61</sup> At the turn of the millennium, coherence has also become a growing concern,<sup>62</sup> due in large part to the aggressive negotiation and proliferation of TRIPS-plus bilateral, regional, and plurilateral agreements.<sup>63</sup> Creating tensions and conflicts with existing multilateral standards, TRIPS-plus agreements threaten to upset the balance and coherence in the international intellectual property regime.<sup>64</sup>

What is often overlooked in scholarly and policy debates is the considerable resilience of the international intellectual property regime. Not only did the regime continue to operate during the First and Second World Wars and in the interwar period, but it has

59. Panel Report, *European Communities – Protection of Trademarks and Geographical Indications for Agricultural Products and Foodstuffs*, WTO Doc. WT/DS290/R (adopted Mar. 15, 2005).

60. Panel Report, *Australia – Certain Measures Concerning Trademarks, Geographical Indications and Other Plain Packaging Requirements Applicable to Tobacco Products and Packaging*, WTO Docs. WT/DS435/R, WT/DS441/R, WT/DS458/R, WT/DS467/R (adopted June 28, 2018).

61. See Peter K. Yu, *Caught in the Middle: WIPO and Emerging Economies*, in RESEARCH HANDBOOK ON THE WORLD INTELLECTUAL PROPERTY ORGANIZATION: THE FIRST 50 YEARS AND BEYOND 356, 359–61 (Sam Ricketson ed., 2020) (summarizing North-South debate on international intellectual property protection).

62. See ANDREW GOWERS, GOWERS REVIEW OF INTELLECTUAL PROPERTY 58–61 (2006) (discussing the need for coherence in intellectual property law and policy); Peter K. Yu, *International Enclosure, the Regime Complex, and Intellectual Property Schizophrenia*, 2007 MICH. ST. L. REV. 1, 18 [hereinafter Yu, *Regime Complex*] (“In recent years, commentators and policymakers have begun to focus on the coherence of intellectual property policies, in addition to the maintenance of balance and flexibility in those policies.”).

63. See Yu, *Currents and Crosscurrents*, *supra* note 30, at 392–400 (discussing the growing use of bilateral and regional trade agreements to push for higher intellectual property standards). See generally INTELLECTUAL PROPERTY AND FREE TRADE AGREEMENTS (Christopher Heath & Anselm Kamperman Sanders eds., 2007) (collecting essays that discuss free trade agreements in the intellectual property context).

64. See generally Eyal Benvenisti & George W. Downs, *The Empire’s New Clothes: Political Economy and the Fragmentation of International Law*, 60 STAN. L. REV. 595, 596–600 (2007) (discussing growing “proliferation of international regulatory institutions with overlapping jurisdictions and ambiguous boundaries”); Yu, *Regime Complex*, *supra* note 62, at 13–21 (discussing development of the “international intellectual property regime complex”).

also responded well to major global crises—the most recent being the COVID-19 pandemic.<sup>65</sup> As I observed in an earlier article, if past developments in the international intellectual property regime are any guide, the regime “will remain robust and resilient despite the vulnerability exposed by the pandemic.”<sup>66</sup>

Given the limited scholarship on the resilience of the international intellectual property regime,<sup>67</sup> intellectual property scholars should devote greater attention to questions in this area. Can such resilience be attributed to the regime’s robust structural features and carefully drafted safeguards, limitations, and flexibilities? Or did such resilience emerge out of intellectual property’s unique relationship with trade and business matters—matters that are usually apolitical (or significantly less political) and that can quickly resume normalcy after an armed conflict? To a large extent, a deeper exploration of factors relating to regime resilience will help us better appreciate the strengths and limitations of both intellectual property and international law. Such an exploration will also enable us to locate and prioritize areas for reform—whether prophylactic or remedial. Prophylactic reforms are particularly important and urgent if we anticipate that the world will soon face major disruption caused by armed conflicts or other political instabilities, as some commentators have suggested.<sup>68</sup>

### *B. International Investment Agreements*

Thus far, this Part has focused primarily on international intellectual property agreements. However, the past decade has also seen the growing use of international investment agreements

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65. See Yu, *Intellectual Property Paradoxes*, *supra* note 34, at 293–94 (discussing the resilience of the international intellectual property regime before and during the COVID-19 pandemic).

66. *Id.* at 293.

67. There are a few exceptions, however. See, e.g., GRAEME B. DINWOODIE & ROCHELLE C. DREYFUSS, A NEOFEDERALIST VISION OF TRIPS: THE RESILIENCE OF THE INTERNATIONAL INTELLECTUAL PROPERTY REGIME 144 (2012) (“[G]iving states substantial latitude to tailor their law to the circumstances of their creative sectors, to deal with local distributive concerns, and to further policy preferences orthogonal to the intellectual property system . . . [has made] TRIPS a more resilient instrument . . . .”); Peter Burger, *The Berne Convention: Its History and Its Key Role in the Future*, 3 J.L. & TECH. 1, 50–51 (1988) (discussing the resilience of the Berne Convention); Yu, *Intellectual Property Paradoxes*, *supra* note 34, at 293–94 (discussing the overlooked resilience of the international intellectual property regime).

68. See *supra* text accompanying notes 12–14.

by intellectual property rights holders to strengthen cross-border protection of intellectual property rights.<sup>69</sup> The investor-state dispute settlement (ISDS) mechanism provided in these agreements allows intellectual property investors to sue host states in international arbitral fora without the participation of their home governments.<sup>70</sup> Focusing on disputes between a foreign investor and the host government, this mechanism contrasts significantly with the state-to-state dispute resolution process provided by the WTO and explored in the previous section.<sup>71</sup>

In the early 2010s, Philip Morris pioneered the use of the ISDS mechanism in the intellectual property context. Specifically, it utilized bilateral investment agreements to challenge the tobacco control measures in Uruguay and Australia.<sup>72</sup> Eli Lilly quickly followed suit by utilizing the North American Free Trade Agreement<sup>73</sup> (NAFTA) to seek compensation for the Canadian courts' invalidation of its patents on the hyperactivity drug Strattera (atomoxetine) and the anti-psychotic drug Zyprexa (olanzapine).<sup>74</sup> A few years later, the Japanese Bridgestone Group mounted yet another ISDS complaint following the Supreme Court of Panama's decision to fine its subsidiaries for their wrongful opposition to a potentially infringing trademark.<sup>75</sup> Less than a year

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69. See generally Peter K. Yu, *The Investment-Related Aspects of Intellectual Property Rights*, 66 AM. U. L. REV. 829, 837-44 (2017) (discussing the growing trend of using investment law and fora to set international intellectual property norms).

70. See *id.* at 831 (“[The new norms developed through bilateral, regional, and plurilateral trade and investment agreements] will strengthen the ability of private investors, such as intellectual property rights holders, to sue foreign governments without the support of their home governments.”); see also Yu, *Pathways*, *supra* note 53, at 130 (discussing as a limitation to the WTO dispute settlement process that “intellectual property right holders are often at the mercy of the complaining governments” and that “they have no control over the strategies used in the WTO dispute settlement process”).

71. For comparisons between state-to-state and investor-state dispute settlement, see generally Peter K. Yu, *State-to-State and Investor-State Copyright Dispute Settlement*, in *LE DROIT D'AUTEUR EN ACTION: PERSPECTIVES INTERNATIONALES SUR LES RECOURS* 421 (Ysolde Gendreau ed., 2019); Yu, *Pathways*, *supra* note 53.

72. Philip Morris Asia Ltd. v. Commonwealth of Austl., UNCITRAL, PCA Case No. 2012-12, Award on Jurisdiction and Admissibility (Dec. 17, 2015); Philip Morris Brands Sarl v. Oriental Republic of Uru., ICSID Case No. ARB/10/7, Award (July 8, 2016).

73. North American Free Trade Agreement, Can.-Mex.-U.S., Dec. 17, 1992, 32 I.L.M. 289 (1993).

74. Eli Lilly & Co. v. Gov't of Can., ICSID Case No. UNCT/14/2, Final Award (Mar. 16, 2017).

75. Bridgestone Licensing Servs., Inc. v. Republic of Panama, ICSID Case No. ARB/16/34, Award (Aug. 14, 2020).

before the COVID-19 pandemic, the Einarssons and Geophysical Service Inc. invoked NAFTA again to seek compensation for the Canadian government's unauthorized disclosure of proprietary marine seismic data to third parties.<sup>76</sup>

The availability of ISDS not only speaks to the beneficial use of dispute resolution mechanisms to minimize tensions and conflicts in the international intellectual property regime, but it also recalls the earlier discussion about how international intellectual property agreements were established to help minimize disruption caused by armed conflicts or other political instabilities.<sup>77</sup> Until the establishment of international trade or investment agreements, gunboat diplomacy remained a dominant strategy used by powerful countries to protect their nationals and investments on foreign soil.<sup>78</sup>

A case in point is the First Opium War between China and Great Britain.<sup>79</sup> In the mid-nineteenth century, British merchants in Canton, China (now Guangzhou) suffered considerable economic losses following Governor Lin Zexu's order to confiscate and destroy opium.<sup>80</sup> To protect its merchants and to help restore trade, Great Britain sent warships to the area.<sup>81</sup> The subsequent engagement between the British and Chinese military forces became what historians have called "the Opium War" or "the First Opium War."<sup>82</sup> This war not only required China to cede Hong Kong to Great Britain and to pay \$21 million in reparations but also opened up China to foreign trade through the establishment of five historic treaty ports—namely, Guangzhou, Fuzhou, Ningbo, Shanghai, and Xiamen.<sup>83</sup> This forced opening of China to the West

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76. Einarsson v. Gov't of Can., Notice of Arbitration (Apr. 18, 2019), [https://www.italaw.com/sites/default/files/case-documents/italaw11478\\_0.pdf](https://www.italaw.com/sites/default/files/case-documents/italaw11478_0.pdf).

77. See *supra* text accompanying notes 32–37 and 52–60.

78. See SCOTT MILLER & GREGORY N. HICKS, INVESTOR-STATE DISPUTE SETTLEMENT: A REALITY CHECK 17–19 (2015), [https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy\\_files/files/publication/150116\\_Miller\\_InvestorStateDispute\\_Web.pdf](https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/150116_Miller_InvestorStateDispute_Web.pdf) (discussing the change of investment policy from gunboat diplomacy to bilateral investment treaties).

79. See generally IMMANUEL C.Y. HSÜ, THE RISE OF MODERN CHINA 168–95 (6th ed. 2000) (discussing the First Opium War and its background and aftermath).

80. *Id.* at 182.

81. *Id.* at 183–84.

82. *Id.* at 184–90.

83. See Treaty of Nanking arts. 2, 3, 5, Aug. 29, 1842, China-Gr. Brit., reprinted in STAT. DEP'T OF THE INSPECTORATE GEN. OF CUSTOMS, TREATIES, CONVENTIONS, ETC., BETWEEN

helped create the geopolitical and international trading environments we have today.

If the host state—whether China or elsewhere—similarly destroyed the property of foreign investors today, the injured investors would be able to seek compensation in three ways. First, they could seek compensation through domestic litigation against the host state government,<sup>84</sup> notwithstanding concerns about the domestic courts' potential bias toward the local government<sup>85</sup> and the constraints that doctrines relating to sovereign immunity have imposed on litigation.<sup>86</sup> Second, the investors, with the help of their home governments, could rely on the state-to-state dispute settlement process, such as the mandatory process provided by the WTO.<sup>87</sup> Third, the investors could rely on the ISDS mechanism,<sup>88</sup> especially if their home governments were unwilling to bring state-to-state disputes on their behalf.<sup>89</sup> These three routes are not mutually exclusive, and intellectual property rights holders have used more than one route to address their cross-border disputes.<sup>90</sup>

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CHINA AND FOREIGN STATES: WITH A CHRONOLOGICAL LIST OF TREATIES AND OF REGULATIONS BASED ON TREATY PROVISIONS, 1689-1886, at 107 (1887).

84. See Yu, *Pathways*, *supra* note 53, at 124-28 (discussing domestic litigation involving multinational intellectual property investors in host states).

85. See *id.* at 125 (“[S]ome courts and judges may be beholden to powerful local interests and may therefore issue biased decisions.”).

86. See Andrea K. Bjorklund, *Private Rights and Public International Law: Why Competition Among International Economic Law Tribunals Is Not Working*, 59 HASTINGS L.J. 241, 254 (2007) (“Municipal courts in the home state of the investor will often be unavailable either for lack of jurisdiction over the host state, or because foreign sovereign immunity protects the host government.”); Charles N. Brower & Stephan W. Schill, *Is Arbitration a Threat or a Boon to the Legitimacy of International Investment Law?*, 9 CHI. J. INT’L L. 471, 479 (2009) (“Various legal obstacles—including state immunity and doctrines of judicial restraint such as the act-of-state doctrine—constitute significant limits to the subjection of host states to third-country jurisdiction.”).

87. See Yu, *Pathways*, *supra* note 53, at 128-32 (discussing state-to-state dispute settlement of multinational intellectual property disputes); see also *supra* text accompanying notes 52-56.

88. See Yu, *Pathways*, *supra* note 53, at 132-36 (discussing investor-state dispute settlement of multinational intellectual property disputes).

89. See *id.* at 131 (noting the United States’ refusal to challenge legislation in Australia and Uruguay on behalf of Philip Morris and in Canada on behalf of Eli Lilly).

90. As I have observed earlier in relation to the dispute between Philip Morris and Australia:

The tobacco giant initially challenged the regulation in local courts. After it had exhausted all local remedies following the negative High Court of Australia decision, it sought ISDS under a bilateral investment agreement between Australia

In sum, even though intellectual property literature rarely examines wartime and postwar protection of intellectual property rights, the international intellectual property regime is very familiar with the disruption caused by armed conflicts or other political instabilities. That regime, along with the development of international investment agreements, was created to help minimize such disruption. In addition, the international intellectual property regime contains robust structural features and carefully drafted safeguards, limitations, and flexibilities to ensure its continuous and effective operation during and shortly after armed conflicts.

## II. NATIONAL SECURITY EXCEPTION

Armed conflicts have direct implications for a country's security, well-being, and ultimate existence. Including a national security exception in international intellectual property agreements is therefore important, because it would allow countries to effectively respond to these conflicts while also promoting the resilience of the international intellectual property regime.<sup>91</sup> After all, as a WTO panel decision reminds us, some of a state's "quintessential functions" are to protect its territory and its population from external threats and to maintain law and public order internally.<sup>92</sup> Nevertheless, until the adoption of the TRIPS

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and Hong Kong. Shortly after the filing of that ISDS complaint, Ukraine, Honduras, the Dominican Republic, Cuba and Indonesia also filed state-to-state complaints against Australia under the WTO dispute settlement process. Yu, *Pathways*, *supra* note 53, at 137 (footnotes omitted); *see also id.* at 137–38 (discussing the unfairness of "having three bites at the apple for the same [cross-border] dispute").

91. *See generally* Rostam J. Neuwirth & Alexandr Svetlicinii, *The Economic Sanctions over the Ukraine Conflict and the WTO: Catch-XXI and the Revival of the Debate on Security Exceptions*, 49 J. WORLD TRADE 891 (2015) (discussing national security exceptions in the trade context); Emmanuel Kolawole Oke, *COVID-19, Pandemics, and the National Security Exception in the TRIPS Agreement*, 12 J. INTELL. PROP. INFO. TECH. & ELEC. COM. L. 397 (2021) (assessing a country's ability to invoke the national security exception under the TRIPS Agreement to combat the COVID-19 pandemic); Frederick Abbott, *The TRIPS Agreement Article 73 Security Exceptions and the COVID-19 Pandemic* (S. Ctr., Research Paper No. 116, 2020) (discussing national security exceptions in the intellectual property context).

92. *See* Panel Report, *Saudi Arabia – Measures Concerning the Protection of Intellectual Property Rights* ¶ 7.249, WTO Doc. WT/DS567/R (adopted June 16, 2020) [hereinafter *Saudi Arabia – IPRs* Panel Report]; *see also* Peter K. Yu, *Deferring Intellectual Property Rights in Pandemic Times*, 74 HASTINGS L.J. 489, 504 (2023) [hereinafter Yu, *Deferring Intellectual Property Rights*] ("Just as a country's constitution should not be 'a suicide pact' . . . the TRIPS Agreement should not prevent WTO members from addressing . . . exigencies that threaten their well-being . . ." (quoting *Kennedy v. Mendoza-Martinez*, 372 U.S. 144, 160 (1963))).

Agreement, no international intellectual property agreement had explicitly included a national security exception.<sup>93</sup>

This Part begins by examining the origin and operation of Article 73 of the TRIPS Agreement.<sup>94</sup> It then discusses, in turn, the obligations that the provision has created for countries engaging in armed conflicts as well as those that are not directly involved but have imposed sanctions on belligerent states. This Part further explores the protections under international investment agreements in the event of an armed conflict. Even though the discussion of national security exceptions in international intellectual property agreements focuses primarily on Article 73 of the TRIPS Agreement, the analysis applies equally well to bilateral, regional, and plurilateral intellectual property agreements.<sup>95</sup>

#### A. Article 73

Article 73, the last provision of the TRIPS Agreement, provides a special exception for WTO members to adopt measures that are necessary to advance “essential security interests.”<sup>96</sup> When the TRIPS negotiations began in the late 1980s, this provision did not exist.<sup>97</sup> Instead, the term “national security” was found alongside “public morality” and “public health and nutrition” in developing countries’ proposal for a provision on normative principles,<sup>98</sup> which eventually became Article 8 of the TRIPS Agreement.<sup>99</sup> Drafted with the assistance of the United Nations Conference on

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93. See UNCTAD-ICTSD PROJECT ON IPRS AND SUSTAINABLE DEVELOPMENT, RESOURCE BOOK ON TRIPS AND DEVELOPMENT 803 (2005) [hereinafter TRIPS RESOURCE BOOK] (“[T]he major pre-TRIPS intellectual property instruments, the Berne and Paris Conventions, do not contain any provision on security exceptions.”).

94. TRIPS Agreement, *supra* note 20, art. 73.

95. E.g., Trans-Pacific Partnership Agreement, *supra* note 50, art. 29.2; Regional Comprehensive Economic Partnership Agreement, *supra* note 51, art. 17.13.

96. TRIPS Agreement, *supra* note 20, art. 73.

97. See TRIPS RESOURCE BOOK, *supra* note 93, at 803 (“Neither the Anell Draft nor the Brussels Draft contained a provision on security exceptions. The Dunkel Draft, by contrast, did provide for security exceptions.” (footnotes omitted)).

98. See Peter K. Yu, *The Objectives and Principles of the TRIPS Agreement*, 46 HOUS. L. REV. 979, 1002 (2009) [hereinafter Yu, *Objectives and Principles*] (discussing Article 2 of the developing countries’ negotiating text).

99. TRIPS Agreement, *supra* note 20, art. 8.

Trade and Development (UNCTAD),<sup>100</sup> Article 2(2) of that proposal provides: “In formulating or amending their national laws and regulations on [intellectual property rights], Parties have the right to adopt appropriate measures to protect public morality, national security, public health and nutrition, or to promote public interest in sectors of vital importance to their socio-economic and technological development.”<sup>101</sup> The inclusion of national security in this proposed provision is understandable. Safeguarding national security remains a core function of a WTO member.<sup>102</sup> Even if the Agreement did not include an explicit national security exception, countries are unlikely to accept measures that would jeopardize their national security.

In the middle of the TRIPS negotiations, the drafters believed it would be better to create a separate national security exception in the agreement. As a result, the proposed language in what eventually became Article 8 was split up, with the national security-related wording moved to a new provision.<sup>103</sup> That provision, which became Article 73, was subsequently expanded by mirroring

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100. See Abdulqawi A. Yusuf, *TRIPS: Background, Principles and General Provisions*, in *INTELLECTUAL PROPERTY AND INTERNATIONAL TRADE: THE TRIPS AGREEMENT* 3, 10, 11 n.19 (Carlos M. Correa & Abdulqawi A. Yusuf eds., 3d ed. 2016) (recounting that some provisions in the developing countries’ negotiation text “were either directly based on or inspired by those of the Draft International Code of Conduct on the Transfer of Technology which was negotiated under the auspices of UNCTAD but was never adopted as an international instrument” (citation omitted)).

101. Negotiating Group on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods, *Communication from Argentina, Brazil, Chile, China, Colombia, Cuba, Egypt, India, Nigeria, Peru, Tanzania and Uruguay*, art. 2(2), GATT Doc. MTN.GNG/NG11/W/71 (May 14, 1990).

102. As the WTO panel stated in *Russia – Measures Concerning Traffic in Transit*:

“Essential security interests”, which is evidently a narrower concept than “security interests”, may generally be understood to refer to those interests relating to the quintessential functions of the state, namely, the protection of its territory and its population from external threats, and the maintenance of law and public order internally.

Panel Report, *Russia – Measures Concerning Traffic in Transit*, ¶ 7.130, WTO Doc. WT/DS512/R (adopted Apr. 5, 2019) [hereinafter *Russia – Traffic in Transit* Panel Report] (footnote omitted).

103. See Yu, *Objectives and Principles*, *supra* note 98, at 1010 (noting that “‘national security’ . . . [was] omitted [from] the final version of Article 8” but was nonetheless “covered elsewhere in the TRIPS Agreement”).

the language in Article XXI of the General Agreement on Tariffs and Trade (GATT).<sup>104</sup> The final version reads:

Nothing in this Agreement shall be construed:

- (a) to require a Member to furnish any information the disclosure of which it considers contrary to its essential security interests; or
- (b) to prevent a Member from taking any action which it considers necessary for the protection of its essential security interests;
  - (i) relating to fissionable materials or the materials from which they are derived;
  - (ii) relating to the traffic in arms, ammunition and implements of war and to such traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment;
  - (iii) taken in time of war or other emergency in international relations; or
- (c) to prevent a Member from taking any action in pursuance of its obligations under the United Nations Charter for the maintenance of international peace and security.<sup>105</sup>

Although Article 73 of the TRIPS Agreement was drafted with armed conflicts in mind and with war-related language,<sup>106</sup> nothing prevents this provision from being used in other areas involving national security or “emergency in international relations.”<sup>107</sup> Indeed, during the COVID-19 pandemic, commentators and nongovernmental organizations called for the use of Article 73 to combat the pandemic. In a letter sent to the directors-general of the World Health Organization (WHO), the World Intellectual Property Organization (WIPO), and the WTO, Carlos Correa, the director of the South Centre, wrote: “The use of [Article 73] will be fully justified to procure medical products and devices or to use the technologies to manufacture them as necessary to address

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104. General Agreement on Tariffs and Trade art. XXI, Oct. 30, 1947, 61 Stat. A3 (pts. 5 & 6), 55 U.N.T.S. 188 [hereinafter GATT].

105. TRIPS Agreement, *supra* note 20, art. 73.

106. *See id.* art. 73(b)(ii)-(iii) (including language such as “the traffic in arms, ammunition and implements of war” and “taken in time of war”).

107. *Id.* art. 73(b)(iii).

the current health emergency.”<sup>108</sup> Similarly, Frederick Abbott discussed the possible use of Article 73 in the pandemic context.<sup>109</sup>

### *B. Parties to an Armed Conflict*

Article 73(b) of the TRIPS Agreement allows countries to safeguard national security by “taking any action which it considers necessary for the protection of its essential security interests.”<sup>110</sup> Such action is particularly appropriate “in time of war or other emergency in international relations.”<sup>111</sup> Based on the provision’s plain language, countries involved in an armed conflict will be in a good position to utilize Article 73 to justify their wartime measures in the intellectual property arena.

Consider, for instance, the Russo-Ukrainian War. In the war’s first few months, the Russian government issued Decree 299, which reduced to zero the royalty rate for national security-based compulsory licenses to intellectual property rights held by individuals or entities originating from the United States or other “unfriendly” nations.<sup>112</sup> Because this decree has broad coverage and potential major negative impacts on U.S. companies and individuals, intellectual property commentators quickly discussed problems that might arise when Russia “legalized” infringement of intellectual property rights held by U.S. companies and individuals.<sup>113</sup> In such an environment, U.S. rights holders would be put in a very weak position to protect their intellectual property assets in Russia. The lack of such protection would also lead to the creation and distribution of pirated and counterfeit goods and

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108. Letter from Carlos Correa, Exec. Dir., S. Ctr., to Tedros Adhanom Ghebreyesus, Dir.-Gen., World Health Org., Francis Gurry, Dir.-Gen., World Intell. Prop. Org. & Roberto Azevêdo, Dir.-Gen., World Trade Org. (Apr. 4, 2020), <https://www.southcentre.int/wp-content/uploads/2020/04/COVID-19-Open-Letter-REV.pdf>.

109. Abbott, *supra* note 91.

110. TRIPS Agreement, *supra* note 20, art. 73(b).

111. *Id.* art. 73(b)(iii).

112. *See supra* text accompanying note 4. It is important to put the zero-royalty rate in the right perspective. Before the issuance of Decree 299, the royalty rate for national security-based compulsory licenses in Russia was only 0.5 percent. *See* Josie L. Little & Osagie Imasogie, *McRussia: The Weaponization of Intellectual Property*, 63 *IDEA* 306, 320 (2023) (“A decree from October 18, 2021 previously clarified that the compensation for infringement was 0.5%, so Decree No. 299 is best thought of as an escalation of existing Russian law rather than an overnight development.”).

113. *See* sources cited *supra* note 3.

services, which could then be exported to the United States or other third markets via online or offline channels.

As problematic as Decree 299 is from the standpoint of U.S. intellectual property rights holders, such a decree is likely to comply with the TRIPS Agreement. The use of language “which [a member] considers necessary”<sup>114</sup> gives the country invoking the national security exception wide latitude in determining what measures it wants to adopt to protect its essential security interests. The key criterion for evaluating whether the measures invoking Article 73 are appropriate is the invoking member’s compliance with the obligation of good faith,<sup>115</sup> including through the demonstration that the adopted measures can plausibly protect the member’s essential security interests.<sup>116</sup> Although WTO panels have not weighed in much on the use of the national security exception, two recent cases invoked this exception.<sup>117</sup>

*Russia – Measures Concerning Traffic in Transit* is an important WTO case in which the national security exception was at the center of the dispute.<sup>118</sup> This case emerged out of the 2014 conflict between Russia and Ukraine over the control of Crimea.<sup>119</sup> During and after the conflict, Russia blocked the transportation of Ukrainian goods by road or rail across the Ukraine-Russia border to Kazakhstan and the Kyrgyz Republic.<sup>120</sup> Particularly noteworthy was the WTO panel’s consideration of the justiciability of the national security exception in GATT.<sup>121</sup> Agreeing with the position taken by the

114. TRIPS Agreement, *supra* note 20, art. 73(b).

115. See *Russia – Traffic in Transit* Panel Report, *supra* note 102, ¶ 7.132 (“[T]he discretion of a Member to designate particular concerns as ‘essential security interests’ is limited by its obligation to interpret and apply Article XXI(b)(iii) of the GATT 1994 in good faith.”).

116. See *id.* ¶ 7.138 (“[A]s concerns the application of Article XXI(b)(iii), th[e] obligation [of good faith] is crystallized in demanding that the measures at issue meet a minimum requirement of plausibility in relation to the proffered essential security interests, i.e.[,] that they are not implausible as measures protective of these interests.”).

117. *Id.*; *Saudi Arabia – IPRs* Panel Report, *supra* note 92. The invocation of the national security exception is equally rare before the formation of the WTO. See TRIPS RESOURCE BOOK, *supra* note 93, at 802 (“Under the GATT 1947, only four such cases reached the level of formalized dispute settlement, while no panel established since the creation of the WTO for dealing with these kinds of disputes has succeeded in producing a report.”).

118. *Russia – Traffic in Transit* Panel Report, *supra* note 102.

119. *Id.* ¶ 7.8.

120. *Id.* ¶ 7.1.

121. See *id.* ¶¶ 7.53–104 (exploring whether the WTO panel “has jurisdiction to review Russia’s invocation of Article XXI(b)(iii) of the GATT 1994”).

United States<sup>122</sup>—a third party in the dispute—Russia contended that “the invocation of Article XXI(b)(iii) by a Member renders its actions immune from scrutiny by a WTO dispute settlement panel.”<sup>123</sup> Even though the panel ultimately rejected the position taken by both Russia and the United States,<sup>124</sup> it found that “Russia ha[d] met the requirements for invoking Article XXI(b)(iii) of the GATT 1994 in relation to the measures at issue.”<sup>125</sup> Although this case did not implicate Article 73 of the TRIPS Agreement and focused instead on Article XXI of the GATT,<sup>126</sup> the virtually identical language in these two provisions has made any insights gleaned from this case highly useful in the intellectual property context.

*Saudi Arabia – Measures Concerning the Protection of Intellectual Property Rights* is a more recent TRIPS dispute between Saudi Arabia and Qatar.<sup>127</sup> This dispute concerned Saudi Arabia’s imposition of economic and diplomatic sanctions that ultimately prevented intellectual property rights holders in Qatar from obtaining legal counsel to enforce intellectual property rights through civil proceedings and to benefit from the criminal procedures and penalties provided under Saudi law.<sup>128</sup> At issue was the unauthorized streaming and broadcasting by beoutQ, an entity created after the imposed sanctions, of contents taken from sports channels owned by Qatar-based beIN Media Group LLC and its affiliates.<sup>129</sup> Building on *Russia – Measures Concerning Traffic in*

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122. See *id.* ¶ 7.51 (arguing that the WTO panel “lacks the authority to review the invocation of Article XXI and to make findings on the claims raised in this dispute” and that every WTO member has an inherent right “to determine for itself those matters that it considers necessary for the protection of its essential security interests”).

123. *Id.* ¶ 7.57.

124. As the WTO panel report stated:

Russia’s argument that the Panel lacks jurisdiction to review Russia’s invocation of Article XXI(b)(iii) must fail. The Panel’s interpretation of Article XXI(b)(iii) also means that it rejects the United States’ argument that Russia’s invocation of Article XXI(b)(iii) is “non-justiciable”, to the extent that this argument also relies on the alleged totally “self-judging” nature of the provision.

*Id.* ¶ 7.103.

125. *Id.* ¶ 7.149.

126. See GATT, *supra* note 104, art. XXI; TRIPS Agreement, *supra* note 20, art. 73.

127. *Saudi Arabia – IPRs* Panel Report, *supra* note 92.

128. See *id.* ¶¶ 2.16–.29, 2.46–.48 (providing the factual background).

129. See *id.* ¶¶ 2.40–.45 (discussing the emergence of beoutQ).

*Transit*,<sup>130</sup> the WTO panel acknowledged up front its jurisdiction to determine whether Saudi Arabia had met the requirements for invoking Article 73 of the TRIPS Agreement.<sup>131</sup> The panel then found that Saudi Arabia had met those requirements in relation to measures that “prevent[ed] beIN from obtaining Saudi legal counsel to enforce its [intellectual property] rights through civil enforcement procedures before Saudi courts and tribunals.”<sup>132</sup> As the panel explained, “[t]he measures aimed at denying Qatari nationals access to civil remedies through Saudi courts may be viewed as an aspect of Saudi Arabia’s umbrella policy of ending or preventing any form of interaction with Qatari nationals.”<sup>133</sup> Nevertheless, the panel found for Qatar regarding Saudi Arabia’s failure to comply with Article 61 of the TRIPS Agreement.<sup>134</sup> According to the panel, “the non-application of criminal procedures and penalties to beoutQ, a commercial-scale broadcast pirate, affects not only Qatar or Qatari nationals, but also a range of third-party right holders.”<sup>135</sup> Thus, “there is . . . no rational or logical connection between the comprehensive measures aimed at ending interaction with Qatar and Qatari nationals, and the non-application of Saudi criminal procedures and penalties to beoutQ.”<sup>136</sup>

Apart from these two disputes, parties in other WTO cases in the past few years have invoked the national security exception in GATT to justify their imposition of trade tariffs on goods originating from other WTO members.<sup>137</sup> A widely cited example is the United States’ use of this exception to support its tariffs on Chinese goods, which were imposed as part of the U.S.-China trade war.<sup>138</sup>

130. *Russia – Traffic in Transit* Panel Report, *supra* note 102.

131. *See Saudi Arabia – IPRs* Panel Report, *supra* note 92, ¶ 7.23 (“[T]he Panel concludes that it cannot decline to exercise its jurisdiction over the claims of WTO-inconsistency that fall within its terms of reference and that the matter is justiciable.”).

132. *Id.* ¶ 8.1.c.i.

133. *Id.* ¶ 7.286.

134. *Id.* ¶ 8.1.c.ii.

135. *Id.* ¶ 7.291.

136. *Id.* ¶ 7.292.

137. *See* Justin Hughes, *Fitting China-US Trade into WTO Trade Law – National Security and Non-Violation Mechanisms*, 2022 MICH. ST. L. REV. 319, 338 n.66 [hereinafter Hughes, *China-US Trade*] (listing WTO cases in 2016 that had invoked the national security exception under GATT).

138. *See id.* at 327 (“[A]ctions to decouple *some* aspects of the China-U.S. trade relationship *may* well be defensible under the WTO essential security interest exceptions . . .”).

This Part will not discuss these attempts to invoke the national security exception, due in part to their limited success in WTO panel decisions<sup>139</sup> and in part to the fact that the disputes involved are quite far away from intellectual property matters. It is nonetheless worth keeping in mind that the national security exception has been invoked in many WTO disputes, and those disputes may provide useful insights into the question at hand.

In sum, the international obligations of countries involved in an armed conflict are not difficult to discern. Not only can Article 73 of the TRIPS Agreement, as well as Article XXI of GATT, be used to justify wartime measures in the intellectual property arena, but many WTO panel decisions also provide guidance on how these measures are to be evaluated.

### *C. Sanctioning States Not Directly Involved in the Conflict*

Although a WTO member can easily invoke Article 73 of the TRIPS Agreement to justify wartime intellectual property measures taken in response to an armed conflict, a deeper analysis is required to determine whether that member can equally benefit from such a provision if it is not directly involved in the conflict but has imposed sanctions on belligerent states. In relation to the Russo-Ukrainian War, the United States falls within this category.

There are three general routes that a sanctioning state can consider. The first route, which continues from the discussion in the previous section, involves the use of Article 73(b) of the TRIPS Agreement.<sup>140</sup> Although Article 73(b)(iii) supports measures “taken in time of war,” it is unclear whether this provision also covers countries that are not directly involved in a war but have imposed sanctions on belligerent states.<sup>141</sup> After all, countries such as the United States are not at war with Russia; they have merely imposed sanctions on the latter in response to the war.

There are several arguments in the sanctioning state’s favor. Even if the measures taken by this state are not covered in the

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139. See, e.g., Panel Report, *China – Additional Duties on Certain Products from the United States*, ¶¶ 7.102–.119, WTO Doc. WT/DS558/R (adopted Aug. 16, 2023) (exploring whether the United States’ national security-related measures under Section 232 of the Trade Expansion Act of 1962 are excluded from the scope of application of the WTO Agreement on Safeguards).

140. TRIPS Agreement, *supra* note 20, art. 73(b).

141. *Id.* art. 73(b)(iii).

language “taken in time of war,” Article 73(b)(iii) goes beyond such language to cover “other emergenc[ies] in international relations.”<sup>142</sup> Moreover, because Russia is a nuclear power and has long-range missile capabilities, one could certainly expect that any nuclear-based military action taken by Russia could jeopardize the security of virtually any country on Earth. Russia’s nuclear capabilities therefore help explain why a sanctioning state like the United States could argue that its sanctions are “necessary for the protection of its essential security interests.”<sup>143</sup> Indeed, when the U.S. delegation proposed Article XXI of GATT, it provided an illustration using the complications confronting the United States in the two years before it entered the Second World War.<sup>144</sup>

The second route entails the use of Article 73(b)(ii) of the TRIPS Agreement, which covers “the traffic in arms, ammunition and implements of war and . . . traffic in other goods and materials as is carried on directly or indirectly for the purpose of supplying a military establishment.”<sup>145</sup> To the extent that the creation and distribution of military goods and services are implicated, Article 73(b)(ii) will provide a strong justification for measures taken by a sanctioning state even if that state is not directly involved in an armed conflict.

The final route, and arguably the strongest one, relies on Article 73(c) of the TRIPS Agreement, which allows a WTO member to take “any action in pursuance of its obligations under the United Nations Charter for the maintenance of international peace and security.”<sup>146</sup> Following Russia’s invasion of Ukraine, the United Nations General Assembly adopted a resolution condemning

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142. *Id.*

143. *Id.* art. 73(b).

144. See Hughes, *China-US Trade*, *supra* note 137, at 350–51. As the U.S. delegate declared in the drafting process:

As to the second provision, “or other emergency in international relations,” we had in mind particularly the situation which existed before the last war, before our own participation in the last war, which was not until the end of 1941. War had been going on for two years in Europe and, as the time of our own participation approached, we were required, for our own protection, to take many measures which would have been prohibited by the Charter. Our exports and imports were under rigid control. They were under rigid control because of the war then going on.

*Id.*

145. TRIPS Agreement, *supra* note 20, art. 73(b)(ii).

146. *Id.* art. 73(c).

Russia's military operations.<sup>147</sup> Based on this resolution, subsequent resolutions and documents, as well as the positions taken by members of the international community, one can certainly argue that a sanctioning state is taking measures "in pursuance of its obligations under the United Nations Charter for the maintenance of international peace and security."<sup>148</sup>

In sum, Article 73 of the TRIPS Agreement will offer some protection to countries that have imposed sanctions on Russia even if they are not directly involved in an armed conflict. Nevertheless, these states will need to prove before the WTO panels that they have met the requirements laid down in the provision. For instance, they may need to show that there is a means-end fit—that is, they took the challenged measures to discharge their obligations under "the United Nations Charter for the maintenance of international peace and security."<sup>149</sup>

#### *D. Intellectual Property Investments*

This Part has thus far focused on international intellectual property agreements. However, as section I.B pointed out, international investment agreements may also come into play.<sup>150</sup> For example, Decree 299 has a direct impact on the protection of foreign intellectual property investors in Russia.<sup>151</sup> Likewise, the sanctions imposed by the United States and other members of the international community could have direct impacts on the legitimate interests of Russian intellectual property investors, including those residing abroad and those unsupportive of the Russo-Ukrainian War.

To accommodate armed conflicts and civil strife, many international investment agreements contain built-in exceptions.<sup>152</sup>

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147. See G.A. Res. A/ES-11/L.1, Aggression Against Ukraine ¶ 2 (Mar. 1, 2022) (deploring "in the strongest terms the aggression by the Russian Federation against Ukraine in violation of Article 2(4) of the [U.N.] Charter").

148. TRIPS Agreement, *supra* note 20, art. 73(c).

149. *Id.*; cf. *Russia – Traffic in Transit* Panel Report, *supra* note 102, ¶ 7.69 (requiring the demonstration of "a 'close and genuine relationship of ends and means' between the measure and the objective of the Member adopting the measure").

150. See *supra* Section I.B.

151. See *supra* text accompanying note 4.

152. See, e.g., Agreement Between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Union of Soviet Socialist Republics

Somewhat different from the national security exceptions mentioned in the previous section, these built-in exceptions warrant a separate analysis.<sup>153</sup> As an illustration, Article 4 of the Russia-U.K. Bilateral Investment Treaty provides:

Investors of one Contracting Party whose investments in the territory of the other Contracting Party suffer losses owing to any armed conflict, a state of national emergency or civil disturbances in the territory of the latter Contracting Party shall be accorded by the latter Contracting Party treatment, as regards restitution, indemnification, compensation or other settlement, no less favourable than that which the latter Contracting Party accords to investors of any third State. Resulting payments shall be made without delay and be freely transferable.<sup>154</sup>

While the provision anticipates “restitution, indemnification, compensation or other settlement” following an armed conflict, a key focus of this provision is to ensure that the other signatory and its investors receive “no less favourable” treatment than local investors or investors in third countries.<sup>155</sup> Likewise, Article 9 of the Australia-Hong Kong Investment Agreement includes a provision on the treatment of investment in case of an armed conflict or a civil strife.<sup>156</sup> Like the provision in the Russia-U.K. treaty, the provision in the Australia-Hong Kong agreement requires the relevant country to accord to investors of the other country “treatment no less favourable than that it accords, in like circumstances, to . . . (a) its own investors and their investments; or (b) investors of any non-Party and their investments.”<sup>157</sup>

Moreover, as Henning Grosse Ruse-Khan and Federica Paddeu observe in relation to international investment agreements, countries seeking to avoid breaching these agreements will be able

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for the Promotion and Reciprocal Protection of Investments, Russ.-U.K., art. 4, Apr. 6, 1989, <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/2235/download> [hereinafter Russia-U.K. Bilateral Investment Treaty]; Investment Agreement Between the Government of Australia and the Government of the Hong Kong Special Administrative Region of the People’s Republic of China, Austl.-H.K., art. 9, Mar. 26, 2019, <https://investmentpolicy.unctad.org/international-investment-agreements/treaty-files/5830/download> [hereinafter Australia-Hong Kong Investment Agreement].

153. See, e.g., TRIPS Agreement, *supra* note 20, art. 73.

154. Russia-U.K. Bilateral Investment Treaty, *supra* note 152, art. 4.

155. *Id.*

156. Australia-Hong Kong Investment Agreement, *supra* note 152, art. 9.

157. *Id.* art. 9.1.

to benefit from defenses provided under public international law, such as the necessity defense.<sup>158</sup> As they maintain:

To successfully plead the defence of necessity, a State must fulfil the following three requirements: (i) there must be a grave and imminent peril; (ii) the State must protect an essential interest, to the detriment of a lesser one; (iii) the State's act was the "only way" to safeguard the interest from that peril. In addition, the plea is excluded if: (iv) the obligation in question excludes reliance on necessity; and (v) the State contributed to the situation of necessity.<sup>159</sup>

Although their research paper was written specifically to explore how a waiver proposed by India and South Africa to partially suspend the obligations of the TRIPS Agreement to help combat COVID-19 (COVID-19 TRIPS waiver) would affect international investment agreements,<sup>160</sup> the paper's discussion of the necessity defense is equally relevant to situations involving an armed conflict.

Regardless of whether the relevant international investment agreement contains a special provision to accommodate an armed conflict and whether the host state has a valid defense under public international law, one could still debate what legitimate expectations an intellectual property investor would have during

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158. See Henning Grosse Ruse-Khan & Federica Paddeu, *A TRIPS-COVID Waiver and Overlapping Commitments to Protect Intellectual Property Rights Under International IP and Investment Agreements* 36–44 (S. Ctr., Research Paper No. 144, 2022).

159. *Id.* at 37.

160. Council for Trade-Related Aspects of Intellectual Property Rights [TRIPS Council], *Waiver from Certain Provisions of the TRIPS Agreement for the Prevention, Containment and Treatment of COVID-19: Communication from India and South Africa*, WTO Doc. IP/C/W/669 (Oct. 2, 2020) [hereinafter *TRIPS Waiver Proposal*] (providing the original proposal); TRIPS Council, *Waiver from Certain Provisions of the TRIPS Agreement for the Prevention, Containment and Treatment of COVID-19: Revised Decision Text*, WTO Doc. IP/C/W/669/Rev.1 (May 25, 2021) [hereinafter *Revised TRIPS Waiver Proposal*] (providing the revised proposal). For the Author's discussions of the proposal for the COVID-19 TRIPS waiver and its aftermath, see generally Peter K. Yu, *A Critical Appraisal of the COVID-19 TRIPS Waiver*, in *INTELLECTUAL PROPERTY RIGHTS IN THE POST PANDEMIC WORLD: AN INTEGRATED FRAMEWORK OF SUSTAINABILITY, INNOVATION AND GLOBAL JUSTICE* 11 (Taina Pihlajarinne, Jukka Tapio Mähönen & Pratyush Nath Upreti eds., 2023) [hereinafter *Yu, Critical Appraisal*]; Peter K. Yu, *China, the TRIPS Waiver and the Global Pandemic Response*, in *INTELLECTUAL PROPERTY, COVID-19, AND THE NEXT PANDEMIC: DIAGNOSING PROBLEMS, DEVELOPING CURES* (Madhavi Sunder & Sun Haochen eds., forthcoming 2023) [hereinafter *INTELLECTUAL PROPERTY AND NEXT PANDEMIC*]; Peter K. Yu, *The COVID-19 TRIPS Waiver and the WTO Ministerial Decision*, in *INTELLECTUAL PROPERTY RIGHTS IN TIMES OF CRISIS* (Jens Schovsbo ed., forthcoming 2023) [hereinafter *Yu, Ministerial Decision*].

an armed conflict.<sup>161</sup> Because of the conflict's significant impacts on both market and trading conditions, it is simply unrealistic to assume that the wartime expectations of these investors could be the same as the prewar expectations. In fact, one could recall the significantly different expectations during the early stages of the COVID-19 pandemic, when the global economy completely shut down.<sup>162</sup> Should ISDS complaints be brought in relation to the emergency relief measures introduced during the pandemic, the resolution of the disputes would likely be quite dependent on what legitimate expectations the investors could have at that time.<sup>163</sup>

In addition, host states will only be able to avoid compensation if the measures taken are deemed to be necessary during or in relation to an armed conflict.<sup>164</sup> What is considered necessary will likely vary from country to country – for instance, it may depend on whether the host state is a party to an armed conflict. For countries that are not directly involved but have imposed sanctions on belligerent states, the analysis will also be quite different.

In sum, there are still many unanswered or underexplored questions concerning a country's specific obligations to intellectual property investors under international investment agreements. Because these agreements have only been used for about a decade to strengthen cross-border protection of intellectual property rights,<sup>165</sup> and such use has slowed down during the COVID-19

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161. See generally SIMON KLOPSCHINSKI, CHRISTOPHER S. GIBSON & HENNING GROSSE RUSE-KHAN, *THE PROTECTION OF INTELLECTUAL PROPERTY RIGHTS UNDER INTERNATIONAL INVESTMENT LAW* 328–47 (2021) (discussing reasonable reliance on legitimate expectations in the intellectual property context); PRATYUSH NATH UPRETI, *INTELLECTUAL PROPERTY OBJECTIVES IN INTERNATIONAL INVESTMENT AGREEMENTS* 80–83 (2022) (discussing the protection of legitimate expectations in investor-state disputes in the intellectual property area).

162. See Peter K. Yu, *Deferring Intellectual Property Rights*, *supra* note 92, at 534 (“During . . . a major public health exigency, rights holders will not be in a good position to exploit their intellectual property rights on the open market, similar to what we saw in the first few months of the COVID-19 pandemic when the domestic and global economies completely shut down.”).

163. See Bryan Mercurio & Pratyush Nath Upreti, *The Legality of a TRIPS Waiver for COVID-19 Vaccines Under International Investment Law*, 71 *INT'L & COMPAR. L.Q.* 323, 331–43 (2022) (discussing whether the domestic implementation of the proposed COVID-19 TRIPS waiver would impede investors' legitimate expectations).

164. Australia-Hong Kong Investment Agreement, *supra* note 152, art. 9.2(b).

165. See *supra* text accompanying notes 72–76.

pandemic,<sup>166</sup> it will be interesting to see whether the measures introduced by a conflict-stricken or sanctioning state could be challenged under international investment agreements.

### III. PROACTIVE MEASURES

Part II explored whether the United States and other WTO members will violate their obligations under both international intellectual property and investment agreements. This Part turns to proactive measures that nonbelligerent states – whether they have imposed sanctions or not – could introduce to protect intellectual property rights holders in the event of an armed conflict. The covered measures are divided into three distinct categories: (1) policy measures that could be introduced at the domestic level; (2) cooperative, coordinating, or adjudicatory mechanisms that could be established at the international level; and (3) academic and policy research that could be conducted on wartime and postwar protection of intellectual property rights. For analytical effectiveness, the discussion of domestic measures, similar to the analysis in Part II, separates parties to an armed conflict from other members of the international community, in particular those that have imposed sanctions on belligerent states.

#### *A. Domestic Measures*

##### *1. Parties to an Armed Conflict*

Commentators have widely linked innovation to intellectual property protection, and innovation in military technologies is no exception. Regardless of whether one agrees that intellectual property rights are critical to innovation in these technologies or whether such innovation can be driven instead by alternative

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166. See Peter K. Yu, *The Changing Chemistry Between Intellectual Property and Investment Law*, in *IMPROVING INTELLECTUAL PROPERTY: A GLOBAL PROJECT* 406, 412 (Susy Frankel, Margaret Chon, Graeme B. Dinwoodie, Barbara Lauriat & Jens Schovsbo eds., 2023) (“Although investor-state disputes over COVID-19 relief measures have already surfaced in developing countries, no new ISDS complaint has been filed in the intellectual property area.”). See generally Rochelle Cooper Dreyfuss, *ISDS and Intellectual Property in 2020 – Protecting Public Health in the Age of Pandemics*, in *YEARBOOK ON INTERNATIONAL INVESTMENT LAW & POLICY* 2020, at 206 (Lisa E. Sachs, Lise J. Johnson & Jesse Coleman eds., 2022) (discussing intellectual property-related investor-state disputes in the pandemic context).

frameworks,<sup>167</sup> such as those heavily dependent on government funding,<sup>168</sup> there is no denying that intellectual property rights will have important roles to play in advancing military innovation. What is unclear, however, is whether these rights should be strengthened, weakened, or kept at the status quo.

Because of the limited scope and length of this Article, this section does not provide a comprehensive discussion of how to design an appropriate innovation system to address wartime needs, which could be a book-length, or even multi-book, project. Instead, this section outlines those policy measures that can be, or have been, introduced to address wartime needs.

*Suspension of Intellectual Property Rights.* During an armed conflict, countries understandably do not want the intellectual property system to provide benefits to their enemies. Nor do they want intellectual property rights originating from companies and individuals in enemy states to create barriers to innovation supportive of the war effort. Although policymakers and commentators abhor Russia's promulgation of Decree 299,<sup>169</sup> the confiscation of intellectual property held by individuals or entities originating from enemy states or the suspension of their intellectual property rights is very common during an armed conflict. For example, during the First World War, the United States confiscated the patents owned by German intellectual property rights holders.<sup>170</sup> As Joerg Baten, Nicola Bianchi, and Petra Moser recount:

Under the 1917 Trading with the Enemy Act, US authorities confiscated all US patents by German inventors and made 4,706 German-owned US patents available for compulsory licensing. US authorities then issued non-exclusive licenses for 1,246 of these patents "upon equal terms and a royalty basis, to any bona fide American individual or corporation."<sup>171</sup>

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167. For discussions of these alternative frameworks, see generally GENE PATENTS AND COLLABORATIVE LICENSING MODELS: PATENT POOLS, CLEARINGHOUSES, OPEN SOURCE MODELS AND LIABILITY REGIMES 1–60 (Geertrui Van Overwalle ed., 2009) [hereinafter GENE PATENTS]; INCENTIVES FOR GLOBAL PUBLIC HEALTH: PATENT LAW AND ACCESS TO ESSENTIAL MEDICINES 133–283 (Thomas Pogge, Matthew Rimmer & Kim Rubenstein eds., 2010) [hereinafter INCENTIVES FOR GLOBAL PUBLIC HEALTH].

168. See *infra* text accompanying notes 276–279.

169. See *supra* text accompanying note 4.

170. Joerg Baten, Nicola Bianchi & Petra Moser, *Compulsory Licensing and Innovation – Historical Evidence from German Patents After WWI*, 126 J. DEV. ECON. 231, 232 (2017).

171. *Id.* (quoting 3 WILLIAMS HAYNES, AMERICAN CHEMICAL INDUSTRY 260 (1945)).

The United States also confiscated the trademarks of German intellectual property rights holders—the loss of the Bayer trademark immediately comes to mind.<sup>172</sup>

*Compulsory Licenses.* The issuance of compulsory licenses has longstanding precedent from the First and Second World Wars.<sup>173</sup> Similarly, during the COVID-19 pandemic, countries and their supportive commentators and nongovernment organizations strongly advocated the suspension of intellectual property rights to provide freedom to operate to combat COVID-19 and to facilitate access to health products and technologies.<sup>174</sup> Within the TRIPS Agreement, Article 31 delineates the conditions under which a WTO member can issue a compulsory license.<sup>175</sup> Both Article 31*bis* and the recent WTO Ministerial Decision have provided additional waivers to help countries that are in need of health products and that have limited or no capacity to manufacture those products.<sup>176</sup> As section II.A noted, countries involved in an armed conflict will be able to utilize Article 73 to address wartime needs.<sup>177</sup> Standing alone, this provision allows countries that have met the requirements to avoid the more restrictive procedures under

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172. See Gideon Parchomovsky & Peter Siegelman, *Towards an Integrated Theory of Intellectual Property*, 88 VA. L. REV. 1455, 1476 n.75 (2002) (“When Bayer lost its U.S. plant to an American firm during World War I, it also lost the Bayer name and the company’s trademark, the Bayer Cross. As a result, both companies sold Bayer Aspirin.”); Gabriel L. Slater, Note, *The Suspension of Intellectual Property Obligations Under TRIPS: A Proposal for Retaliating Against Technology-Exporting Countries in the World Trade Organization*, 97 GEO. L.J. 1365, 1382 (2009) (“The United States . . . seized Bayer’s ‘Bayer’ and ‘Aspirin’ trademarks in 1917 and assigned the trademarks to an American company; Bayer only regained the exclusive right to use the Bayer name and Bayer-Cross logo by buying part of the American trademark holder Sterling Winthrop, Inc. in 1994 for \$1 billion.”). See generally CHARLES C. MANN & MARK L. PLUMMER, *THE ASPIRIN WARS: MONEY, MEDICINE, AND 100 YEARS OF RAMPANT COMPETITION* 32–49, 65–70 (1991) (discussing Bayer’s loss of its patents and trademarks in the United States and other jurisdictions after the First World War).

173. See Baten et al., *supra* note 170 (noting the issuance of compulsory licenses during the Second World War).

174. See Siva Thambisetty, Aisling McMahon, Luke McDonagh, Hyo Yoon Kang & Graham Dufield, *Addressing Vaccine Inequity During the COVID-19 Pandemic: The TRIPS Intellectual Property Waiver Proposal and Beyond*, 81 CAMBRIDGE L.J. 384, 399 (2022) (noting the need for “freedom to operate without the risk of litigation or the fear that exported [products and] technologies could be seized in transit and impounded for alleged infringement”).

175. TRIPS Agreement, *supra* note 20, art. 31.

176. *Id.* art. 31*bis*; World Trade Organization, Ministerial Decision on the TRIPS Agreement, WTO Doc. WT/MIN(22)/30 (June 22, 2022). See generally Yu, *Ministerial Decision*, *supra* note 160 (discussing the Ministerial Decision).

177. See *supra* Section II.A.

Articles 31 and 31*bis*, as long as the provision is used in good faith and not as a covert attempt to circumvent other TRIPS provisions.<sup>178</sup>

When a WTO member involved in an armed conflict issues a compulsory license, especially one involving the intellectual property rights held by an ally or another country that has actively provided financial or military aid, its policymakers need to think harder about the needs and benefits of that specific license. While more freedom to operate will certainly strengthen the war effort, the issuance of compulsory licenses could alienate the affected countries and other countries that have provided support. After all, compulsory licensing remains highly controversial in the intellectual property field.<sup>179</sup> Even during the COVID-19 pandemic, countries opposing the proposed COVID-19 TRIPS waiver and their supportive commentators have repeatedly pointed out that the proposal's proponents and supporters have failed to show the barriers posed by intellectual property rights to accessing health products and technologies.<sup>180</sup> To many of the proposal's critics,

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178. See DANIEL GERVAIS, *THE TRIPS AGREEMENT: DRAFTING HISTORY AND ANALYSIS* 555 (3d ed. 2008) (“[Article 73] should not be used primarily to circumvent the conditions imposed on another exception specifically provided in the Agreement.”).

179. See, e.g., TRIPS Council, *Minutes of Meeting: Held in the Centre William Rappard on 15–16 October and 10 December 2020*, ¶ 1157, WTO Doc. IP/C/M/96/Add.1 (Feb. 16, 2021) [hereinafter *October and December 2020 Minutes*] (“USTR 2020 Special 301 report, issued right in the middle of the COVID-19 pandemic, continue[s] to condemn countries who improve their laws on compulsory license or make use of compulsory license—countries specifically pressured for their law or their use of compulsory license include Chile, Indonesia, Colombia, Egypt, India, Malaysia, [the] Russian Federation, Turkey, Ukraine, [and] El Salvador.”); BRUNO VANDERMEULEN, NATASHA MANGAL, RÉMY GUICHARDAZ, JULIE DAGHER, SAMUEL LIGONNIÈRE & ROEL PEETERS, *COMPULSORY LICENSING OF INTELLECTUAL PROPERTY RIGHTS: FINAL STUDY REPORT 81* (2023), <https://op.europa.eu/en/publication-detail/-/publication/c7d0597a-a1e0-11ed-b508-01aa75ed71a1/language-en> (“[T]he basic principle of the availability of a [compulsory licensing] procedure at the EU level is that it is a measure ‘of last resort,’ after reasonable efforts to obtain a license at the national level have failed.”); Jonathan Burton-MacLeod, *Tipping Point: Thai Compulsory Licences Redefine Essential Medicines Debate*, in *INCENTIVES FOR GLOBAL PUBLIC HEALTH*, *supra* note 167, at 406, 406–07 (recounting Thailand’s issuance of the compulsory licenses, its dispute with the developers of the compulsorily licensed drugs, and the United States Trade Representative’s Section 301 response).

180. See Bryan Mercurio, *The IP Waiver for COVID-19: Bad Policy, Bad Precedent*, 52 *INT’L REV. INTELL. PROP. & COMPETITION L.* 983, 986 (2021) (“[T]he proponents (and their supporters) have not even pointed to one credible instance where IPRs have blocked the production of a COVID-19 vaccine.”); Adam Mossoff & Amesh Adalja, *Patents as a Driver of the Unprecedented Biomedical Response to COVID-19*, *INQUIRY*, Sept. 21, 2022, at 5 <https://journals.sagepub.com/doi/full/10.1177/00469580221124819> (“There is no evidence

the barriers were instead the result of supply chain and infrastructure problems and a lack of manufacturing capacity and technical expertise.<sup>181</sup>

*Patent Pools.* In past armed conflicts, patent pools have been deployed to break the logjam among patent holders without the issuance of compulsory licenses.<sup>182</sup> A patent pool is

commonly defined as an agreement between two or more patent owners to license one or more of their patents to one another or as

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that patents have blocked the research, development, or distribution of any vaccines for the treatment of COVID-19.”); Alden Abbott, Adam Mossoff, Kristen Osenga & Zvi Rosen, *COVID Vaccine IP Waiver: A Pathway to Fewer, Not More, Vaccines 3*, REGULATORY TRANSPARENCY PROJECT (Oct. 28, 2021), <https://rtp.fedsoc.org/wp-content/uploads/Paper-COVID-Vaccine-IP-Waiver-A-Pathway-to-Fewer-Not-More-Vaccines.pdf> (“There is zero evidence that patents have blockaded the research, development, or distribution of any drugs or vaccines for the treatment of COVID-19.”). In defense of the proposal’s supporters, developing country governments and their supportive non-governmental organizations have provided considerable evidence documenting the many challenges intellectual property rights have posed to the development of COVID-19 products and technologies. See, e.g., TRIPS Council, *Examples of IP Issues and Barriers in COVID-19 Pandemic: Communication from South Africa*, WTO Doc. IP/C/W/670 (Nov. 23, 2020); TRIPS Council, *Response to Questions on Intellectual-Property Challenges Experienced by Members in Relation to COVID-19 in Document IP/C/W/671: Communication from the Plurinational State of Bolivia, Eswatini, India, Kenya, Mozambique, Mongolia, Pakistan, South Africa, the Bolivarian Republic of Venezuela and Zimbabwe*, ¶¶ 28–53, WTO Doc. IP/C/W/673 (Jan. 15, 2021); Médecins Sans Frontières, *WTO COVID-19 TRIPS Waiver Proposal: Myths, Realities and an Opportunity for Governments to Protect Access to Lifesaving Medical Tools in a Pandemic*, ACCESS CAMPAIGN (Dec. 3, 2020), <https://msfaccess.org/wto-covid-19-trips-waiver-proposal-myths-realities-and-opportunity-governments-protect-access>.

181. See Bryan Mercurio, *WTO Waiver from Intellectual Property Protection for COVID-19 Vaccines and Treatments: A Critical Review*, 62 VA. J. INT’L L. ONLINE 9, 15–16 (2021) [hereinafter Mercurio, *WTO Waiver*] (“Other major factors—such as infrastructure, supply chains, production capabilities and capacity—may prove to be a major stumbling block in distributing medicines and vaccines.”); Reto M. Hilty, Pedro Henrique D. Batista, Suelen Carls, Daria Kim, Matthias Lamping & Peter R. Slowinski, *Covid-19 and the Role of Intellectual Property: Position Statement of the Max Planck Institute for Innovation and Competition of 7 May 2021*, at 1 (Max Planck Inst. for Innovation & Competition, Research Paper No. 21-13, 2021) (“The holdups in vaccine manufacturing and distribution have been caused mainly by the shortage in raw materials, insufficient production capacity and highly complex manufacturing process[es] (in the case of mRNA and vector vaccines).” (footnote omitted)); Justin Hughes, *Biden Decision on COVID Vaccine Patent Waivers Is More About Global Leadership Than IP, USA TODAY* (May 6, 2021), <https://www.usatoday.com/story/opinion/2021/05/06/covid-vaccine-patents-biden-boosts-american-leadership-column/4932766001> (“Practically everyone agrees that the issue in production of these drugs—whether conventional vaccines or the new mRNA vaccines—is not the patented technology, but (a) proper manufacturing facilities, (b) raw materials, (c) production know-how, and (d) logistical hurdles in administering the shots.”).

182. See generally GENE PATENTS, *supra* note 167, at 1–60 (collecting articles that discuss patent pools).

a package to third parties who are willing to pay the royalties associated, either directly by patentees to licensees or, indirectly, through a new entity specifically set up for the pool administration.<sup>183</sup>

Patent pools are particularly useful in situations “when multiple [patent] owners each have a right to exclude others from [the patented invention] and no one has an effective privilege of use.”<sup>184</sup> Michael Heller and Rebecca Eisenberg referred to this logjam as “the tragedy of the anti-commons.”<sup>185</sup>

Shortly after the outbreak of the First World War, the Manufacturer’s Aircraft Association was established in the United States to pool together patents owned by the Wright Company, the Curtiss Aeroplane and Motor Company, and other manufacturers.<sup>186</sup> Outside the military area, patent pools have also been widely used to enhance access to medicines and other health products and technologies. Notable examples are the Medicines Patent Pool<sup>187</sup> and the COVID-19 Technology Access Pool (C-TAP).<sup>188</sup> Although the use of patent pools to address public health

183. Geertrui Van Overwalle, *Of Thickets, Blocks and Gaps: Designing Tools to Resolve Obstacles in the Gene Patents Landscape*, in GENE PATENTS, *supra* note 167, at 383, 405.

184. Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCI. 698, 698 (1998).

185. For discussions of the tragedy of the anti-commons in biomedical research, see generally MICHAEL HELLER, THE GRIDLOCK ECONOMY: HOW TOO MUCH OWNERSHIP WRECKS MARKETS, STOPS INNOVATION, AND COSTS LIVES 49–78 (2010); Heller & Eisenberg, *supra* note 184.

186. For discussions of the patent wars involving aircraft shortly before the First World War, see generally Tom D. Crouch, *Blaming Wilbur and Orville: The Wright Patent Suits and the Growth of American Aeronautics*, in ATMOSPHERIC FLIGHT IN THE TWENTIETH CENTURY 287 (Peter Galison & Alex Roland eds., 2000); Tom D. Crouch, *The Wright Brothers and the Patent Wars, 1909–1915*, 11 J. FED. CIR. HIST. SOC’Y 7 (2017); Herbert A. Johnson, *The Wright Patent Wars and Early American Aviation*, 69 J. AIR L. & COM. 21 (2004); Ron D. Katznelson & John Howells, *The Myth of the Early Aviation Patent Hold-Up – How a US Government Monopsony Commandeered Pioneer Airplane Patents*, 24 INDUS. & CORP. CHANGE 1 (2015).

187. Established in July 2010 as a spinoff from Unitaid, a global health initiative financed by levies on plane tickets, the Medicines Patent Pool “aim[s] to increase access to, and facilitate the development of, life-saving medicines for low- and middle-income countries through an innovative approach to voluntary licensing and patent pooling.” *About Us*, MEDS. PAT. POOL, <https://medicinespatentpool.org/who-we-are/about-us> (last visited Oct. 16, 2023).

188. “C-TAP provides a single global platform for the developers of COVID-19 therapeutics, diagnostics, vaccines and other health products to share their intellectual property, knowledge, and data with quality-assured manufacturers through public health-

needs can be quite different from the use of these pools to address wartime needs that are unrelated to health, the former will provide important lessons for the latter.

*Secrecy Orders.* To protect critical military technology, governments have issued secrecy orders, which prevent intellectual property rights holders from publishing or disclosing their technologies without government authorization.<sup>189</sup> During the First World War, Congress adopted a statute “[t]o prevent the publication of inventions by the grant of patents that might be detrimental to the public safety or convey useful information to the enemy.”<sup>190</sup> Although the provision was not renewed after the war, the outbreak of the Second World War caused Congress to reintroduce this arrangement.<sup>191</sup> In the postwar period, the arrangement slowly evolved into the secrecy orders we know today, which were created through the Invention Secrecy Act of 1951.<sup>192</sup>

Under the current arrangements, the Commissioner of Patents has the power to “order . . . [an] invention be kept secret and . . . [to] withhold the publication of the application or the grant of a patent therefor” when the publication or disclosure of such an invention “might . . . be detrimental to the national security.”<sup>193</sup> Separate from these orders, the statute requires a patent applicant to obtain a

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driven, transparent, voluntary, non-exclusive and transparent licences.” *COVID-19 Technology Access Pool*, WORLD HEALTH ORG., <https://www.who.int/initiatives/covid-19-technology-access-pool> (last visited Oct. 16, 2023); see also Peter K. Yu, *Modalities, Challenges, and Possibilities: An Introduction to the Pharmaceutical Innovation Symposium*, 7 TEX. A&M J. PROP. L. 1, 32–34 (2021) [hereinafter Yu, *Modalities*] (discussing C-TAP).

189. See 35 U.S.C. § 181 (prohibiting against “the publication of an application or by the grant of a patent on an invention . . . [that might] be detrimental to the national security”).

190. Act of Oct. 6, 1917, Pub. L. No. 65-80, ch. 95, 40 Stat. 394 (1917); see also Fenning, *supra* note 26, at 872 (“During [the First World War] the Patent Office issued about twenty-one hundred secrecy orders, about half of which were in cases which had been allowed and were merely awaiting payment of the final fee.”).

191. Act of July 1, 1940, Pub. L. No. 76-700, ch. 501, 54 Stat. 710 (1940); Act of Aug. 21, 1941, Pub. L. No. 77-239, ch. 393, 55 Stat. 657 (1941); Act of June 16, 1942, Pub. L. No. 77-609, ch. 415, 56 Stat. 370 (1942); see also Francis Hughes, *Notes on the Prospect Confronting Post-War British Patent Property*, 27 J. PAT. OFF. SOC’Y 729, 744 (1945) (“Under the emergency legislation of the present war it is estimated . . . that between 2,500 and 3,000 patent applications per annum have been withheld from sealing as grants for each of the four years 1940–1943.”).

192. Invention Secrecy Act of 1951, Pub. L. No. 82-256, ch. 4, 66 Stat. 3 (1952) (codified as amended at 35 U.S.C. §§ 181–188). See generally Sabin H. Lee, *Protecting the Private Inventor Under the Peacetime Provisions of the Invention Secrecy Act*, 12 BERKELEY TECH. L.J. 345 (1997) (critically examining the Invention Secrecy Act).

193. 35 U.S.C. § 181.

foreign filing license from the U.S. Patent and Trademark Office if it intends to file a patent application abroad within six months of the U.S. application.<sup>194</sup> Upon issuance of a secrecy order, the applicant could petition for a rescission or removal of that order or seek compensation before the U.S. Court of Federal Claims.<sup>195</sup> Although the current arrangement offers some protection to intellectual property rights holders, commentators have actively called for reforms to strengthen their protections.<sup>196</sup>

*Extension of Intellectual Property Rights.* During an armed conflict, intellectual property rights holders will often be unable to exploit their rights the same way they did before. To compensate rights holders, some countries have provided a special one-time extension of their rights, usually after the end of the conflict but sometimes also during or shortly before the conflict. In the United States, in relation to works published abroad during the First and Second World Wars, Congress granted the President the power to extend the deadlines for complying with the formalities and other requirements under U.S. copyright law.<sup>197</sup> Similarly, European countries extended copyright terms to compensate for lost time during the Second World War.<sup>198</sup> The latter extensions paved the

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194. See *id.* § 184(a) (“Except when authorized by a license obtained from the Commissioner of Patents a person shall not file or cause or authorize to be filed in any foreign country prior to six months after filing in the United States an application for patent or for the registration of a utility model, industrial design, or model in respect of an invention made in this country.”).

195. See *id.* § 183 (providing patent applicants with the right “to apply to the head of any department or agency who caused the [secrecy] order to be issued for compensation for the damage caused by the order . . . and/or for the use of the invention by the Government, resulting from his disclosure.”).

196. For these reforms, see, for example, James Maune, *Patent Secrecy Orders: Fairness Issues in Application of Invention of Secrecy Act*, 20 TEX. INTELL. PROP. L.J. 471, 490–92 (2012); Gregory Saltz, Note, *Patently Absurd: The Invention Secrecy Order System*, 8 TEX. A&M J. PROP. L. 211, 231–33 (2022).

197. See Act of Dec. 18, 1919, Pub. L. No. 66-102, ch. 11, 41 Stat. 368 (1919) (extending the deadlines for fulfilling “the conditions and formalities prescribed” in the 1909 Copyright Act for works “first produced or published abroad after August 1, 1914, and before the date of the President’s proclamation of peace”); Act of Sept. 25, 1941, Pub. L. No. 77-258, ch. 421, 55 Stat. 732 (1941) (empowering the President to extend the deadlines for fulfilling the conditions or formalities under the 1909 Copyright Act for “works first produced or published abroad and subject to copyright or to renewal of copyright under the laws of the United States”).

198. See Code de la Propriété Intellectuelle arts. L. 123-8, L. 123-9 (1992) (Fr.) (extending the copyright protection for works whose rights have been affected by the First and Second

way for the adoption of the European Community Copyright Term Directive, which extended the copyright term from the life of the author plus fifty years to the life of the author plus seventy years.<sup>199</sup> This directive, in turn, precipitated a similar extension of the copyright term in the United States—through the Sonny Bono Copyright Term Extension Act.<sup>200</sup>

## 2. *Non-Belligerent States*

Unlike countries involved in an armed conflict, countries not directly involved will need very different options. Even though Article 73 of the TRIPS Agreement is not limited to measures “taken in time of war” and allows a WTO member to “pursu[e] . . . its obligations under the United Nations Charter for the maintenance of international peace and security,”<sup>201</sup> it is unclear whether the provision would cover measures taken by countries not directly involved in an armed conflict, such as the issuance of compulsory licenses. In those countries, it is also very likely that policymakers, politicians, and the public at large will find immature the creation of a patent pool to provide assistance to the war effort. If the arrangement is mandatory, such an arrangement could even attract legal challenges based on claims of government takings.<sup>202</sup>

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World Wars); Paul Edward Geller, *Zombie and Once-Dead Works: Copyright Retroactivity After the E.C. Term Directive*, 18 ENT. & SPORTS LAW. 7, 7 (2000) (“In some countries, this term was lengthened by wartime extensions, for example, six years in Italy. Then Germany, in its 1965 Copyright Act, extended the copyright term to life plus 70 years. This term provided the model that the E.C. Term Directive later followed for all E.C. copyright terms.” (footnotes omitted)); Silke von Lewinski, *The EC Duration Directive: An Example of the Complexity of EC Copyright Harmonization*, in 4 INTELLECTUAL PROPERTY AND INFORMATION WEALTH: ISSUES AND PRACTICES IN THE DIGITAL AGE 257, 274 (Peter K. Yu ed., 2007) (noting “an extension of the term of protection due to wartime”).

199. Council Directive 93/98/EEC, 1993 O.J. (L 290) 9.

200. Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified as amended at 17 U.S.C. § 304) (extending the U.S. copyright term from the life of the author plus fifty years to the life of the author plus seventy years, partly to harmonize the U.S. term with that of the European Union); see also *Eldred v. Ashcroft*, 537 U.S. 186, 196 (2003) (stating that the new U.S. standard of the life of the author plus seventy years “harmonizes the baseline United States copyright term with the term adopted by the European Union in 1993”).

201. TRIPS Agreement, *supra* note 20, art. 73(b)(iii), (c).

202. For discussions of government takings in the intellectual property context under U.S. law, see generally Daniel R. Cahoy, *Treating the Legal Side Effects of Cipro®: A Reevaluation of Compensation Rules for Government Takings of Patent Rights*, 40 AM. BUS. L.J. 125 (2002); Thomas F. Cotter, *Do Federal Uses of Intellectual Property Implicate the Fifth Amendment?*, 50

Nevertheless, based on the recent developments surrounding the Russo-Ukrainian War, several options immediately come to mind. This section discusses these options in turn.

*Improved Intellectual Property Enforcement.* The Russo-Ukrainian War, along with the adoption of Decree 299, raised concern about the potential outflow of pirated and counterfeit goods from Russia—through both online and offline channels.<sup>203</sup> Before the war, the Office of the United States Trade Representative (USTR) had already repeatedly documented the problems with pirated goods from Russia in its Section 301 reports—with examples such as the delivery of pirated music and movies through Flvto, MP3juices, Rapidgator, RuTracker, Sci-Hub, VKontakte, and other streaming or file-sharing platforms.<sup>204</sup> The recent conflict suggests that the problem can only grow. Because the sales of pirated and counterfeit goods can be highly lucrative,<sup>205</sup> the need to obtain resources for the war effort and to respond to sanctions imposed by the international community may spark increased production of these goods.

In these circumstances, it will be important for countries to improve their enforcement of intellectual property rights in relation to products originating from Russia as well as those including Russian-made components but originating elsewhere. With respect to online pirated content, countries could also consider introducing site-blocking measures or strengthening what some policymakers and commentators have called “internet border control.”<sup>206</sup> As the

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FLA. L. REV. 529 (1998); Shubha Ghosh, *Toward a Theory of Regulatory Takings for Intellectual Property: The Path Left Open After College Savings v. Florida Prepaid*, 37 SAN DIEGO L. REV. 637 (2000).

203. See *supra* text accompanying notes 112–113.

204. See OFF. OF THE U.S. TRADE REPRESENTATIVE, 2021 REVIEW OF NOTORIOUS MARKETS FOR COUNTERFEITING AND PIRACY 24, 25, 28, 30–31, 35 (2021); see also OFF. OF THE U.S. TRADE REPRESENTATIVE, 2021 SPECIAL 301 REPORT 55 (2021) (“Inadequate and ineffective protection of copyright, including with regard to online piracy, continues to be a significant problem, damaging both the market for legitimate content in Russia as well as in other countries.”).

205. For discussions of trade in pirated and counterfeit goods, see generally MOISÉS NAÍM, *ILLCIT: HOW SMUGGLERS, TRAFFICKERS, AND COPYCATS ARE HIJACKING THE GLOBAL ECONOMY* 109–30 (2005); TIM PHILLIPS, *KNOCKOFF: THE DEADLY TRADE IN COUNTERFEIT GOODS* (2005).

206. Peter K. Yu, *A Hater’s Guide to Geoblocking*, 25 B.U. J. SCI. & TECH. L. 503, 516 (2019) [hereinafter Yu, *Geoblocking*]; see also INTERNET POL’Y TASK FORCE, U.S. DEP’T OF COM., *COPYRIGHT POLICY, CREATIVITY, AND INNOVATION IN THE DIGITAL ECONOMY* 62–64 (2013) (discussing website blocking).

Internet Policy Task Force of the U.S. Department of Commerce observed in its green paper, “[r]estricting U.S. access to foreign-based websites dedicated to piracy could serve to reduce infringing traffic.”<sup>207</sup> A good example is the live blocking orders issued by then Justice (now Lord Justice) Richard Arnold in *The Football Association Premier League Ltd v. British Telecommunications PLC*.<sup>208</sup> Although these orders have raised difficult questions in relation to freedom of expression and cybersecurity,<sup>209</sup> the current state of technology allows more careful tailoring of site-blocking measures to platforms actively distributing pirated and counterfeit goods and services.<sup>210</sup>

*Information Dissemination.* The need for up-to-date information represents another major concern among intellectual property rights holders in countries that are not directly involved in an armed conflict but have imposed sanctions on belligerent states. Shortly after the U.S. government had imposed sanctions on Russia,<sup>211</sup> many U.S. rights holders were confused over what they could still do under the new sanctions, such as whether they could file applications, pay related fees, and secure renewal of their intellectual property rights. They did not receive more clarification until after the U.S. Treasury Department had issued General License No. 31.<sup>212</sup>

This General License authorizes U.S. intellectual property rights holders to do the following:

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207. INTERNET POL’Y TASK FORCE, *supra* note 206, at 62.

208. *The Football Ass’n Premier League Ltd v. British Telecomms. PLC* [2017] EWHC 480 (Ch) [24] (Eng.) (issuing “a ‘live’ blocking order which only has effect at the times when live Premier League match footage is being broadcast”); *see also* Yu, *Geoblocking*, *supra* note 206, at 517 (discussing the issuance of live blocking injunctions in *Premier League*).

209. *See* INTERNET POL’Y TASK FORCE, *supra* note 206, at 64 (noting concerns about selecting copyright enforcement tools that would reduce freedom of expression, increase cybersecurity risks, and undermine innovation); Peter K. Yu, *Digital Copyright Enforcement Measures and Their Human Rights Threats*, in RESEARCH HANDBOOK ON HUMAN RIGHTS AND INTELLECTUAL PROPERTY 455, 466 (Christophe Geiger ed., 2015) (discussing the human rights threats posed by internet border control measures).

210. *See* Yu, *Geoblocking*, *supra* note 206, at 516–19 (discussing the possibility for tailoring geoblocking tools to strike a more appropriate balance between proprietary control and user access).

211. *See Ukraine-/Russia-Related Sanctions*, *supra* note 5.

212. OFF. OF FOREIGN ASSETS CONTROL, DEP’T OF THE TREASURY, GENERAL LICENSE NO. 31 (2022), <https://ofac.treasury.gov/media/922851/download?inline>.

- (1) The filing and prosecution of any application to obtain a patent, trademark, copyright, or other form of intellectual property protection;
- (2) The receipt of a patent, trademark, copyright, or other form of intellectual property protection;
- (3) The renewal or maintenance of a patent, trademark, copyright, or other form of intellectual property protection; and
- (4) The filing and prosecution of any opposition or infringement proceeding with respect to a patent, trademark, copyright, or other form of intellectual property protection, or the entrance of a defense to any such proceeding.<sup>213</sup>

General License No. 31 also includes restrictions on what accounts U.S. intellectual property rights holders could maintain or open and what transactions they could have with Russian financial institutions.<sup>214</sup>

Before the release of General License No. 31, the U.S. Patent and Trademark Office (USPTO), acting on the guidance of the U.S. Department of State, “terminated [its] engagement with officials from Russia’s agency in charge of intellectual property, the Federal Service for Intellectual Property (commonly known as Rospatent), and with the Eurasian Patent Organization.”<sup>215</sup> The USPTO further declined to “grant requests to participate in the Global Patent Prosecution Highway (GPPH) at the USPTO when such requests are based on work performed by Rospatent as an Office of Earlier Examination under the GPPH.”<sup>216</sup> For pending applications, the USPTO would grant only “special status under the GPPH to applications based on work performed by Rospatent” and would “remove that status and . . . no longer [treat them] as GPPH applications . . .”<sup>217</sup> Three months later, the USPTO further notified Rospatent of its “intent to terminate their agreement concerning Rospatent functioning as an International Searching Authority . . . and International Preliminary Examining

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213. *Id.*

214. *Id.*

215. USPTO Statement on Engagement with Russia, the Eurasian Patent Organization, and Belarus, U.S. PAT. & TRADEMARK OFF. (Mar. 22, 2022), <https://www.uspto.gov/about-us/news-updates/uspto-statement-engagement-russia-and-eurasian-patent-organization>.

216. *Id.*

217. *Id.*

Authority . . . for international applications received by the USPTO as a Receiving Office under the Patent Cooperation Treaty.”<sup>218</sup> This arrangement was terminated in December 2022.<sup>219</sup>

*Evidence Collection.* During an armed conflict, intellectual property rights holders need strong support from the government. They need better information about what they could do in response to the conflict and how they could better protect intellectual property rights in both conflict-stricken countries and neighboring jurisdictions. Particularly needed is guidance on what information they will need to preserve when they are subject to arbitrary actions taken by countries involved in an armed conflict, such as the confiscation of their intellectual property or the suspension of their intellectual property rights without compensation.<sup>220</sup> After all, if dispute resolution is to be pursued during or after the conflict at either the state-to-state level (such as at the WTO) or via the ISDS mechanism under international investment agreements,<sup>221</sup> the complainant bears the burden of production to substantiate its claims.

One may recall the USTR’s repeated requests to U.S. industries for evidence that could help substantiate its claims during the filing of its first TRIPS complaint against China.<sup>222</sup> Despite this effort, the

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218. *Update on Termination of Rospatent as an ISA and IPEA for International Applications*, U.S. PAT. & TRADEMARK OFF. (June 1, 2022), <https://www.uspto.gov/about-us/news-updates/update-termination-rospatent-isa-and-ipea-international-applications>.

219. *Id.*

220. As one law firm advised shortly after the outbreak of the Russo-Ukrainian War:

[C]ompanies should begin compiling and preserving all materials relating to communications with Russian government officials, documents relating to the ownership and corporate structure of their foreign investment, to operations and profitability, and to insurance carriers and other coverage. Companies should also compile and preserve inventories of all assets currently in Russian and/or Ukrainian territories, and record and preserve contemporaneous notes of all developments. To the extent possible, such information should be stored in or at least accessible from a location outside of the territories of Russia and Ukraine.

*Russia and Ukraine: The Next Wave of International Disputes*, CROWELL & MORING LLP (Mar. 18, 2022), <https://www.crowell.com/en/insights/client-alerts/russia-and-ukraine-the-next-wave-of-international-disputes>.

221. See *supra* text accompanying notes 87–89.

222. See Identification of Countries Under Section 182 of the Trade Act of 1974: Request for Public Comment on Out-of-Cycle Review of the People’s Republic of China, 69 Fed. Reg. 74561-01 (Dec. 14, 2004) (providing a notice that requested public comments in the USTR’s section 301 review of countries); Request for Comments and Notice of Public Hearing Concerning China’s Compliance with WTO Commitments, 70 Fed. Reg. 44714 (Aug. 3, 2005)

USTR did not receive as much information as it needed from the industries. Although the United States went ahead with filing the complaint in April 2007,<sup>223</sup> the WTO panel eventually found the evidence supplied by the United States insufficient to “demonstrate what constituted ‘a commercial scale’ in the specific situation of China’s marketplace.”<sup>224</sup> The United States therefore failed to substantiate its claim regarding the inconsistency of the high thresholds for criminal procedures and penalties in China with the TRIPS Agreement.<sup>225</sup> In view of the need for evidence and the challenges rights holders and their governments will face in the absence of such evidence, it will be important for businesses and individuals that have been affected by an armed conflict to preserve evidence needed to substantiate complaints they and their governments will file during or after the conflict.

### B. International Mechanisms

While countries could introduce proactive measures independently at the domestic level to respond to the disruption caused by an armed conflict, they will perform better by simultaneously introducing those measures and collaborating with other members of the international community. A case in point is the need for strengthened intellectual property enforcement, discussed in the previous section. Intellectual property enforcement is one area that can greatly benefit from international cooperation. Such cooperation was indeed the reason behind developed countries’ active push to increase intellectual property enforcement standards through international negotiations and the development of new enforcement standards in bilateral, regional, and plurilateral trade agreements,<sup>226</sup> including most notably the

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(providing another notice requesting for public comments concerning China’s compliance with its WTO commitments).

223. Request for Consultations by the United States, *China – Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, WT/DS362/1 (Apr. 16, 2007).

224. *China – Intellectual Property Rights* Panel Report, *supra* note 46, ¶¶ 7.614, 8.1(c).

225. *Id.* ¶ 8.1(c). For discussions of the WTO panel decision in relation to the United States’ claim on criminal thresholds, see generally Peter K. Yu, *The TRIPS Enforcement Dispute*, 89 NEB. L. REV. 1046, 1056–69, 1083–91 (2011); Peter K. Yu, *TRIPS Enforcement and Developing Countries*, 26 AM. U. INT’L L. REV. 727, 731–34 (2011).

226. For collections of articles on the increasing push for higher international intellectual property enforcement standards, see generally CRIMINAL ENFORCEMENT OF

Anti-Counterfeiting Trade Agreement.<sup>227</sup> International cooperation is particularly needed, considering that the TRIPS Agreement requires countries to focus on enforcement obligations relating to only imports, not exports.<sup>228</sup> Given this arrangement, each WTO member can decide for itself whether the enforcement levels should be raised to also cover exports.

Although enforcement is one area that needs attention from the international intellectual property community, there are many other areas that can benefit from such cooperation, especially in the wake of or in relation to an armed conflict. After all, countries often impose sanctions collectively in the hope that those sanctions could help quickly end a conflict.

In the intellectual property arena, the WTO and its Council for Trade-Related Aspects of Intellectual Property Rights (TRIPS Council) provide good examples of institutions that could facilitate international cooperation.<sup>229</sup> Article 68 of the TRIPS Agreement

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INTELLECTUAL PROPERTY: A HANDBOOK OF CONTEMPORARY RESEARCH (Christophe Geiger ed., 2012); INTELLECTUAL PROPERTY ENFORCEMENT: INTERNATIONAL PERSPECTIVES (Li Xuan & Carlos Correa eds., 2009); RESEARCH HANDBOOK ON CROSS-BORDER ENFORCEMENT OF INTELLECTUAL PROPERTY (Paul Torremans ed., 2014); THE ACTA AND THE PLURILATERAL ENFORCEMENT AGENDA: GENESIS AND AFTERMATH (Pedro Roffe & Xavier Seuba eds., 2014); THE ENFORCEMENT OF INTELLECTUAL PROPERTY RIGHTS: COMPARATIVE PERSPECTIVES FROM THE ASIA-PACIFIC REGION (Christoph Antons ed., 2011).

227. Anti-Counterfeiting Trade Agreement, 50 I.L.M. 243 (2011).

228. See TRIPS Agreement, *supra* note 20, art. 51 (“Members may . . . provide for corresponding procedures concerning the suspension by the customs authorities of the release of infringing goods destined for exportation from their territories.”); *China—Intellectual Property Rights* Panel Report, *supra* note 46, ¶ 7.224 (“The third sentence of Article 51 provides for an optional extension to ‘infringing goods destined for exportation’ from a Member’s territory.”).

229. The United Nations Educational, Scientific and Cultural Organization (UNESCO) is another possibility, especially in the copyright area. See Peter K. Yu, *A Tale of Two Development Agendas*, 35 OHIO N.U. L. REV. 465, 487 (2009) [hereinafter Yu, *Development Agendas*] (“As the administrator of the [Universal Copyright Convention], UNESCO’s importance in the copyright area speaks for itself.”); see also Sisule F. Musungu & Graham Dutfield, *Multilateral Agreements and a TRIPS-Plus World: The World Intellectual Property Organisation (WIPO) 19–20* (Quaker United Nations Off., TRIPS Issues Paper No. 3, 2003) (“UNESCO . . . started off as a potentially important forum for defending and promoting developing countries’ interests in the copyright area—ensuring that copyright standards were consistent with the needs of educational and scientific users of information . . .”). Nevertheless, UNESCO has been mostly sidelined following the United States’ withdrawal from the organization in 1984. Yu, *Development Agendas*, *supra*, at 488. The Universal Copyright Convention, which UNESCO administered, has also become mostly irrelevant today. Peter K. Yu, *The U.S.-China Forced Technology Transfer Dispute*, 52 SETON HALL L. REV.

states that this Council “shall monitor the operation of this Agreement and, in particular, Members’ compliance with their obligations hereunder, and shall afford Members the opportunity of consulting on matters relating to the trade-related aspects of intellectual property rights.”<sup>230</sup> Since its creation, the TRIPS Council has addressed issues ranging from the discussion of increased intellectual property enforcement standards<sup>231</sup> to the introduction of waivers to address the lack of access to health products and technologies during the COVID-19 pandemic.<sup>232</sup> Nevertheless, as we have learned the hard way from the debate on the COVID-19 TRIPS waiver,<sup>233</sup> the TRIPS Council may not be well-equipped to address politically contentious issues. If addressing a global health crisis is deemed politically divisive, one can only imagine how much more divisive the discussion of matters relating to an armed conflict will be, especially when major world powers are involved on both sides of the conflict.

WIPO provides another good forum for exploring international cooperation. During the COVID-19 pandemic, for instance, the organization introduced the COVID-19 IP Policy Tracker to “provid[e] information on measures adopted by [intellectual property] offices in response to the COVID-19 pandemic, such as the extension of deadlines[, as well as]... information on legislative and regulatory measures for access and voluntary actions.”<sup>234</sup> Collaborating with the WHO and the WTO, WIPO also

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1003, 1030 (2022) [hereinafter Yu, *Forced Technology Transfer*]; see also Jørgen Blomqvist, *Universal Copyright Convention – RIP*, IPKAT (Dec. 22, 2021), <https://ipkitten.blogspot.com/2021/12/guest-post-universal-copyright.html> (suggesting the Convention’s demise following the recent accession to the Berne Convention by Cambodia, the only member of the former that had not joined the latter until then).

230. TRIPS Agreement, *supra* note 20, art. 68.

231. See Peter K. Yu, *TRIPS and Its Achilles’ Heel*, 18 J. INTELL. PROP. L. 479, 505–08, 514–15, 518–21 (2011) (discussing the debate at the TRIPS Council on the need for and appropriateness of higher international intellectual property enforcement standards); see also Peter K. Yu, *Are Developing Countries Playing a Better TRIPS Game?*, 16 UCLA J. INT’L L. & FOREIGN AFFS. 311, 329–32 (2011) (discussing the developing countries’ participation in the TRIPS Council).

232. See Yu, *Deferring Intellectual Property Rights*, *supra* note 92, at 492–94, 513–16 (recounting the negotiation of the proposed COVID-19 TRIPS waiver at the TRIPS Council).

233. *TRIPS Waiver Proposal*, *supra* note 160; *Revised TRIPS Waiver Proposal*, *supra* note 160.

234. *WIPO’s COVID-19 Related Services and Support*, WORLD INTELL. PROP. ORG., <https://www.wipo.int/covid-19/en#/covid19-policy-tracker/ipo-operations> (last visited

published a revised trilateral study on access to medical technologies and innovation<sup>235</sup> and held a joint technical symposium in December 2022 to “examine the challenges of the COVID-19 pandemic and discuss possible ways forward within the health, [intellectual property,] and trade frameworks.”<sup>236</sup>

From an institutional standpoint, WIPO may not be in as strong a position as the WTO if the intellectual property standards to be developed in response to an armed conflict require a strong dispute settlement mechanism.<sup>237</sup> Nevertheless, WIPO can provide a helpful forum for exploring what international cooperation can be fostered in the intellectual property arena to respond to these conflicts. The organization also has specialized expertise relating to not only intellectual property matters but also dispute resolution arrangements.<sup>238</sup>

Given developing countries’ limited success in securing adjustments to international intellectual property standards during the COVID-19 pandemic,<sup>239</sup> it is understandable why there may be reservations about the ability of both the TRIPS Council and WIPO to provide a satisfactory response in the event of an armed conflict. Even if countries are more open to developing a solution or fostering a compromise in these circumstances than during the COVID-19 pandemic, it remains to be seen whether the TRIPS Council or WIPO can develop a response quickly enough. While the WTO membership managed to settle on a solution in August

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Oct. 24, 2023); *see also* Press Release, World Intell. Prop. Org., WIPO Launches Tool to Track IP Policy Information in Member States During COVID-19 Pandemic (May 5, 2020), [https://www.wipo.int/pressroom/en/articles/2020/article\\_0010.html](https://www.wipo.int/pressroom/en/articles/2020/article_0010.html) (announcing the launch of the COVID-19 IP Policy Tracker).

235. WORLD HEALTH ORG., WORLD INTELL. PROP. ORG. & WORLD TRADE ORG., PROMOTING ACCESS TO MEDICAL TECHNOLOGIES AND INNOVATION: INTERSECTIONS BETWEEN PUBLIC HEALTH, INTELLECTUAL PROPERTY AND TRADE (2d ed. 2020).

236. WHO, WIPO, WTO Joint Technical Symposium on the COVID-19 Pandemic: Response, Preparedness, Resilience, WORLD INTELL. PROP. ORG., <https://www.wipo.int/meetings/en/2022/wipo-wto-who-technical-symposium.html> (last visited Nov. 16, 2023).

237. *See supra* text accompanying notes 55–60.

238. *See* WIPO | ADR, WORLD INTELL. PROP. ORG., <https://www.wipo.int/amc/en/center/index.html> (last visited Oct. 13, 2023) (“The WIPO Arbitration and Mediation Center offers time- and cost-efficient alternative dispute resolution . . . options, such as mediation, arbitration, expedited arbitration, and expert determination to enable private parties to settle their domestic or cross-border commercial disputes.”).

239. *See* Yu, *Ministerial Decision*, *supra* note 160 (discussing the Ministerial Decision as a compromise that pleased neither side).

2003 to combat the access-to-medicines problems relating to the HIV/AIDS, malaria, and tuberculosis pandemics,<sup>240</sup> that solution did not enter into effect until January 2017, more than a decade later.<sup>241</sup> As I noted in an earlier analysis of the proposed COVID-19 TRIPS waiver, there was serious concern that any broader waiver adopted after lengthy negotiation would have been for future pandemics, not COVID-19.<sup>242</sup>

Indeed, if the loss of close to seven million human lives and the global economic costs of tens of trillions of dollars<sup>243</sup> cannot persuade countries to drastically adjust international intellectual property standards, it is unclear how willing they would be to make similar adjustments in the wake of an armed conflict, especially one that does not directly involve the whole world. In view of such reluctance, one cannot help but wonder whether different international mechanisms can be developed to provide the needed response. To the extent that we are concerned about growing geopolitical tensions, it will be worthwhile to start thinking ahead about how we can increase conflict preparedness in the international intellectual property regime, similar to how countries are now looking to the development of a pandemic treaty under the WHO's auspices and other measures to improve pandemic preparedness.<sup>244</sup> Fortunately, most of the actions in

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240. See General Council, *Implementation of Paragraph 6 of the Doha Declaration on the TRIPS Agreement and Public Health*, WTO Doc. WT/L/540 (Sept. 1, 2003) (allowing countries with insufficient or no manufacturing capacity to import generic versions of patented pharmaceuticals).

241. See TRIPS Agreement, *supra* note 20, art. 31bis (allowing countries with insufficient or no manufacturing capacity to import generic versions of patented pharmaceuticals). The amendment protocol entered into effect on January 23, 2017. Press Release, World Trade Org., WTO IP Rules Amended to Ease Poor Countries' Access to Affordable Medicines (Jan. 23, 2017), [https://www.wto.org/english/news\\_e/news17\\_e/trip\\_23jan17\\_e.htm](https://www.wto.org/english/news_e/news17_e/trip_23jan17_e.htm).

242. See Yu, *Critical Appraisal*, *supra* note 160.

243. See Yu, *Deferring Intellectual Property Rights*, *supra* note 92, at 491 n.2 (collecting studies that provide estimates of the global economic toll of the pandemic); WHO *Coronavirus (COVID-19) Dashboard*, WORLD HEALTH ORG., <https://covid19.who.int> (last visited Oct. 13, 2023) (stating the number of human fatalities caused by the COVID-19 pandemic).

244. For discussions of the proposed WHO instrument on pandemic prevention, preparedness, and response, see generally Fernando dos Santos, Caroline B. Ncube & Marisella Ouma, *Intellectual Property Framework Responses to Health Emergencies – Options for Africa*, 118 S. AFR. J. SCI. 12775, at 4 (2022); Obijiofor Aginam, *The Proposed Pandemic Treaty and the Challenge of the South for a Robust Diplomacy* (S. Ctr., SouthViews No. 218, 2021); Germán Velásquez & Nirmalya Syam, *A New WHO International Treaty on Pandemic Preparedness and Response: Can It Address the Needs of the Global South?* (S. Ctr., Policy Brief No. 93, 2021).

relation to an armed conflict that need to be resolved will likely take place after the conflict, not before. Indeed, many U.S. companies did not seek compensation for the government's unauthorized use of their facilities for the war effort until after the Second World War.<sup>245</sup>

Thus, even upon the outbreak of an armed conflict, countries will still have sufficient time to develop an international mechanism to address claims that may arise after the conflict. Even better, there are already precedents concerning how such a mechanism can be developed. For example, the Iran-United States Claims Tribunal was created in 1981 to address claims of U.S. and Iranian nationals that arose out of the seizure of the U.S. embassy in Tehran in November 1979, the related hostage crisis, and the subsequent freezing of Iranian assets by the U.S. government.<sup>246</sup> The U.N. Compensation Commission was also established "in 1991 as a subsidiary organ of the United Nations Security Council . . . to process claims and pay compensation for losses and damage suffered as a direct result of Iraq's unlawful invasion and occupation of Kuwait in 1990–1991."<sup>247</sup>

Apart from institution-based mechanisms, it may be worthwhile to think about whether legal standards and policy measures can be utilized to help compensate those affected by an

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245. As recounted by a former chief of the Patents Division of the Office of the Judge Advocate General:

The last remaining patent liability of the Government arising out of World War I was not settled until December of 1944, rounding out over 26 years of litigation. World War II and the present emergency have left us, as of 15 August 1961, with a total of 74 suits against the Government in the Federal courts for patent infringement and related matters.

George F. Westerman, *Patent Provisions in Defense Contracts*, 44 J. PAT. OFF. SOC'Y 38, 38 (1962) (footnote omitted). For cases involving postwar compensation, see for example, *United States v. Pewee Coal*, 341 U.S. 114 (1951); *Kimball Laundry Co. v. United States*, 338 U.S. 1 (1949); *United States v. Petty Motors Co.*, 327 U.S. 372 (1946); *United States v. General Motors Corp.*, 323 U.S. 373 (1945).

246. *About, IRAN-U.S. CLAIMS TRIBUNAL*, <https://iusct.com/about> (last visited Oct. 13, 2023). For discussions of this tribunal, see generally ALLAHYAR MOURI, *THE INTERNATIONAL LAW OF EXPROPRIATION AS REFLECTED IN THE WORK OF THE IRAN-U.S. CLAIMS TRIBUNAL* (1994); Veijo Heiskanen, *The Doctrine of Indirect Expropriation in Light of the Practice of the Iran-United States Claims Tribunal*, 8 J. WORLD INV. & TRADE 215 (2007); Aniruddha Rajput, *Problems with the Jurisprudence of the Iran-US Claims Tribunal on Indirect Expropriation*, 30 ICSID REV. 589 (2015); Steven R. Swanson, *Iran-U.S. Claims Tribunal: A Policy Analysis of the Expropriation Cases*, 18 CASE W. RESV. J. INT'L L. 307 (1986).

247. *Home, UNITED NATIONS COMP. COMM'N*, <https://uncc.ch/home> (last visited Oct. 13, 2023).

armed conflict. The previous section discussed the extension of intellectual property rights as a possible policy measure in countries directly involved in an armed conflict. Should differing standards be adopted across jurisdictions, those standards will need to be harmonized through international negotiations, such as at WIPO or the WTO.<sup>248</sup> Instead of providing compensation through term extensions in select jurisdictions, such compensation can be advanced through harmonized extensions across the world.

An example of how legal concepts and doctrines can be utilized to help those affected by an armed conflict can be drawn from the lessons provided by South Africa following the end of the apartheid regime.<sup>249</sup> As McDonald's found out the hard way upon entering the South African market, the use of its famous trademarks met major challenges due to its lack of usage of these trademarks during the apartheid era and the prior use by local businesses of the same trademarks in that period.<sup>250</sup> Similar concerns confronted intellectual property rights holders when they sought to make decisions about whether to withdraw from the Russian market following the outbreak of the Russo-Ukrainian War.<sup>251</sup> It will be interesting to see whether they will face challenges similar to those

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248. A case in point is the establishment of a lengthier copyright term under the Berne Convention. Yu, *Marshalling Copyright Knowledge*, *supra* note 41, at 76 ("While Article 7 of the 1908 Berlin Act included an optional requirement that such protection lasts for the life of the author plus fifty years, the 1948 Brussels Act made this requirement mandatory." (footnote omitted)).

249. See Christopher S. Wren, *South Africa Scraps Law Defining People by Race*, N.Y. TIMES, June 18, 1991, at A1 (reporting the repeal of the Population Registration Act by the South African Parliament).

250. See Donald G. McNeil Jr., *South Africa McDonald's Loses Name*, N.Y. TIMES, Oct. 10, 1995, at D4 (reporting a ruling in a lower South African court that McDonald's "had abandoned its trademark by failing to use it since it first registered it in South Africa in 1968" and that "a South African man who owns the Chicken Licken chain . . . and a hamburger stand in Durban . . . has been operating under the name McDonald's since 1978").

251. See *supra* text accompanying notes 7–8. One legal action that received quite some coverage in the early days of the Russo-Ukrainian War is the Russian court's dismissal of a trademark infringement action brought by the U.K.-based owner of Peppa Pig. *Russia Suspending Some IP Rights and Peppa Pig Trade Mark Infringement*, IP HELPDESK (Mar. 17, 2022), [https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/russia-suspending-some-ip-rights-and-peppa-pig-trade-mark-infringement-2022-03-17\\_en](https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/russia-suspending-some-ip-rights-and-peppa-pig-trade-mark-infringement-2022-03-17_en). This decision "was ultimately reversed on appeal, with the Second Appeal Commercial Court recognizing that the Russian national had committed an act of infringement." Little & Imasogie, *supra* note 112, at 318; see also *id.* ("The court ruling . . . reaffirmed Russia's commitment to protecting intellectual property rights as part of its ratification of international treaties.").

of McDonald's in South Africa upon their return to the Russian market after the war.<sup>252</sup>

To alleviate this type of concern, the adjustment to the concept of well-known trademark can be helpful, especially through international norm-setting efforts. Although McDonald's lost its trademark case at the lower court in South Africa, it prevailed before the South African Supreme Court.<sup>253</sup> As the apex court noted, "[A]t least a substantial portion of persons who would be interested in the goods or services provided by McDonald's know its name, which is also its principal trade mark."<sup>254</sup> Finding that the trademark of the fast-food giant was well-known despite the fact that it "ha[d] not . . . carried on business in South Africa," the court agreed with McDonald's that the use by the local companies "Joburgers and Dax in relation to the same type of fast food business as that conducted by McDonald's . . . would cause deception or confusion within the meaning of sec 35(3) of the new act."<sup>255</sup>

The approach taken by the South African Supreme Court was consistent with Article 2(2)(b) of the WIPO Joint Recommendation Concerning Provisions on the Protection of Well-Known Marks, which provides: "Where a mark is determined to be well known in at least one relevant sector of the public in a Member State, the mark shall be considered by the Member State to be a well-known mark."<sup>256</sup> One could certainly debate the strengths and weaknesses of an approach privileging the protection of well-known trademarks, especially when the mark is not well-known across all segments of the local population. Nevertheless, the challenges McDonald's faced in the mid-1990s upon its entry into the South

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252. As two commentators observe:

Russia holds out hope that some of these exiting businesses will one day return, so it would seem counterproductive for Russia to antagonize McDonald's unnecessarily by simply rotating the golden arches or selling the business without McDonald's permission. Its deal with McDonald's reflects Russia's desire for foreign companies, like McDonald's, to return, as it includes an option for McDonald's to buy back its restaurants in fifteen years. However, McDonald's has stated that it will not buy back its former franchises in Russia.

Little & Imasogie, *supra* note 112, at 346-47 (footnotes omitted).

253. *McDonald's Corp. v. Joburgers Drive-Inn Restaurant (Pty) Ltd.* 1997 (1) SA 1 (S. Afr.).

254. *Id.* at 65.

255. *Id.* at 65-66.

256. WORLD INTEL. PROP. ORG., JOINT RECOMMENDATION CONCERNING PROVISIONS ON THE PROTECTION OF WELL-KNOWN MARKS art. 2(2)(c), at 10 (1999).

African market illustrates well the need for domestic courts and the international community to think about whether existing legal concepts and doctrines can be adjusted to protect those intellectual property rights holders that are unable to take advantage of the market as a result of an armed conflict, economic sanctions, or other circumstances beyond their control.

### *C. Academic and Policy Research*

As Part I noted, there is very limited research concerning wartime and postwar protection of intellectual property rights, including research on what obligations the different parties have under international intellectual property and investment agreements and what proactive measures they can introduce during and in relation to an armed conflict or as part of the postwar rebuilding effort. This section therefore calls for greater effort to develop academic and policy research in this area.

In developing such research, there is a tendency to consider war-related intellectual property challenges as part of a single debate. However, as *Table 1* shows below, these challenges are better analyzed in phases and according to the variegated role, or roles, each state actor will play. What is needed during the war is not the same as what is needed shortly after. What a war-torn country needs in the first few years of the rebuilding effort can also differ quite substantially from what it needs in the long term. In addition, as this Article has shown, the obligations of countries involved in an armed conflict, and the domestic measures and international mechanisms they need, are significantly different from those needed by countries not directly involved in the conflict, in particular those that have imposed sanctions on belligerent states. In relation to the Russo-Ukrainian War, for instance, the box for the United States contains very different policy choices from the boxes for either Russia or Ukraine.

*Table 1: Matrix for Research on Wartime and Postwar Protection of Intellectual Property Rights*

	Party to an Armed Conflict	Sanctioning State Not Directly Involved in the Conflict	Neutral Party
Prewar			
Wartime			
Postwar (Short-Term)			
Postwar (Long-Term)			

Apart from the variegated policy options in each box in *Table 1*, countries may face different dilemmas within the box. For example, countries involved in an armed conflict may be tempted to introduce compulsory licenses or undertake special arrangements to ensure better utilization of intellectual property rights to promote the war effort. Yet they may also be concerned about how the weakening of foreign intellectual property rights would affect the support they receive from their allies or other members of the international community. In addition, they may have other considerations. For instance, having assumed candidacy for European Union membership in June 2022,<sup>257</sup> Ukraine may be eager to think ahead about how it should upgrade its intellectual property system to ensure quick admission to the European Union after the war.

A similar dilemma confronts countries that are not directly involved in an armed conflict. The European Union and the United States have provided considerable support to Ukraine during the

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257. See *Ukraine*, COUNCIL OF THE EU & THE EUROPEAN COUNCIL, <https://www.consilium.europa.eu/en/policies/enlargement/ukraine> (last visited Oct. 13, 2023) (“Ukraine applied for EU membership in February 2022 and was granted EU candidate status in June 2022.”).

Russo-Ukrainian War.<sup>258</sup> Yet it is unclear whether they will be willing to support efforts that lower the protection of intellectual property rights in Ukraine or at the global level, as opposed to providing more financial and military aid during and after the war. In fact, even in the face of a global economic fallout and millions of lost human lives, the United States only offered lukewarm support to the proposed COVID-19 TRIPS waiver in the narrow area of vaccines.<sup>259</sup> Meanwhile, the European Union, with strong influence from select member states, remained a staunch opponent to that proposal until the end of the waiver negotiations.<sup>260</sup>

After an armed conflict is over, countries will face very different dilemmas. Consider, for example, countries seeking to rebuild post-conflict or those helping with this rebuilding effort. Should they focus on short-term reforms, which may require the (re)development of intellectual property infrastructure<sup>261</sup> and greater adjustments to intellectual property rights, similar to what is needed during wartime? Or should they focus on long-term reforms—in particular, ways to harness the intellectual property system to help strengthen postwar economic development?

To the extent that these countries are willing to introduce postwar extensions to address wartime suspension of intellectual

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258. See Jonathan Masters & Will Merrow, *How Much Aid Has the U.S. Sent Ukraine? Here Are Six Charts.*, COUNCIL ON FOREIGN RELS. (Sept. 21, 2023), <https://www.cfr.org/article/how-much-aid-has-us-sent-ukraine-here-are-six-charts> (providing charts comparing the support provided by the United States and other countries to Ukraine).

259. See Press Release, Off. of the U.S. Trade Representative, Statement from Ambassador Katherine Tai on the Covid-19 Trips Waiver (May 5, 2021), <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2021/may/statement-ambassador-katherine-tai-covid-19-trips-waiver> (“The Administration believes strongly in intellectual property protections, but in service of ending this pandemic, supports the waiver of those protections for COVID-19 vaccines.”).

260. See D. Ravi Kanth, *EU, Switzerland, UK Continue Opposition, amid Support for TRIPS Waiver*, TWN INFO SERV. ON WTO & TRADE ISSUES (Sept. 16, 2021), <https://www.twi.my/title2/wto.info/2021/ti210913.htm> (reporting that “the European Union led by Germany, Switzerland, and the United Kingdom . . . seem determined to undermine an expeditious decision on the temporary waiver for combating the COVID-19 pandemic”); see also Ashleigh Furlong, Sarah Anne Aarup & Samuel Horti, *Who Killed the COVID Vaccine Waiver?*, POLITICO (Nov. 10, 2022), <https://www.politico.eu/article/covid-vaccine-poor-countries-waiver-killed> (providing an investigative report on the lobbying against the proposed COVID-19 TRIPS waiver).

261. See Walter S. Bleston, *On the Patent Law of Post-War Germany*, 32 J. PAT. OFF. SOC’Y 300, 300 (1950) (discussing the closure of the German patent office from 1945 to 1948, following the end of the Second World War).

property rights, how should those extensions be designed? Are there enough empirical data suggesting an optimal duration of such extensions? Should the term of intellectual property rights be extended in the first place—and if so, are there unintended consequences?<sup>262</sup> If countries are willing to work together to facilitate postwar extensions at the global level, what will a harmonized international framework for such an extension look like?

Finally, can postwar remedies take into account the interactions between different boxes in the research matrix? Will those boxes overlap—and if so, to what extent? In a recent article, I advanced a proposal for the deferral of intellectual property rights during a major global pandemic, such as COVID-19.<sup>263</sup> While the proposal calls for the suspension of intellectual property rights during the pandemic, similar to the proposed COVID-19 TRIPS waiver, that proposal extends the suspended rights after the pandemic to provide compensation to affected rights holders.<sup>264</sup> Can a similar two-stage arrangement be introduced to help address the differing needs during an armed conflict and the postwar rebuilding effort?

All of these interesting questions are worth exploring should more academic and policy research be undertaken on wartime and postwar protection of intellectual property rights. The next Part will discuss some deeper theoretical questions generated by this debate, which will provide additional fodder for future research.

#### IV. DEEPER THEORETICAL QUESTIONS

The discussion in this Article has so far been descriptive, interpretive, and prescriptive. This Part turns to deeper theoretical questions about innovation theory, intellectual property law, and international law. While this Article focuses on the challenges posed by armed conflicts to the intellectual property system—at both the domestic and international levels—the analysis can provide helpful lessons on the ongoing and future development of both intellectual property law and international law.

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262. See Guy Pessach & Michal Shur-Ofry, *Copyright and the Holocaust*, 30 YALE J.L. & HUMAN. 121, 160–71 (2018) (discussing how copyright protection could stifle the collection or preservation of wartime memories and recommending copyright reforms to increase access to Holocaust-related works).

263. Yu, *Deferring Intellectual Property Rights*, *supra* note 92.

264. See *id.* at 532–49 (laying out the proposal).

### A. Innovation Theory

In the past few years, countries have increasingly embraced a national security frame to analyze intellectual property law and policy.<sup>265</sup> Taking note of this emergent perspective, commentators have discussed the implications of this new approach. For instance, Charles Duan laments how the push to strengthen patent protection to safeguard national security could backfire on the intended goals by upsetting the balance between patent incentives and the value of competition.<sup>266</sup> Debora Halbert warns that the increasing focus on intellectual property theft as a national security issue could impoverish our understanding of information exchange on the internet and on the future development of U.S. diplomatic relations around the globe.<sup>267</sup> Drawing on research in political science and international political economy, Sapna Kumar examines how changes to U.S. patent policy in recent years have ushered in economic nationalism.<sup>268</sup>

The push to harness the intellectual property system to safeguard national security tends to create an impulse to strengthen intellectual property protection and enforcement.<sup>269</sup> Yet the continuous tightening of intellectual property standards does not always generate ideal results. For example, Petra Moser and Alessandra Voena show that the issuance of compulsory licenses to foreign technologies after the First World War under the Trading with the Enemy Act led to an increase in domestic invention in the United States by at least twenty percent.<sup>270</sup> Professor Duan also notes that the development of torpedoes, military aircrafts, anthrax

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265. For discussions of the linkage between intellectual property and national security, see generally Charles Duan, *Of Monopolies and Monocultures: The Intersection of Patents and National Security*, 36 SANTA CLARA HIGH TECH. L.J. 369 (2020); Debora Halbert, *Intellectual Property Theft and National Security: Agendas and Assumptions*, 32 INFO. SOC'Y 256 (2016); Sapna Kumar, *Innovation Nationalism*, 51 CONN. L. REV. 205 (2019).

266. Duan, *supra* note 265.

267. Halbert, *supra* note 265.

268. Kumar, *supra* note 265.

269. See Duan, *supra* note 265, at 373 (noting the view that “maintaining patent protection or even strengthening it ought to further national security; limiting patent rights would conversely ‘harm U.S. national security’”).

270. See Petra Moser & Alessandra Voena, *Compulsory Licensing: Evidence from the Trading with the Enemy Act*, 102 AM. ECON. REV. 396, 424 (2012) (“In [U.S. Patent and Trademark Office] subclasses, where at least one enemy-owned patent was licensed to a domestic firm under the [Trading with the Enemy Act], domestic patenting increased by about 20 percent after the [Act] (compared with subclasses that were not affected).”).

treatments, and cybersecurity measures has revealed the problems created by an out-of-balance intellectual property system.<sup>271</sup> Section III.A already discussed the need to establish the Manufacturer's Aircraft Association during the First World War to pool together patents related to aircrafts.<sup>272</sup> While rivalry in the private sector slowed down the development of military aircrafts, litigation between the government and the private sector hindered the development of torpedoes in the United States.<sup>273</sup> In the area of cybersecurity, Professor Duan has also made a convincing case about how stronger patent protection could stifle competition and thereby facilitate the development of "a 'monoculture' of single-vendor products" that would make U.S. computer systems more vulnerable to cybersecurity attacks.<sup>274</sup>

More recently, during the COVID-19 pandemic, we have seen an outpouring of public resources to provide the stimuli needed to get vaccine manufacturers to speed up their development and manufacturing processes.<sup>275</sup> As Siva Thambisetty, Aisling McMahon, Luke McDonagh, Hyo Yoon Kang, and Graham Dutfield recount:

The global public sector has spent at least €93 billion on the development of COVID-19 vaccines and therapeutics—including over €88 billion on vaccines. Detailed analysis shows that public funding accounted for 97–99.0 per cent of the funding towards the R&D of ChAdOx, the underlying technology of the Oxford-AZ vaccine. The Moderna vaccine, which is sometimes referred to as the NIH-Moderna vaccine due to co-inventorship by [National Institutes of Health] scientists, was almost entirely

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271. Duan, *supra* note 265, at 388–99.

272. See *supra* text accompanying note 186.

273. See *E.W. Bliss Co. v. United States*, 253 U.S. 187 (1920) (adjudicating the patent dispute between the U.S. government and E.W. Bliss Company); *E.W. Bliss Co. v. United States*, 248 U.S. 37 (1918) (same); Duan, *supra* note 265, at 388 (noting that two decades-long litigation between E.W. Bliss Company and the U.S. government and lamenting how such litigation "likely consumed resources from both sides that could otherwise have been put to innovation"). See generally KATHERINE C. EPSTEIN, *TORPEDO: INVENTING THE MILITARY-INDUSTRIAL COMPLEX IN THE UNITED STATES AND GREAT BRITAIN* 132–82 (2014) (discussing the U.S. government's torpedo-related patent infringement lawsuits against E.W. Bliss Company and Electric Boat Company).

274. Duan, *supra* note 265, at 396–99.

275. See, e.g., LAWRENCE O. GOSTIN, *GLOBAL HEALTH SECURITY: A BLUEPRINT FOR THE FUTURE* 202 (2021); E. Richard Gold, *What the COVID-19 Pandemic Revealed About Intellectual Property*, 40 *NATURE BIOTECHNOLOGY* 1428, 1428 (2022); Sarah Joseph & Gregory Dore, *Vaccine Apartheid: A Human Rights Analysis of COVID-19 Vaccine Inequity*, 31 *J. TRANSNAT'L L. & POL'Y* 145, 174 (2021–22); Thambisetty et al., *supra* note 174, at 391–92.

funded by the US government, which provided \$10 billion. BioNTech is a spin-off company of the public Johannes Gutenberg-University Mainz and it received more than \$445 million from the German government.<sup>276</sup>

It is therefore no surprise that WIPO, in its latest *World Intellectual Property Report*, underscores the important role government policy can play in setting the direction of innovation, especially when confronted with “‘grand challenges,’ such as global warming and future pandemics.”<sup>277</sup> The report states further that “when the needs of society and the goals of for-profit private companies are misaligned, governments can, and probably should, step in.”<sup>278</sup> Such intervention is particularly desirable “when the social returns to or benefits from addressing society’s needs . . . far outweigh the private returns to continuing with business as usual.”<sup>279</sup>

To be sure, many products and technologies used during the COVID-19 pandemic were repurposed from prior research, including research relating to the Severe Acute Respiratory Syndrome (SARS).<sup>280</sup> Given how much of this prior research was developed against a background of strong intellectual property rights, it is hard to ignore the contributions provided by these rights.<sup>281</sup> Nevertheless, regardless of the view one holds about the

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276. Thambisetty et al., *supra* note 174, at 391–92 (footnotes omitted); see also Gold, *supra* note 275, at 1428 (“Although companies played a critical role in vaccine and antiviral development, they financed their work through the prospect of large procurement contracts rather than the prospect of [intellectual property].”).

277. WORLD INTELL. PROP. ORG., WORLD INTELLECTUAL PROPERTY REPORT 2022: THE DIRECTION OF INNOVATION 15 (2022).

278. *Id.* at 78.

279. *Id.*

280. See WORLD INTELL. PROP. ORG., COVID-19-RELATED VACCINES AND THERAPEUTICS: PRELIMINARY INSIGHTS ON RELATED PATENTING ACTIVITY DURING THE PANDEMIC 7 (2022), <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-1075-en-covid-19-related-vaccines-and-therapeutics.pdf> (stating that “[m]ost COVID-19 drug candidates are repurposed”); *id.* at 20 (“Companies including Moderna, BioNTech and Curvac designed their first generation of COVID vaccines using 2P S protein as antigen, based on the data from other betacoronavirus, SARS and MERS [the Middle East Respiratory Syndrome], which resulted in higher protein (antigen) expression and elicited potent immune responses . . . .”); Mercurio, *WTO Waiver*, *supra* note 181, at 17 (discussing the incentives needed to support the development of synthetic mRNA technology, which dates back to more than a decade before the COVID-19 pandemic).

281. See Yu, *Deferring Intellectual Property Rights*, *supra* note 92, at 506–07 (“[M]any of those pre-pandemic products and technologies used to accelerate our effort to combat COVID-19, including those relating to SARS, were developed in an environment supported by strong intellectual property rights.”).

contributions of the intellectual property system to the development of COVID-19 vaccines, there is no denying that governments and the public at large are uncomfortable with using that system alone to generate the needed incentives. The substantial injection of public resources speaks for itself. In a review of COVID-19-related research-and-development or procurement contracts involving the U.S. government, Knowledge Ecology International found that fifty-four out of sixty-two contracts “included the broadest authorization for non-voluntary use of patented inventions, and five included a more limited authorization.”<sup>282</sup> Even those staunchly opposing the proposed COVID-19 TRIPS waiver often emphasized the importance of intellectual property rights for future innovation, such as for the use of mRNA technology to treat cancer.<sup>283</sup> Meanwhile, commentators have pointed out that vaccine development is one area where intellectual property rights provide inadequate incentives.<sup>284</sup>

In sum, one must think more about the ideal innovation environment for developing products and technologies that would effectively respond to a major world crisis—be it a global pandemic or an armed conflict. If the protection of intellectual property rights is not considered attractive when we are confronted with such a

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282. James Love, *KEI Review of 62 COVID 19 Contracts Reveals 59 Authorizations for Non-Voluntary Use of Third Party Patents Under 28 USC 1498*, KNOWLEDGE ECOLOGY INT’L (July 20, 2022), <https://www.keionline.org/37987>; see also *166 Contracts Disclosed in SEC Filings Include Authorizations to Use U.S. Patents Without Consent from Patent Holders*, KNOWLEDGE ECOLOGY INT’L (Oct. 12, 2022), <https://www.keionline.org/38064> (“166 contracts disclosed to the U.S. Securities and Exchange Commission . . . permit companies to use patented inventions without the consent of patent holders.”).

283. See Mercurio, *WTO Waiver*, *supra* note 181, at 16–17 (“While in the short term, waiving IPRs may arguably accelerate the distribution of goods and services—i.e., access to COVID-19 vaccines—in the long term, undermining IPRs would eliminate the incentives that spark innovation.”); Hilty et al., *supra* note 181, at 7 (“Those platform technologies [that are now being deployed to combat COVID-19] have a potential to yield numerous therapeutic applications in other medical areas, including cancer treatment.”); Abbott et al., *supra* note 180, at 3 (“[T]he [intellectual property] waiver is likely to have long-term unintended consequences that could both hinder our response to future pandemics and impede innovation more generally.”).

284. See Ana Santos Rutschman, *The Vaccine Race in the 21st Century*, 61 ARIZ. L. REV. 729, 731 (2019) (“[I]n spite of the increasing burden posed by infectious diseases in the United States and abroad, the market for vaccines targeting emerging pathogens is often considered unprofitable.”); Qiwei Claire Xue & Lisa Larrimore Ouellette, *Innovation Policy and the Market for Vaccines*, 7 J.L. & BIOSCIENCES 1, 7 (2020) (“[T]raditional market-based [intellectual property] incentives may be specifically insufficient for promoting vaccine development, despite the outsized social benefits of vaccines.”).

crisis, what does that mean for the traditional justifications for intellectual property rights?<sup>285</sup> What are the limitations of an innovation model that is fueled primarily by these rights? Are there specific conditions under which these rights will best promote innovation? To the extent that we recognize the existence of serious limitations to an intellectual property-based innovation system, should we start focusing our attention on the development of alternative incentive frameworks? If so, are certain frameworks more effective than others in responding to armed conflicts or other major world crises?

### *B. Intellectual Property Law*

As section III.A showed, examples of special wartime intellectual property arrangements often include the confiscation of intellectual property held by individuals or entities originating from enemy states or the suspension of their intellectual property rights.<sup>286</sup> Yet it is rare to hear about such arrangements in the copyright area except for censorship purposes, notwithstanding the postwar extension of copyright terms in the European Union and the United States.<sup>287</sup> To some extent, wartime strategies seem to suggest the need for a bifurcated approach that privileges certain intellectual property rights over the others.

Such an approach is unsurprising, even though intellectual property rights are now generally lumped together under a single umbrella.<sup>288</sup> In fact, the international intellectual property regime was developed out of the consolidation of two separate regimes – one for literary and artistic property (as reflected in the Berne Convention) and one for industrial property (as reflected in the Paris Convention).<sup>289</sup> Recognizing “the division between industrial property rights (including patents, trademarks, and unfair competition protection) covered by the Paris Convention and literary or artistic property rights covered by the Berne

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285. Thanks to Mark Lemley for encouraging the Author to explore questions in this direction.

286. See *supra* text accompanying notes 169–172.

287. See *supra* text accompanying notes 197–198.

288. See WILLIAM CORNISH, *INTELLECTUAL PROPERTY: OMNIPRESENT, DISTRACTING, IRRELEVANT?* 2 (2004) (“‘Intellectual property’ is today a generic title for patents, copyright, trademarks, design rights, trade secrets and so forth . . . [and] an umbrella term . . .”).

289. Berne Convention, *supra* note 29; Paris Convention, *supra* note 28.

Convention,”<sup>290</sup> Jerome Reichman calls attention to the “bipolar structure of the international intellectual property system.”<sup>291</sup>

Consistent with this bipolar structure, policymakers outside the United States have provided varying levels of support to different intellectual property rights. In relation to China, I have repeatedly lamented how policymakers tended to privilege developments in the patent and trademark areas at the expense of developments in the copyright area.<sup>292</sup> As I have explained: “While patent law relates to science and technology and trademark law is tied to commerce, copyright law is heavily intertwined with cultural and media control.”<sup>293</sup> Although such a bifurcated approach made some sense two or three decades ago, such an approach no longer aligns well with the ongoing and future economic and technological developments in China.<sup>294</sup>

During the COVID-19 pandemic, the proponents and supporters of the proposed COVID-19 TRIPS waiver called for differential treatment of select forms of intellectual property rights.<sup>295</sup> While the proposed instrument covered only copyrights, industrial designs, patents, and the protection of undisclosed information (such as test or other data for pharmaceutical

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290. J.H. Reichman, *Legal Hybrids Between the Patent and Copyright Paradigms*, 94 COLUM. L. REV. 2432, 2436 n.9 (1994).

291. *Id.* at 2448.

292. See Peter K. Yu, *The Long and Winding Road to Effective Copyright Protection in China*, 49 PEPP. L. REV. 681, 726 (2022) [hereinafter Yu, *Long and Winding Road*] (“In China, copyright law developments have historically lagged behind those in the patent and trademark areas.”); see also ANDREW C. MERTHA, *THE POLITICS OF PIRACY: INTELLECTUAL PROPERTY IN CONTEMPORARY CHINA* 133–34 (2005) (“The copyright bureaucracy . . . is . . . involved in a more politically sensitive environment, even if technical copyright issues themselves are no more or less ‘political’ than those pertaining to patents or trademarks.”); Mark Sidel, *The Legal Protection of Copyright and the Rights of Authors in the People’s Republic of China, 1949–1984: Prelude to the Chinese Copyright Law*, 9 COLUM. J. ART & L. 477, 493 (1985) (“Copyright legislation has proven the most controversial of all proposed statutes in the highly charged world of Chinese intellectual property.”).

293. Yu, *Long and Winding Road*, *supra* note 292, at 726; see also Peter K. Yu, *From Pirates to Partners (Episode II): Protecting Intellectual Property in Post-WTO China*, 55 AM. U. L. REV. 901, 995 (2006) (offering suggestions on why China enacted the Trademark Law first and the Copyright Law last after its reopening in the late 1970s).

294. See Peter K. Yu, *The Rise and Decline of the Intellectual Property Powers*, 34 CAMPBELL L. REV. 525, 577 (2012) (“[A] widening gap is slowly emerging in the U.S.-China intellectual property debate between those U.S. industries driven by copyright protection, such as the movie and music industries, and those driven by patent protection.”).

295. *TRIPS Waiver Proposal*, *supra* note 160, annex, ¶¶ 1–2; *Revised TRIPS Waiver Proposal*, *supra* note 160, annex, ¶¶ 1, 3.

products), it did not include trademarks, geographical indications, plant variety protection, layout designs of integrated circuits, or the neighboring rights of performers, phonogram producers, or broadcasting organizations.<sup>296</sup> As the proponents explained, the waiver included four types of intellectual property rights because they were implicated in “health products and technologies like test kits, masks, medicines, vaccines, components of ventilators like valves, control mechanisms and the algorithms and CAD [computer-aided design] files used in their manufacturing.”<sup>297</sup> The choice of a bifurcated approach was likely strategic given the proponents’ anticipation of strong opposition to the waiver proposal.

What is interesting for the purposes of this Article, however, is the increasing obsolescence of the bifurcated approach and its likely impracticality in future armed conflicts. From a national security standpoint, information or cyber warfare is of growing importance.<sup>298</sup> As Eric Schmidt and Jared Cohen remind us, “[a] cyber attack might be the state’s perfect weapon: powerful, customizable and anonymous.”<sup>299</sup> As a result, countries will need to pay greater attention to those intellectual property rights that affect information or cyber warfare, such as copyright protection. In this area, countries will also need to think more broadly about the protection of data<sup>300</sup> and cybersecurity-related technology issues<sup>301</sup>—issues that do not always reside in the intellectual property regime.

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296. *TRIPS Waiver Proposal*, *supra* note 160, annex, ¶¶ 1–2; *Revised TRIPS Waiver Proposal*, *supra* note 160, annex, ¶¶ 1, 3.

297. *October and December 2020 Minutes*, *supra* note 179, ¶ 871.

298. For discussions of information or cyber warfare, see generally RICHARD A. CLARKE & ROBERT K. KNAKE, *CYBER WAR: THE NEXT THREAT TO NATIONAL SECURITY AND WHAT TO DO ABOUT IT* (2010); ADAM SEGAL, *THE HACKED WORLD ORDER: HOW NATIONS FIGHT, TRADE, MANEUVER, AND MANIPULATE IN THE DIGITAL AGE* (2016); Arie J. Schaap, *Cyber Warfare Operations: Development and Use Under International Law*, 64 A.F. L. REV. 121 (2009).

299. ERIC SCHMIDT & JARED COHEN, *THE NEW DIGITAL AGE: RESHAPING THE FUTURE OF PEOPLE, NATIONS AND BUSINESS* 104 (2013).

300. See generally Peter K. Yu, *Data Producer’s Right and the Protection of Machine-Generated Data*, 93 TUL. L. REV. 859 (2019) (critically examining the European Union’s now-rejected proposal to provide a new data producer’s right for nonpersonal, anonymized machine-generated data).

301. In the past few years, U.S. policymakers have paid considerable attention to issues raised by cyberattacks and online hacking from China. See OFF. OF THE U.S. TRADE

Moreover, as far as modern weapons are concerned, artificial intelligence and machine learning can play very important roles in their development. Viewed from this perspective, copyrighted content and proprietary data can be just as important as patented technology. The fields of public international law and human rights have already encountered a burgeoning literature on regulations, ethics, and responsibilities relating to the use of autonomous weapons or killer robots.<sup>302</sup> In October 2022, the North Atlantic Treaty Organization, of which the United States is a member, released a summary of its Autonomy Implementation Plan.<sup>303</sup> A few months later, the U.S. Department of Defense also updated Directive 3000.09 on “Autonomy in Weapon Systems.”<sup>304</sup> These developments have led commentators to question whether the Russo-Ukrainian War has accelerated the development of autonomous weapons.<sup>305</sup>

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REPRESENTATIVE, FINDINGS OF THE INVESTIGATION INTO CHINA’S ACTS, POLICIES, AND PRACTICES RELATED TO TECHNOLOGY TRANSFER, INTELLECTUAL PROPERTY, AND INNOVATION UNDER SECTION 301 OF THE TRADE ACT OF 1974, at 153–76 (2018) (discussing the unauthorized intrusions from Chinese actors into U.S. commercial computer networks and the cyber-enabled theft of intellectual property and sensitive commercial information). *But see* CLARKE & KNAKE, *supra* note 298, at 63 (“U.S. intelligence officials do not . . . rate China as the biggest threat to the U.S. in cyberspace.”); Peter K. Yu, *Trade Secret Hacking, Online Data Breaches, and China’s Cyberthreats*, 2015 CARDOZO L. REV. DE NOVO 130, 132–45 (discussing the complexities in the U.S.-China debate on online hacking and cybersecurity threats).

302. *See, e.g.*, Jack M. Beard, *Autonomous Weapons and Human Responsibilities*, 45 GEO. J. INT’L L. 617 (2014); Amos N. Guiora, *Accountability and Decision Making in Autonomous Warfare: Who Is Responsible?*, 2017 UTAH L. REV. 393; Michael N. Schmitt & Jeffrey S. Thurnher, “Out of the Loop”: *Autonomous Weapon Systems and the Law of Armed Conflict*, 4 HARV. NAT’L SEC. J. 231 (2013); Charles P. Trumbull IV, *Autonomous Weapons: How Existing Law Can Regulate Future Weapons*, 34 EMORY INT’L L. REV. 533 (2020).

303. *Summary of NATO’s Autonomy Implementation Plan*, N. ATL. TREATY ORG. (Oct. 13, 2022), [https://www.nato.int/cps/en/natohq/official\\_texts\\_208376.htm](https://www.nato.int/cps/en/natohq/official_texts_208376.htm).

304. U.S. Dep’t of Def., Directive 3000.09, *Autonomy in Weapon Systems* (2023), <https://media.defense.gov/2023/Jan/25/2003149928/-1/-1/0/DOD-DIRECTIVE-3000.09-AUTONOMY-IN-WEAPON-SYSTEMS.PDF>; *see also* Press Release, U.S. Dep’t of Def., DoD Announces Update to DoD Directive 3000.09, “Autonomy in Weapon Systems” (Jan. 25, 2023), <https://www.defense.gov/News/Releases/Release/Article/3278076/dod-announces-update-to-dod-directive-300009-autonomy-in-weapon-systems> (“The update . . . reflects changes in the Department [of Defense] over the last decade, changes in the world, and Department requirements to reissue and update directives within certain time periods.”).

305. *See* James Dawes, *War in Ukraine Accelerates Global Drive Toward Killer Robots*, THE CONVERSATION (Feb. 21, 2023), <https://theconversation.com/war-in-ukraine-accelerates-global-drive-toward-killer-robots-198725> (noting that the announcements from the North Atlantic Treaty Organization and the U.S. Department of Defense “reflect a crucial lesson militaries around the world have learned from recent combat operations in Ukraine and Nagorno-Karabakh: Weaponized artificial intelligence is the future of warfare”).

Another area that deserves greater attention concerns the protection of trade secrets and tacit information. As we have learned during the COVID-19 pandemic, such information may not be available even if the patented technology has been disclosed and if the related rights have been suspended.<sup>306</sup> Although commentators rightly question whether the patent bargain has been fulfilled when “person[s] having ordinary skill in the art”<sup>307</sup> cannot practice the invention,<sup>308</sup> an important question that needs to be asked in relation to policy measures introduced during or in relation to an armed conflict is how countries could attain greater access to uncodified knowledge. If the knowledge were held by rights holders originating from countries on the opposite side of the conflict, such knowledge would be unlikely to be voluntarily disclosed, no matter what new legal mandates were adopted. Despite the heightened attention to the topic of forced technology transfer in recent years, such transfer is actually harder than policymakers are willing to admit.<sup>309</sup> Nevertheless, commentators did note the disclosure of a considerable amount of information in the regulatory process.<sup>310</sup> In the event of an armed conflict, such

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306. See Yu, *Forced Technology Transfer*, *supra* note 229, at 1044–45 (discussing the difficulty in forcing “transfer of technology and know-how” in the pandemic context); Sven J.R. Bostyn, *Why a COVID IP Waiver Is Not a Good Strategy* 6 (May 10, 2021) (unpublished manuscript), <https://ssrn.com/abstract=3843327> (discussing the challenges in forcing intellectual property rights holders to disclose trade secrets and other know-how).

307. 35 U.S.C. § 103.

308. See Peter Lee, *New and Heightened Public-Private Quid Pro Quos: Leveraging Public Support to Enhance Private Technical Disclosure*, in *INTELLECTUAL PROPERTY AND NEXT PANDEMIC*, *supra* note 160, <https://ssrn.com/abstract=4058717> (manuscript at 6) [hereinafter Lee, *Quid Pro Quos*] (finding it highly problematic that the disclosure of inventions by biopharmaceutical companies does not enable technical artisans to effectively practice these inventions).

309. See Yu, *Forced Technology Transfer*, *supra* note 229, at 1016 (discussing the difficulty in forcing transfer of technology in the contexts of global pandemics, “high-speed rail, new energy vehicles, and other frontier technologies”).

310. See Lee, *Quid Pro Quos*, *supra* note 308 (manuscript at 11) (“As a condition of obtaining regulatory approval, developers of [vaccines, diagnostics, and therapeutics] must often submit detailed manufacturing information to regulators. Such submissions can compel the codification of tacit knowledge and the disclosure of codified trade secrets.”); Christopher Morten, *Publicizing Corporate Secrets*, 171 U. PA. L. REV. (forthcoming 2023) (manuscript at 15) (proposing the concept of controlled “information publicity” and calling on regulators to “cultivate carefully bounded ‘gardens’ of secret information”). See generally Christopher J. Morten & Amy Kapczynski, *The Big Data Regulator, Rebooted: Why and How the FDA Can and Should Disclose Confidential Data on Prescription Drugs and Vaccines*, 109 CALIF. L. REV. 493 (2021) (discussing how regulatory agencies can disclose clinical trial data without undermining privacy protection and incentives for innovation).

previously disclosed information will likely come in handy to help countries obtain the needed knowledge to advance innovation during or in relation to the conflict.

In sum, the changing nature of technological development will erase the traditional divide between protection for literary and artistic property and the protection for industrial property. Instead of having a bifurcated approach, the protections should be treated as a collective whole, with the expectation that some forms of intellectual property rights will overlap with each other.<sup>311</sup> There is also a need to incorporate new issues that do not always reside in the intellectual property regime, such as those relating to data and cybersecurity. The changes needed for this shifting technological environment will affect not only wartime and postwar protection of intellectual property rights but also the ongoing and future development of intellectual property law as well as the type of reforms we need in the intellectual property arena.

### C. *International Law*

The root of the problem in the international regulatory system is the lack of a super-government or a world police that can enforce international obligations.<sup>312</sup> Instead, we rely on the establishment of a system that values reputation and facilitates international cooperation.<sup>313</sup> For instance, the system can play a coordinating

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311. For discussions of overlapping rights, see generally ESTELLE DERCLAYE & MATTHIAS LEISTNER, *INTELLECTUAL PROPERTY OVERLAPS: A EUROPEAN PERSPECTIVE* (2011); *OVERLAPPING INTELLECTUAL PROPERTY RIGHTS* (Neil Wilkof, Shamnad Basheer & Irene Calboli eds., 2d ed. 2023).

312. See KENNETH N. WALTZ, *THEORY OF INTERNATIONAL POLITICS* 96 (1979) (“States develop their own strategies, chart their own courses, make their own decisions about how to meet whatever needs they experience and whatever desires they develop.”); Peter K. Yu, *Intellectual Property Enforcement and Global Climate Change*, in *RESEARCH HANDBOOK ON INTELLECTUAL PROPERTY AND CLIMATE CHANGE* 107, 108 (Joshua D. Sarnoff ed., 2016) (“[T]he global regulatory system does not have a super-governmental enforcement arm.”).

313. As Robert Axelrod explains:

What makes it possible for cooperation to emerge is the fact that the players might meet again. This possibility means that the choices made today not only determine the outcome of this move, but can also influence the later choices of the players. The future can therefore cast a shadow back upon the present and thereby affect the current strategic situation.

ROBERT AXELROD, *THE EVOLUTION OF COOPERATION* 12 (1984); see also ROBERT AXELROD, *THE COMPLEXITY OF COOPERATION: AGENT-BASED MODELS OF COMPETITION AND COLLABORATION* 44, 62 (1997) (noting that “a violation of a norm is . . . a signal that contains information about

function. The discussion of strengthened international intellectual property enforcement in section III.B is a good example.<sup>314</sup> The international system can also play an adjudicatory function, especially with the support of a large segment of the international community. The creation of institutions to help determine the level of compensation following an armed conflict provides another good example.<sup>315</sup>

In the area of armed conflicts, international law has also played longstanding roles in managing conflicts and inducing cooperation in difficult times. Examples include the 1907 Hague Convention Respecting the Laws and Customs of War on Land,<sup>316</sup> the 1954 Convention for the Protection of Cultural Property in the Event of Armed Conflict,<sup>317</sup> and treaties relating to arms control, bans on weapon testing, and nuclear nonproliferation.<sup>318</sup> The first two instruments include language concerning the protection of cultural property, which could be relevant in the intellectual property context.<sup>319</sup>

Yet, as important as the international legal system may be, there are limits to what international law can achieve.<sup>320</sup> If we can learn anything from the COVID-19 pandemic, it is that countries are unwilling to cooperate with others when national security is on

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the future behavior of the defector in a wide variety of situations"); ROBERT O. KEOHANE, *AFTER HEGEMONY: COOPERATION AND DISCORD IN THE WORLD POLITICAL ECONOMY* 106 (1984) ("For reasons of reputation, as well as fear of retaliation and concern about the effects of precedents, egoistic governments may follow the rules and principles of international regimes even when myopic self-interest counsels them not to."); Yu, *Nonzero-sum Approach*, *supra* note 27, at 608 ("To deter cheating, many international regimes . . . include rigorous enforcement and review mechanisms.").

314. *See supra* text accompanying notes 226–228.

315. *See supra* text accompanying notes 246–247.

316. Convention Respecting the Laws and Customs of War on Land, Oct. 18, 1907, 36 Stat. 2277, 205 Consol. T.S. 277.

317. Convention for the Protection of Cultural Property in the Event of Armed Conflict, May 14, 1954, 249 U.N.T.S. 240.

318. *See* David A. Koplow, *Arms Control Inspection: Constitutional Restrictions on Treaty Verification in the United States*, 63 N.Y.U. L. REV. 229, 243–65 (1988) (collecting and discussing these treaties).

319. *See generally* Peter K. Yu, *Cultural Relics, Intellectual Property, and Intangible Heritage*, 81 TEMP. L. REV. 433, 441–54 (2008) (discussing the similarities and differences between the protection of cultural property and that of intellectual property).

320. *See generally* JACK L. GOLDSMITH & ERIC A. POSNER, *THE LIMITS OF INTERNATIONAL LAW* (2005) (discussing the limits of international law in inducing compliance despite the states' contrary self-interests).

the line.<sup>321</sup> Indeed, even though policymakers repeatedly recite the COVID-19 mantra, “no-one is safe until everyone is safe,”<sup>322</sup> their policy focuses were often fixated on domestic measures.<sup>323</sup> Such a short-sighted focus eventually led to the oft-criticized phenomenon of “vaccine nationalism,” which has greatly reduced global access to health products and technologies and made such access highly inequitable.<sup>324</sup>

Taking note of the challenges to ensure compliance when core national interests are at stake, the WTO dispute settlement process readily recognizes the tremendous difficulty in establishing a mechanism to address conflicts of this nature. Even though the WTO rules mandate the use of the dispute settlement process,<sup>325</sup> it allows the aggrieved party to suspend the concessions made to the violative party – or, put bluntly, retaliate – should the latter choose not to comply with the WTO panel decision.<sup>326</sup> Instead of banning

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321. See Yu, *Modalities*, *supra* note 188, at 26–27 (documenting countries’ refusal to cooperate globally during the COVID-19 pandemic); Peter S. Goodman, Katie Thomas, Wee Sui-Lee & Jeffrey Gettleman, *A New Front for Nationalism: The Global Battle Against a Virus*, N.Y. TIMES (Apr. 13, 2020), <https://www.nytimes.com/2020/04/10/business/coronavirus-vaccine-nationalism.html> (“At least 69 countries have banned or restricted the export of protective equipment, medical devices or medicines.”).

322. E.g., *What Is the ACT-Accelerator*, WORLD HEALTH ORG., <https://www.who.int/initiatives/act-accelerator/about> (last visited Oct. 14, 2023).

323. See Yu, *Modalities*, *supra* note 188, at 31 (“[P]olicymakers and governments seem to be struck with a national pandemic response paradox: while policymakers and governments know full well that global pandemics will necessitate cross-border solutions, the national public health crises steer their time, efforts, and energies toward developing policies to protect domestic constituents.” (footnote omitted)).

324. See Kai Kupferschmidt, “Vaccine Nationalism” Threatens Global Plan to Distribute COVID-19 Shots Fairly, SCI. INSIDER (July 28, 2020), <https://www.sciencemag.org/news/2020/07/vaccine-nationalism-threatens-global-plan-distribute-covid-19-shots-fairly> (“The United States and Europe are placing advance orders for hundreds of millions of doses of successful vaccines, potentially leaving little for poorer parts of the world.”); see also Peter K. Yu, *Virotech Patents, Viropiracy, and Viral Sovereignty*, 45 ARIZ. ST. L.J. 1563, 1608 (2013) (“Because both developed and less developed countries have an equally strong demand for vaccines, those vaccines are likely to be priced according to the economic ability of developed countries, not their less developed counterparts.”). See generally ANA SANTOS RUTSCHMAN, *VACCINES AS TECHNOLOGY: INNOVATION, BARRIERS, AND THE PUBLIC HEALTH* 99–105 (2022) (discussing vaccine nationalism in the H1N1 and COVID-19 contexts).

325. See *supra* text accompanying notes 55–56.

326. See Dispute Settlement Understanding, *supra* note 56, art. 22.1 (considering “the suspension of concessions or other obligations . . . [a] temporary measure[] available in the event that the recommendations and rulings are not implemented within a reasonable period of time”); see also William J. Davey, *Dispute Settlement in GATT*, 11 FORDHAM INT’L L.J. 51, 101–02 (1987) (explaining “why GATT should authorize retaliation more regularly”).

retaliation outright, the WTO dispute settlement process merely manages how countries undertake retaliation. As Article 22.3 of the Dispute Settlement Understanding provides, countries should suspend concessions in the area implicated by the dispute before expanding to other areas.<sup>327</sup> Known as cross-retaliation, this form of retaliation allows countries having limited interests in the disputed trade sector to obtain benefits in other sectors,<sup>328</sup> such as using the suspension of intellectual property rights to compensate for losses in internet gambling services.<sup>329</sup>

To some extent, the WTO's willingness to take a pragmatic, realist approach to retaliation and conflict management has helped ensure the resilience of the international trading regime as well as the international intellectual property regime. Regime resilience is a question explored in the beginning of this Article.<sup>330</sup> Such resilience will, in turn, help facilitate international efforts to address questions about wartime and postwar protection of intellectual property rights. Before the establishment of the international intellectual property regime, armed conflicts frequently disrupted trade and commercial relations. With the current regime, however, international cooperative efforts could continue even amid such conflicts.

#### CONCLUSION

The Russo-Ukrainian War that broke out in February 2022 has called on us to reexamine the readiness of the international intellectual property system to address issues raised by armed conflicts or other political instabilities. Just as it is important to develop pandemic preparedness in the international intellectual property regime, it is equally urgent to enhance the regime's

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327. See Dispute Settlement Understanding, *supra* note 56, art. 22.3 (providing principles and procedures to help WTO members determine, where relevant, what concessions or other obligations to suspend).

328. See Rachel Brewster, *The Surprising Benefits to Developing Countries of Linking International Trade and Intellectual Property*, 12 CHI. J. INT'L L. 1, 7 (2011) ("[I]ntellectual property retaliation is far more advantageous to developing states, compared to retaliation in goods, when targeting developed states.").

329. See Recourse to Arbitration by the United States Under Article 22.6 of the DSU, *United States – Measures Affecting the Cross-Border Supply of Gambling and Betting Services*, ¶ 3.189, WT/DS285/ARB (Dec. 21, 2007) (determining that "the annual level of nullification or impairment of benefits accruing to Antigua is US \$21 million").

330. See *supra* text accompanying notes 65–66.

readiness to respond to these conflicts. Because of the paucity of research in this area, this Article explores the different policy options available to address the potential disruption caused by an armed conflict.

The Article also seeks to lay the groundwork for future academic and policy research in this area. Even if we are fortunate enough to encounter no major global armed conflicts that would require us to substantially adjust extant international intellectual property standards, a deeper understanding of wartime and postwar protection of intellectual property rights will help us better appreciate the adjustments countries may need when national security is at stake, such as during a major global pandemic or an international catastrophe involving unanticipated, massive worldwide flooding brought about by climate change.

The Russo-Ukrainian War shows how depressingly little we have learned from the bloodshed and devastation caused by past armed conflicts.<sup>331</sup> Yet the war also provides us with an opportunity to jumpstart intellectual property research in a largely unexplored area. Due to its limited length and scope, this Article can only cover the more obvious questions, such as those concerning wartime and postwar protection of intellectual property rights and the international treaty obligations of countries involved in armed conflicts—either directly or through the imposition of sanctions on belligerent states. However, there are still many unanswered questions. Examples of possible research topics are the interrelationship between war and technology,<sup>332</sup> the optimal mix

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331. In addition to history, these lessons can also be found in art and literature. A case in point is Leo Tolstoy's *War and Peace*, LEO TOLSTOY, *WAR AND PEACE* (Anthony Briggs trans., 2005) (1868–69), which provided the inspiration for the title of not only this Article but also many articles on this subject that were published before the Second World War. See Holland, *supra* note 26; Kerkam, *supra* note 26; McClure, *supra* note 26.

332. British historian A.J.P. Taylor famously observed, “[w]ar has always been the mother of invention.” A.J.P. TAYLOR, *THE FIRST WORLD WAR: AN ILLUSTRATED HISTORY* 11 (1966); see also Joshua C. Harrison, *Post Civil War Firearm Patent Litigation Against the U.S. Government*, 38 J. JURIS 9, 10 (2019) (“The Civil War effected a flurry of invention and patent activity related to firearms.”); Kerkam, *supra* note 26, at 235:

The United States patent system grew out of war. It was called into being by Washington's first message to Congress and as the direct result of the embarrassments and difficulties he had experienced in the conduct of the Revolutionary War due to the absence of local manufacture of tools, machinery and implements of war.

of incentives for promoting innovation in military technology,<sup>333</sup> the possible roles played by governments in directing such innovation,<sup>334</sup> the history of developing critical military technology (beyond aircrafts,<sup>335</sup> torpedoes,<sup>336</sup> submarines,<sup>337</sup> and the atomic bomb<sup>338</sup>), and the role of intellectual property rights and institutions in supporting the postwar rebuilding effort. It is my hope that other scholars will undertake follow-up projects in this vast and fertile research area. Such research will not only enhance our knowledge at the intersection of war and intellectual property, but it will also enable us to better prepare for future emergencies that would require substantial adjustments to our intellectual property system.

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However, as Anthony and Mark Mills point out:

With a few notable exceptions, most of the iconic technologies of the First World War were not in fact invented during or because of the war. Rather, they were modifications of existing civilian technologies developed during peacetime. Nor did the war effort engender many truly transformative technological innovations, even those for which the war is most famous. In this sense, World War I was not the mother of invention.

M. Anthony Mills & Mark P. Mills, *The Invention of the War Machine: Science, Technology, and the First World War*, THE NEW ATLANTIS, Spring 2014, at 3, 3.

333. See *supra* text accompanying notes 167–168.

334. See *supra* text accompanying notes 275–279.

335. See generally TOM D. CROUCH, *WINGS: A HISTORY OF AVIATION FROM KITES TO THE SPACE AGE 151–94* (2003) (discussing the use of, and improvements on, aircraft during the First World War); LAWRENCE GOLDSTONE, *BIRDMEN: THE WRIGHT BROTHERS, GLENN CURTISS, AND THE BATTLE TO CONTROL THE SKIES* (2014) (discussing the rivalry between the Wright Brothers and Glenn Curtiss in the development of aircraft); see also sources cited *supra* note 186.

336. See generally EPSTEIN, *supra* note 273 (discussing the development of torpedoes in Great Britain and the United States).

337. See generally LAWRENCE GOLDSTONE, *GOING DEEP: JOHN PHILIP HOLLAND AND THE INVENTION OF THE ATTACK SUBMARINE* (2017) (discussing the development of submarines).

338. See generally KAI BIRD & MARTIN J. SHERWIN, *AMERICAN PROMETHEUS: THE TRIUMPH AND TRAGEDY OF J. ROBERT OPPENHEIMER* (2005) (discussing the role played by Robert Oppenheimer in the development of the atomic bomb); RICHARD RHODES, *THE MAKING OF THE ATOMIC BOMB* (1986) (discussing the development of the atomic bomb).

