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I. INTRODUCTION

From the moment the first nuclear weapon was used in an armed conflict, it has been recognized as a weapon unlike any other. President Harry Truman acknowledged this reality when he informed the world of the atomic bombing of Hiroshima on August 6, 1945, describing the new weapon as representing "a harnessing of the basic power of the universe."[1] He went on to explain that "[t]he force from which the sun draws its power has been loosed against those who brought war to the Far East"[2] and threatened that unless the Japanese immediately surrendered unconditionally, they could "expect a rain of ruin from the air, the like of which has never been seen on this earth."[3]

The uniqueness of these weapons stemmed from the source of their explosive power,[4] the unparalleled degree of destruction they could deliver,[5] and the nature of that destruction, which included not just massive pressure waves and fire but also a new phenomenon for the battlefield: intense blasts of radiation and the creation of radioactive fallout[6] that caused anguish and death long after the fires from the original blast subsided.[7] As post-World

1. *Statement by President Truman Announcing the Bombing of Hiroshima*, HARRY S. TRUMAN LIBRARY (Aug. 6, 1945), https://www.trumanlibrary.gov/library/public-papers/ 93/statement-president-announcing-use-bomb-hiroshima.

2. *Id.*

3. *Id.*

4. *Id.*

5. *Leaflets Warning Japanese of Atomic Bomb*, AMERICAN EXPERIENCE, https://www.pbs.org/wgbh/americanexperience/features/truman-leaflets/ (last visited Dec. 1, 2023) (showing the translated text written on leaflets dropped on Japanese cities following the atomic bombing of Hiroshima, reading, in part, "[a] single one of our newly developed atomic bombs is actually the equivalent in explosive power to what 2000 of our giant B-29s can carry on a single mission. This awful fact is one for you to ponder and we solemnly assure you it is grimly accurate.").

6. Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, 461 (July 8) (dissenting opinion by Weeramantry, J.) [hereinafter Nuclear Weapons Advisory Opinion] ("Nuclear weapons cause damage in three ways—through heat, blast and radiation . . . while the first two differ quantitatively from those resulting from the explosion of conventional bombs, the third is peculiar to nuclear weapons. In addition to instantaneous radiation, there is also radioactive fallout.").

7. *Id.* ¶ 35 ("The destructive power of nuclear weapons cannot be contained in either space or time. They have the potential to destroy all civilization and the entire ecosystem of the planet. The radiation released by a nuclear explosion would affect health, agriculture,

War II policymakers rushed to adapt their planning to the realities of these new weapons,[8] military leaders found themselves struggling to come to terms with what nuclear weapons meant for the future of armed conflict.[9] In addition to raising practical, strategic, and moral questions, military leaders who would bear the heavy task of using these new weapons faced an uncertain legal landscape governing their use.

Almost eighty years later, the legal questions surrounding the use of nuclear weapons remain profoundly difficult but far from unsolvable. This article views these legal questions from the perspective of a Russian military commander ordered to execute a nuclear strike against Ukraine. Of course, it cannot be expected that such a military commander will have clear and complete information at their fingertips, nor sufficient legal training to parse these legal questions with the precision of an academic. However, the legal framework surrounding nuclear weapons that has emerged in the nearly eight decades since they were first used is sufficiently defined for military commanders to identify illegal launch orders and refuse to execute them. Such disobedience of manifestly unlawful orders is an individual legal duty of members of the armed forces that cannot be avoided by a defense of following superior orders.[10] As this article will demonstrate, the well-established legal framework surrounding the use of nuclear weapons clearly prohibits any conceivable Russian nuclear strike against Ukrainian targets.

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natural resources and demography over a very wide area. Further, the use of nuclear weapons would be a serious danger to future generations. Ionizing radiation has the potential to damage the future environment, food and marine ecosystem, and to cause genetic defects and illness in future generations.").

8. *See* Bernard Brodie, *War in the Atomic Age*, *in* THE ABSOLUTE WEAPON: ATOMIC POWER AND WORLD ORDER 14 (Bernard Brodie et al. eds., 1946) ("Everything about the atomic bomb is overshadowed by the twin facts that it exists and that its destructive power is fantastically great. Yet within this framework there are a large number of technical questions which must be answered if our policy decisions are to proceed in anything other than complete darkness." *Id.* at 41).

9. Frederick S. Dunn, *The Common Problem*, *in* THE ABSOLUTE WEAPON: ATOMIC POWER AND WORLD ORDER, *supra* note 8, at 1, 2 ("What bothered the generals and admirals most was the startling efficiency of this new weapon. It was so far ahead of the other weapons in destructive power as to threaten to reduce even the giants of yesterday to dwarf size. In fact, to speak of it as just another weapon was highly misleading. It was a revolutionary development which altered the basic character of war itself.").

10. OFFICE OF GENERAL COUNSEL, U.S. DEP'T OF DEFENSE, LAW OF WAR MANUAL § 18.3.2 (updated ed. July 2023) ("Members of the armed forces must refuse to comply with clearly illegal orders to commit law of war violations"); *see also* YORAM DINSTEIN, THE CONDUCT OF HOSTILITIES UNDER THE LAW OF INTERNATIONAL ARMED CONFLICT 382–86 (4th ed. 2022) (briefly reviewing the legal history of the defense of obedience to superior

The finer details of the law need not be completely settled for the larger contours of the law to put a broad range of contemplated uses of nuclear weapons clearly outside the bounds of legality. The war in Ukraine is a prime example of this. This article identifies those broader contours of the law which relate to the use of nuclear weapons and illustrates their application using various hypothetical scenarios based on the current war in Ukraine. This article starts with a brief review of the types of nuclear weapons and the legal history of attempts to prohibit or regulate their use. It then analyzes the International Court of Justice's (ICJ) 1996 Advisory Opinion on the *Legality of the Threat or Use of Nuclear Weapons*[11] to decipher the state of the law surrounding the use of nuclear weapons, with a primary focus on the ICJ holdings related to international humanitarian law (IHL). The IHL-related holdings of this case are then applied to several plausible nuclear strikes by Russia in Ukraine, which demonstrate that striking any of the targets, even with a relatively low-yield nuclear weapon, would clearly violate IHL.

The article produces a legal analysis that should be employed by any member of the Russian strategic forces when contemplating what to do if Vladimir Putin decides to order a nuclear launch against Ukraine. The conclusion is unavoidable: disobey the order to launch. More broadly, this analysis also serves as a case study to help fill the void created by the nearly complete absence of relevant case law on this topic, making the article useful for decision-makers from any country seeking to understand better how to apply the laws governing the conduct of hostilities to a specific use of nuclear weapons.

II. TYPES OF NUCLEAR WEAPONS

Nuclear weapons are often described as falling into one of two major classes of weapon, either "strategic" or "tactical."[12] This terminology is based on the scope of the impact the weapons are expected to have on the battlefield.[13] A strategic nuclear weapon targets the destruction of the adversary's capacity

orders at the International Military Tribunal in Nuremberg as well as Article 33(1) of the Rome Statute of the International Criminal Court, and concluding that "obedience to superior orders cannot constitute a defence *per se*" but allowing that the fact of following an order may be relevant in an analysis of whether the defendant had the required mens rea to be found criminally culpable of a charged war crime).

11. Nuclear Weapons Advisory Opinion, *supra* note 6.

12. Other terms for "tactical" might include "non-strategic" or "low-yield."

13. AMY F. WOOLF, CONG. RSCH. SERV., RL32572, NONSTRATEGIC NUCLEAR WEAPONS 8 (2002).

to fight a war. In contrast, a tactical weapon serves a more limited purpose on a specific battlefield in the war.[14] Put another way, a strategic weapon might end the war by destroying infrastructure vital to supporting the war, whereas a tactical nuclear weapon might be decisive at one specific location on the battlefield.[15] Early advocates of tactical nuclear weapons viewed them merely as a technologically more advanced version of conventional weapons and envisioned a similar use for them.[16] With a narrow battlefield use, tactical nuclear weapons often[17] have a much lower explosive power or yield than their strategic counterparts.[18] For this article, the term "tactical" nuclear weapon will refer to a nuclear weapon with a yield of less than fifty kilotons.[19] The upper end of that range includes weapons over three times the explosive power of the weapon detonated at Hiroshima.[20] It is estimated that the Russian military presently has approximately two thousand tactical nuclear weapons in its arsenal of varying explosive yields.[21]

By comparison, the term "strategic" nuclear weapon often refers to a weapon many orders of magnitude more powerful than a "tactical" nuclear

14. *Id.*

15. *Id.*

16. LAWRENCE FREEDMAN, THE EVOLUTION OF NUCLEAR STRATEGY 73 (3d ed. 2003) (quoting President Eisenhower's assertion that "where these things [referring to tactical nuclear weapons] are used on strictly military targets and for strictly military purposes, I see no reason why they shouldn't be used just exactly as you would use a bullet or anything else").

17. Often, but not always. There is debate about the best way to define tactical nuclear weapons, with some scholars suggesting varying approaches such as what the target or purpose of the weapon is, by reference to its inclusion or exclusion from arms control treaties, or its range, while others have suggested that even a low-yield nuclear weapon would have such a substantial signaling impact to effectively be a "strategic" weapon. For further insight on this debate, *see, e.g.*, Hans M. Kristensen & Matt Korda, *Tactical Weapons, 2019*, 75 BULLETIN OF THE ATOMIC SCIENTISTS 252, 254 (2019).

18. WOOLF, *supra* note 13, at 8–9.

19. *See* Kristensen & Korda, *supra* note 17, at 258 (describing U.S. tactical nuclear weapons of between 0.3 kilotons and 50 kilotons).

20. Using a weapon that is three-times the explosive yield as the weapon detonated at Hiroshima is also a good reference point because recent announcements by Russian and Belarussian government officials have described the delivery of tactical nuclear weapons to Belarus that are "three times more powerful than those used on Japan during World War II." Haley Ott, *Belarus Now Has Russian Nuclear Weapons "Three Times More Powerful" Than Those Used on Japan, Leader Says,* CBS NEWS (June 14, 2023), https://www.cbsnews.com/news/belarus-russia-nuclear-weapons-war-lukashenko-putin-hiroshima-nagasaki/.

21. Kristensen & Korda, *supra* note 17, at 255.

weapon.[22] The advent of thermonuclear weapons in the 1950s led to the development of weapons that dwarfed the explosive power of those weapons used at the end of World War II. The key technological difference between thermonuclear weapons and lower-yielding nuclear weapons, sometimes called atomic weapons, was the use of fusion instead of fission to generate the extraordinary explosive power of thermonuclear weapons.[23] To understand the difference in explosive power presented by thermonuclear weapons, consider the detonation of one of the world's earliest thermonuclear devices on March 1, 1954, by the United States,[24] which yielded approximately fifteen megatons.[25] Known as the "Castle Bravo" test, this detonation had an explosive power roughly one thousand times the explosive yield of the weapon detonated at Hiroshima.[26] Thermonuclear weapons, because of their enormous explosive power, make up the core of the strategic nuclear weapon arsenals of both Russia and the United States. Although not a perfect proxy for the number of strategic weapons readily available to Russia, the recently suspended[27] New START treaty was designed to limit strategic offensive nuclear weapons and constrained both Russia and the United States to 1,550 deployed strategic nuclear warheads.[28] This is useful as a rough estimate of how many readily available strategic warheads are available to both countries.

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22. *But see id.* at 254. Despite the debate about how to define the difference between tactical and strategic nuclear weapons, in this author's opinion the yield remains a useful proxy for capturing the core difference between the types of weapons being discussed.

23. An exploration of the technical differences behind fission and fusion is beyond the scope of this article, but it can be roughly described as the difference between splitting the nucleus of an atom (fission) and slamming two nuclei together to make one nucleus (fusion). Both processes release energy, but fusion releases far more energy than fission. *See* Gro Nystuen & Stuart Casey-Maslen, *Introduction*, *in* NUCLEAR WEAPONS UNDER INTERNATIONAL LAW 1, 2–3 (Gro Nystuen et al. eds., 2014).

24. *U.S. Tests*, AMERICAN EXPERIENCE, https://www.pbs.org/wgbh/americanexperience/features/bomb-us-tests/ (last visited Dec. 1, 2023).

25. EDWIN J. MARTIN & RICHARD H. ROWLAND, CASTLE SERIES, 1954: TECHNICAL REPORT 1 (1982).

26. *U.S. Tests*, *supra* note 24.

27. BUREAU OF ARMS CONTROL VERIFICATION AND COMPLIANCE, FACT SHEET, U.S. NEW START TREATY AGGREGATE NUMBERS OF STRATEGIC OFFENSIVE ARMS (May 12, 2023), https://www.state.gov/wp-content/uploads/2023/05/05-11-2023-FINAL-May-2023-NST-DATA-FACTSHEET-no-clear-page.pdf.

28. *New START Treaty*, U.S. DEP'T OF STATE (current as of June 1, 2023), https://www.state.gov/new-start/.

III. LEGAL HISTORY

The international community has grappled with questions regarding the legality of nuclear weapons from the earliest days of the nuclear era. The United Nations General Assembly has passed a series of resolutions on nuclear weapons. Some consist of declarations that nuclear weapons are illegal based on customary international law,[29] while others advocate for the adoption of a treaty prohibiting the use of nuclear weapons.[30] These General Assembly resolutions do not have the force of binding law. Still, they indicate the persistent interest of a majority of the members of the General Assembly in developing international law in a manner that prohibits the use of nuclear weapons. To become international law, such a rule would have to be adopted in a treaty,[31] in which case it would bind only those States that are parties to the treaty,[32] or be considered customary international law.[33] Customary international law requires a consistent general practice in the form of State action, indicating an acceptance of the existence of a legal requirement or prohibition (also known as *opinio juris*).[34] Customary international law is binding on all States, regardless of whether it is articulated in a treaty.[35]

Although there have been many treaties related to various aspects of nuclear weapons in the decades between World War II and today, none have directly prohibited the use of nuclear weapons.[36] Concerned with the absence of an international treaty restricting the use of nuclear weapons, advocates began a push for a judicial opinion from the ICJ on the topic of nuclear weapons after the end of the Cold War.[37] An advisory opinion can be issued by the ICJ under Article 96 of the UN Charter, which authorizes the "[t]he

29. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 72.

30. *Id.* ¶ 71.

31. YORAM DINSTEIN, THE CONDUCT OF HOSTILITIES UNDER THE LAW OF INTERNATIONAL ARMED CONFLICT 18 (4th ed. 2022).

32. *Id.* at 20.

33. *Id.* at 18.

34. *Id.*

35. *Id.* at 19.

36. Although the Treaty on the Prohibition of Nuclear Weapons entered into force in 2021 and prohibits, among other things, the threat or use of nuclear weapons, the treaty was created without the involvement of the nuclear weapons States, and no State known to possess nuclear weapons is a party to the treaty. WILLIAM H. BOOTHBY & WOLFF HEINTSCHEL VON HEINEGG, NUCLEAR WEAPONS LAW: WHERE ARE WE NOW? 202–4 (2022).

37. Michael N. Schmitt, *The International Court of Justice and the Use of Nuclear Weapons*, NAVAL WAR COLLEGE REVIEW 91, 93 (Spring 1998).

General Assembly or the Security Council [to] request the International Court of Justice to give an advisory opinion on any legal question."[38] The same article also authorizes "[o]ther organs of the United Nations . . . [to] request advisory opinions of the Court on legal questions arising within the scope of their activities."[39] The wording of Article 96 permits the ICJ to respond to a much broader range of legal questions when posed by the UN General Assembly or Security Council than when UN organizations present those questions. Advocates for achieving an advisory opinion decided to pursue both paths in their attempt to obtain a ruling from the ICJ relating to the legality of the use of nuclear weapons.

The first formal appeal to the ICJ for an advisory opinion on the legality of nuclear weapons was made by the World Health Organization in 1993. It requested the Court to address the question: "In view of the health and environmental effects, would the use of nuclear weapons by a State in war or armed conflict be a breach of its obligations under international law including the WHO Constitution?"[40] In its response to the WHO request, the ICJ found that it could not offer an advisory opinion on the question posed by the WHO[41] because it lacked the jurisdiction to provide an advisory opinion to the WHO on a question that, in the Court's opinion, fell beyond the scope of the WHO's activities.[42]

The second path to obtaining an advisory opinion was ultimately successful. The UN General Assembly passed resolution 49/75K on December 15, 1994, in which it resolved to submit a request for an advisory opinion to the ICJ on the following question: "Is the threat or use of nuclear weapons in any circumstance permitted under international law?"[43] The Court found that it had jurisdiction to answer the question thus posed by the General Assembly[44] and ultimately issued its advisory opinion on July 8, 1996. As an advisory opinion, the ruling itself was nonbinding, but the legal opinion of the highest international judicial authority in the world nonetheless carries substantial persuasive weight.[45] The contents of the advisory opinion will be explored more thoroughly in the next section.

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38. U.N. Charter art. 96(1).

39. *Id.* art. 96(2).

40. Legality of the Use by a State of Nuclear Weapons in Armed Conflict, Advisory Opinion, 1996 I.C.J. 66, ¶ 1 (July 8).

41. *Id.* ¶ 32.

42. *Id.* ¶ 31.

43. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 1.

44. *Id.* ¶ 19.

45. Schmitt, *supra* note 37, at 93.

IV. THE NUCLEAR WEAPONS ADVISORY OPINION

The ICJ's advisory opinion in response to the request by the United Nations General Assembly represents an authoritative evaluation of the legality of the use of nuclear weapons, though as an advisory opinion, it is not binding.[46] Other than the 1963 Tokyo district court ruling in *Shimoda v. State*,[47] it is the only opinion issued by a court that bears directly on the threat or use of nuclear weapons. *Shimoda* remains the only court case specifically on the use of nuclear weapons[48] and thus yields helpful insights into how the international law in effect in 1945 applied to the specific facts of the attacks on Hiroshima and Nagasaki. However, based on substantial technological and legal developments since the use of those nuclear weapons against Japan and the broader legal question posed to the ICJ in its 1996 advisory opinion, the ICJ opinion develops a more generally applicable and modern view of the legal landscape governing the use of nuclear weapons.

Thus, beyond the limited circumstance of the use of a tactical nuclear weapon against a city, the *Shimoda* case doesn't bear directly on some of the broader questions encountered by the ICJ as it considered the specter of global thermonuclear war.[49] Therefore, the bulk of this analysis will center on the ICJ advisory opinion, which articulates a legal framework broad enough to capture both a Hiroshima-like attack as well as the far more destructive attacks of the thermonuclear warheads that compose the bulk (in terms of explosive yield) of both America and Russia's nuclear arsenals.

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46. *Id.*

47. Shimoda et al. v. The State, 32 Int'l. L. Rep. 626 (Dist. Ct. of Tokyo 1963) (Japan).

48. GARY SOLIS, THE LAW OF ARMED CONFLICT 633 (3d ed. 2022) (noting that *Shimoda* is the only instance of a court reviewing the legality of the actual use of a nuclear weapon).

49. In his dissenting opinion to the ICJ's *Nuclear Weapons* advisory opinion, Judge Koroma highlighted the difference between the Hiroshima attack and the destructive capacity in the arsenals of the nuclear powers as of 1996:

> According to the material before the Court, it is estimated that more than 40,000 nuclear warheads exist in the world today with a total destructive capacity around a million times greater than that of the bomb which devastated Hiroshima. A single nuclear bomb detonated over a large city is said to be capable of killing more than 1 million people. These weapons, if used massively, could result in the annihilation of the human race and the extinction of human civilization.

Nuclear Weapons Advisory Opinion, *supra* note 6, at 556 (dissenting opinion of Koroma, J.).

The ICJ's contested central holding in paragraph 105(2)(E) of its advisory opinion was that despite the threat or use of nuclear weapons being "generally contrary"[50] to international humanitarian law, the Court lacked adequate facts on which to definitively rule on the legality of the use of nuclear weapons in "an extreme circumstance of self-defence, in which the very survival of a State would be at stake."[51] This holding was reached on a seven-to-seven vote, which was broken by the vote of the ICJ President. In a combination of declarations, dissenting opinions, and separate opinions, the various ICJ judges focused much of their discussion on lamenting and seeking to clarify the ambiguity of what exactly this non-finding relative to "extreme circumstance" actually meant.[52] The judges accurately anticipated criticism of the apparent equivocation by the Court on the key question posed to it.[53]

However, much of the controversy and debate over what paragraph 105(2)(E) means overlooks the clarity the opinion provides to military commanders charged with conducting a nuclear strike. The Court was unanimous in holding that both the *jus in bello*[54] and *jus ad bellum* govern the use of nuclear weapons.[55] The reason for the oft-expressed frustration with the ICJ opinion in this case seems to be that the Court and many subsequent legal commentators were engaged in an effort to answer a question that is fundamentally different than the question that presents itself to a military commander responding to a launch order. The Court struggled to provide a clear, satisfying answer to the question posed to it by the UN General Assembly, namely, "Is the threat or use of nuclear weapons in any circumstance permitted under international law?"[56] The Court was conscious that it did not

50. *Id.* ¶ 105(2)(E).

51. *Id.*

52. *See, e.g.*, *id.* at 294 (separate opinion of Ranjeva, J.) ("I consider that the second clause of paragraph 2E raises problems of interpretation which may impair the clarity of the rule of law").

53. *Id.* at 272, ¶ 17 (declaration of Bedjaoui, J.) ("The Court is obviously aware that, at first sight, its reply to the General Assembly is unsatisfactory").

54. *Id.* ¶ 105(2)(C), (D) ("Unanimously, a threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict, particularly those of the principles and rules of international humanitarian law, as well as with specific obligations under treaties and other undertakings which expressly deal with nuclear weapons").

55. *Id.* ¶ 105(2)(C) ("Unanimously, [a] threat or use of force by means of nuclear weapons that is contrary to Article 2, paragraph 4, of the United Nations Charter and that fails to meet all the requirements of Article 51, is unlawful").

56. *Id.* ¶ 1.

have sufficient facts available to it to definitively find the use of nuclear weapons to be illegal in every possible scenario.[57]

The military commander, however, need not answer such a broad question. When reading a launch order, the military commander is not considering hypotheticals but is rather presented with a specific set of facts related to a finite number of targets in a particular set of circumstances. Unlike the ICJ, the military commander only needs to determine whether *this* nuclear launch order is legal. That is a question that is answerable by applying the relevant legal framework identified by the ICJ in its unanimous holdings.

A. Legal Framework for Assessing the Use of Nuclear Weapons

The ICJ unanimously held in paragraphs 105(2)(C) and 105(2)(D) of its advisory opinion that the use of nuclear weapons was legally constrained primarily by the UN Charter and international humanitarian law. Though unanimous, these holdings were by no means foreordained. As Judge Koroma pointed out in his dissenting opinion, these holdings were monumental, writing "[f]or the first time in its history, indeed in the history of any tribunal of similar standing, the Court has declared and confirmed that nuclear weapons are subject to international law."[58] The law that applied consisted primarily of considerations of *jus ad bellum* and *jus in bello*, both of which need to be independently satisfied in order for the launch to be legal.[59]

Jus ad bellum is the body of law governing the use of force between States, while *jus in bello* is the body of law that applies to the actual conduct of hostilities.[60] Put another way, *jus ad bellum* is focused on the overall decision to use force in international relations between States, whereas *jus in bello* focuses on the details of how the force is applied on the battlefields of the conflict, including details such as which weapons can be used and in what manner, who can be targeted, and what protections exist for the victims of war. The *jus ad bellum* considerations of launching a nuclear strike involve evaluating a

57. *Id.* ¶ 95 ("Nevertheless, the Court considers that it does not have sufficient elements to enable it to conclude with certainty that the use of nuclear weapons would necessarily be at variance with the principles and rules of law applicable in armed conflict in any circumstance").

58. *Id.* at 579 (dissenting opinion of Koroma, J.).

59. Jasmine Moussa, *The Separation of Jus Ad Bellum and Jus In Bello, in* NUCLEAR WEAPONS UNDER INTERNATIONAL LAW 59, 69 (Gro Nystuen et al. eds., 2014).

60. BOOTHBY & VON HEINEGG, *supra* note 36, at 28.

proposed attack under Articles 2(4) and 51 of the UN Charter,[61] which creates a high, if not insurmountable, hurdle for the use of nuclear weapons. However, a full examination of the application of *jus ad bellum* to the use of nuclear weapons is beyond the scope of this article, which will focus instead on examining the *jus in bello*-related holdings of the advisory opinion. As will be shown in the analysis of the potential use of nuclear weapons in Russia's war against Ukraine, a *jus in bello* analysis is more than sufficient to identify most, if not all, instances of an illegal nuclear launch order.

Providing additional support for focusing legal analysis primarily on the humanitarian principles of *jus in bello*, the ICJ's advisory opinion noted that even if the *jus ad bellum* analysis of a specific strike suggests the use of nuclear weapons would be lawful under an extreme scenario of self-defense, that specific use of force "must, in order to be lawful, also meet the requirements of the law applicable in armed conflict which comprise in particular the principles and rules of humanitarian law."[62] Therefore, the remainder of this article will refrain from an in-depth *jus ad bellum* analysis and focus instead on identifying and applying the relevant "principles and rules of humanitarian law," which constitute the core of *jus in bello* legal analysis. Although the ICJ also discusses the law of neutrality as a part of the broader law applicable in armed conflict,[63] and therefore also applicable to *jus in bello* analysis of nuclear weapons, this article will focus on the humanitarian law portion of *jus in bello*. The following legal analysis will likewise limit its focus to the *use* of nuclear weapons, as opposed to the *threat* of nuclear weapons, which was also addressed in the advisory opinion.[64]

The ICJ unanimously held in paragraph 105(2)(D) of its advisory opinion that:

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61. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 105(2)(C).

62. *Id.* ¶ 42.

63. *Id.* ¶ 89 ("The Court finds that as in the case of the principles of humanitarian law applicable in armed conflict, international law leaves no doubt that the principle of neutrality, whatever its content, which is of a fundamental character similar to that of the humanitarian principles and rules, is applicable . . . to all international armed conflict, whatever type of weapons might be used").

64. *Id.* ¶ 105(2)(C)–(E). All three holdings explicitly reference both threats and use of nuclear weapons. Although these three paragraphs from the advisory opinion are frequently referenced in this article, the focus of this article is limited to the actual use of nuclear weapons, as opposed to threats. The legal question of what constitutes a prohibited threat under international law is less settled than the types of military attacks that are prohibited. For more discussion on the legality of threats with nuclear weapons, *see* Gro Nystuen, *Threats of Use of Nuclear Weapons and International Humanitarian Law*, *in* NUCLEAR WEAPONS UNDER INTERNATIONAL LAW 148 (Gro Nystuen et al. eds., 2014).

> A threat or use of nuclear weapons should also be compatible with the requirements of the international law applicable in armed conflict, particularly those of the principles and rules of international humanitarian law, as well as with specific obligations under treaties and other undertakings which expressly deal with nuclear weapons.

While this holding mentions "treaties and undertakings which expressly deal with nuclear weapons,"[65] as the Court acknowledged in its first two holdings, "[t]here is in neither customary nor conventional international law any specific authorization"[66] or "any comprehensive and universal prohibition of the threat or use of nuclear weapons as such."[67] This means that of the two primary sources of binding international law, customary and conventional (the latter of which is composed of formal agreements such as treaties),[68] there exists no law that has been developed that either expressly authorizes or prohibits the use of nuclear weapons.

Of those treaties that do exist relating to nuclear weapons, such as the Nuclear Non-Proliferation Treaty, the Court found that none of them create any blanket authorization or prohibition on the use of nuclear weapons.[69] However, in this same paragraph, the ICJ makes it very clear that the lack of a specific treaty or customary law relating directly to the use of nuclear weapons does not mean their use falls outside the purview of international law. Instead, the Court clearly and unanimously held that any use of nuclear weapons must comply with the "principles and rules of international humanitarian law."[70] The effect of this holding is to apply the same body of law, primarily composed of IHL, that governs the use of any force in any armed conflict to any potential use of nuclear weapons.[71]

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65. The ICJ *Nuclear Weapons* advisory opinion paragraphs 105(2)(A) and 105(2)(B) start with this identical wording before diverging to discuss the issues of authorization in 2(A) and prohibition in 2(B).

66. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 105(2)(A).

67. *Id.* ¶ 105(2)(B).

68. The ICJ opinion refers to "conventional international law" more frequently as "treaty law." These terms are often used interchangeably, as the ICJ opinion illustrates.

69. *See id.* ¶ 105(2)(A)–(B).

70. *Id.* ¶ 105(2)(D).

71. *See id.* ¶ 25 (explaining that the *lex specialis* in war or hostilities is "the law applicable in armed conflict which is designed to regulate the conduct of hostilities"). In paragraph 51 of the advisory opinion the Court emphasizes the connection between humanitarian law and the law applicable in armed conflict, stating that it will "examine the question put to it in the light of the law applicable in armed conflict proper, i.e. the principles and rules of humanitarian law applicable in armed conflict, and the law of neutrality." Although the law

While the consensus on the ICJ that IHL governed the use of nuclear weapons has justifiably been hailed as a significant achievement,[72] there has nonetheless been criticism about the clarity of the opinion regarding which IHL principles the Court was referring to and exactly how those principles apply to the use of a class of weapons which the Court repeatedly acknowledged as "unique."[73] An example of such criticism can be seen in the dissenting opinion of Judge Higgins, who agreed with the finding that IHL governed the use of nuclear weapons but nonetheless criticized the advisory opinion for failing to "explain, elaborate and apply the key elements of humanitarian law that it identifies."[74] Judge Higgins points to a valid weakness in the advisory opinion. Despite definitively stating that IHL governs the use of nuclear weapons, the Court does not articulate a comprehensive view of those principles of IHL that apply and how those principles apply to this unique weapon.

Two principles that the ICJ identified in the opinion as the "cardinal principles" making up "the fabric of humanitarian law" are the principles of distinction and unnecessary suffering.[75] These principles were found to have binding effect as "intransgressible principles of international customary law,"[76] meaning they are legally binding limitations on the use of nuclear weapons notwithstanding the noted absence of a binding treaty relating to

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of neutrality is often considered a part of the law of armed conflict, along with humanitarian law, and the Court does address the law of neutrality in its opinion, a detailed examination of the law of neutrality is beyond the scope of this article and in this author's opinion not likely to add additional value to the legal analysis performed by a military commander contemplating a specific nuclear strike when that commander is already applying IHL.

72. *See, e.g.*, *id.* at 579 (dissenting opinion of Koroma, J.) ("This finding [regarding the first paragraph of ¶ 105(2)(E)], though qualified, should be regarded as of normative importance, when taken together with the other conclusions reached by the Court. Among other things, it is a rejection of the argument that since humanitarian law pre-dated the invention of nuclear weapons, it could not therefore be applicable to those weapons.").

73. *Id.* ¶¶ 35–36, 95.

74. *Id.* at 584 (dissenting opinion of Higgins, J.).

75. *Id.* ¶ 78–79.

76. *Id.* ¶ 79.

the use of nuclear weapons. Several ICJ judges[77] and commentators[78] have indicated that in addition to these two principles, there are related IHL principles that likewise have binding effect. Though commentators sometimes differ as to the terminology applied, a third IHL principle of proportionality[79] is very often cited to have the same customary law status as the principles of distinction and unnecessary suffering.[80] One could argue that proportionality is best understood to fall under the broad definition of distinction adopted by the ICJ and thus is implicit in its wording, but for practical purposes, treating proportionality as a third binding principle rather than lumping it under a broad understanding of distinction may allow for a more

77. *See id.* at 587 (dissenting opinion of Higgins, J.) ("The principle of proportionality, even if finding no specific mention [in the majority opinion] is reflected in many provisions of Additional Protocol I to the Geneva Conventions of 1949"); *see also id.* at 311 (dissenting opinion of Scwhebel, J.) (stating that IHL principles are "essentially proportionality in the degree of force applied, discrimination in the application of force as between combatants and civilians, and avoidance of unnecessary suffering"); *see also id.* at 497 (dissenting opinion of Weeramantry, J.) (suggesting a list of seven principles of international humanitarian law, including as the first three principles "prohibition causing unnecessary suffering," "the principle of proportionality," and "the principle of discrimination between combatants and non-combatants"); *see also* Stuart Casey-Maslen, *The Use of Nuclear Weapons Under Rules Governing the Conduct of Hostilities*, *in* NUCLEAR WEAPONS UNDER INTERNATIONAL LAW 91, 91 (Gro Nystuen et al. eds., 2014) (stating "[t]his chapter focuses on the legality of the use of nuclear weapons under three core rules of international humanitarian law (IHL): distinction, proportionality and precautions in attacks"; *see also* SOLIS, *supra* note 48, at 209–10, 210 n.2 (basing his identification of four IHL principles—distinction, military necessity, unnecessary suffering, and proportionality—on the ICJ Nuclear Weapons advisory opinion).

78. *See, e.g.*, Schmitt, *supra* note 37, at 108 ("For instance, the Court blends the *jus in bello* proportionality principle into the concept of distinction and then complicates the matter by failing to address the criterion fully").

79. Though the advisory opinion discusses the principle of proportionality, it only explores how proportionality applies in a *jus ad bellum* context, which is similar to but distinct from the *jus in bello* principle of proportionality. *See* Nuclear Weapons Advisory Opinion, *supra* note 6, ¶¶ 37–42. The Court also mentions proportionality when discussing environmental impacts of a nuclear strike, but its wording is imprecise. The fact that when proportionality is discussed with respect to the environment it is coupled with the principle of necessity, and those two principles are only expressly addressed in a *jus ad bellum* context in the remainder of the advisory opinion, suggests the Court was contemplating a *jus ad bellum* analysis. However, the context within which the Court places this reference is in a review of treaties that are core IHL treaties. While it is clear that environmental damage was considered by the Court to be legally relevant, its applicability to *jus ad bellum*, *jus in bello*, or both is not made entirely clear. Therefore, exclusively environmental damage is not further addressed in this article. *See id.* ¶¶ 27–33.

80. *See, e.g.*, *id.* at 587 (dissenting opinion of Higgins, J.); *see also* Schmitt, *supra* note 37, at 108.

disciplined treatment of the important requirements of the principle of proportionality. Therefore, this analysis will consider distinction, unnecessary suffering, and proportionality[81] to be the core IHL principles that should form the basis of analyzing any contemplated nuclear attack.[82]

1. IHL Principle of Distinction

The first of two "cardinal principles"[83] of international humanitarian law identified in the ICJ's opinion, the principle of distinction "is aimed at the protection of the civilian population and civilian objects. States must never make civilians the object of attack and must consequently never use weapons that are incapable of distinguishing between civilian and military targets."[84]

The principle of distinction, as articulated by the Court, thus includes two major requirements. The first is that regardless of the weapon employed, civilians can never be the target of a military attack. This gives the military commander a bright line test when considering whether a contemplated nuclear strike is legal. If civilians, the civilian population, and/or civilian objects are the target of the nuclear strike, it is prohibited by the principle of distinction and, therefore, illegal under IHL. This analysis has no military necessity exception nor a balancing test between the magnitude of harm and military advantage. Under customary IHL rules, there are no circumstances that can exist to justify making civilians, the civilian population, and/or civilian objects the target of any military attack, including a nuclear strike.[85] Therefore,

81. It should be noted here that the *jus ad bellum* analysis described elsewhere in this article also has a proportionality term, but it is defined and applied somewhat differently and independently of the *jus in bello* version of proportionality that is being referred to here.

82. In addition to proportionality often being included as a core principle by IHL legal commentators, in 2017 the general in charge of U.S. Strategic Command, General John Hyten, whose advice would have been essential in any American use of nuclear weapons during his tenure, also indicated that the principles of the law of armed conflict included "distinction, proportionality, [and] unnecessary suffering." Katherine E. McKinney, Scott D. Sagan & Allen S. Weiner, *Why the Atomic Bombing of Hiroshima Would Be Illegal Today*, 76 BULLETIN OF THE ATOMIC SCIENTISTS 157, 160 (2020). Though not a legal authority, as a former commander in charge of the entire American nuclear arsenal General Hyten's endorsement of these three principles, and his application of them to the use of nuclear weapons, should be highly persuasive to subordinate military commanders.

83. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

84. *Id.*

85. The ICRC *Customary International Humanitarian Law Study* contains a list of 161 rules that, based on the ICRC's analysis, constitute customary IHL rules. This first prong of the

the first IHL filter that a military commander considering a nuclear launch must apply is relatively simple: Are the weapons targeted at civilians, the civilian population, and/or civilian objects? If so, the attack is illegal under this rule. This targeting prohibition should not be confused with a prohibition against causing any civilian harm in an otherwise lawful military strike–it merely prohibits making civilian harm the *object* of the strike. This prong of the distinction principle could be thought of as asking the question, "What target am I aiming at?" which is altogether different from the question, "What else will be destroyed when I attack this target?" The principle of proportionality, to be discussed later in the article, deals with the question of collateral or incidental civilian harm that flows from a military strike on an otherwise lawful military objective.

The second major element to the principle of distinction is the prohibition on using "weapons that are incapable of distinguishing between civilian and military targets."[86] The Court explains this element of the principle of distinction as being supportive of the prohibition on targeting civilians, implying that a party to an armed conflict cannot get around the legal prohibition on targeting civilians by simply using a weapon that is incapable of being accurately targeted only at military objectives. This clarifies that there is a positive obligation on parties to use force in a manner that achieves distinction between civilians and military objectives, as opposed to merely avoiding consciously putting civilians in the crosshairs. This concept is frequently referred to as the prohibition against indiscriminate attacks, terminology that is consistent with a subsequent comment by the ICJ in its opinion stating that "[i]n conformity with the aforementioned principles [of distinction and unnecessary suffering], humanitarian law, at a very early stage, prohibited certain types of weapons . . . because of their indiscriminate effect on combatants and civilians."[87]

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principle of distinction is captured in the first rule on the ICRC list. *See* 1 CUSTOMARY INTERNATIONAL HUMANITARIAN LAW 3 (Jean-Marie Henckaerts & Louise Doswald-Beck eds., 2005). This helpful ICRC text provides a thorough analysis of the history of each rule identified as having customary international law status, to include reviews of the development of relevant treaty law, State practice, and a comparison of the rules in international and non-international armed conflicts.

86. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

87. *Id.*

Additional Protocol I, Articles 51(4) and 51(5),[88] should be utilized as a guide by military commanders contemplating a nuclear strike to determine if the ordered strike constitutes an indiscriminate attack. While the ICJ does not fully spell out what constitutes indiscriminate attacks in its advisory opinion, Article 51(4) of Additional Protocol I has a definition of indiscriminate attacks that is widely accepted to constitute a reflection of customary international law.[89] Although Additional Protocol I was not intended to introduce any new prohibitions on the use of nuclear weapons,[90] to the extent that its provisions represent customary IHL, the substance of those provisions is nonetheless binding on all States for all weapons.[91] Article 51(4) of Additional Protocol I reads:

> Indiscriminate attacks are prohibited. Indiscriminate attacks are:
> (a) those which are not directed at a specific military objective;

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88. Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts art. 51(4)–(5), June 8, 1977, 1125 U.N.T.S. 3 [hereinafter Additional Protocol I].

89. Michael J. Matheson, *Session One: The United States Position on the Relation of Customary International Law to the 1977 Protocols Additional to the 1949 Geneva Conventions*, 2 AMERICAN UNIVERSITY INTERNATIONAL LAW REVIEW 419, 426 (1987). This article contains the text of a speech provided by Michael Matheson, a Deputy Legal Adviser at the U.S. State Department who would later serve as one of the attorneys representing the United States government before the ICJ in written and oral proceedings relating to its 1996 advisory opinion on nuclear weapons. In the speech, Matheson explains that the United States views a wide range of Additional Protocol I provisions to reflect customary international law, to include the portions of Article 51 discussed here. Note that Russia is a party to Additional Protocol I and therefore needs no such reliance on discerning customary international law from the text of Additional Protocol I to determine its applicability. The United States has signed but never ratified the treaty.

90. Casey-Maslen, *supra* note 77, at 91–92 ("Upon ratifying 1977 Additional Protocol I, France and the United Kingdom each lodged reservations to the effect that they understood the new rules governing the conduct of hostilities introduced by the Protocol, and which do not form part of the corpus of customary international law today, not to apply to nuclear weapons. For purposes of this chapter, these reservations are not relevant, as the principles discussed herein are rules of customary international humanitarian law binding upon all states and are therefore not among the 'new rules' of the Protocol to which France and the UK objected." The "principles discussed herein" were distinction, proportionality, and precaution.).

91. McKinney et al*., supra* note 82, at 160 ("although the United States did not ratify, and is therefore not a party to, Additional Protocol I of the Geneva Convention, the US government has long accepted that the principles of distinction, proportionality, and precaution that were codified in Protocol I reflect binding customary international law and thus are legal obligations" (citations omitted).

> (b) those which employ a method or means of combat which cannot be directed at a specific military objective; or
> (c) those which employ a method or means of combat the effects of which cannot be limited as required by this protocol;
> and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction.[92]

Therefore, to avoid an indiscriminate attack, a military commander must not launch a nuclear strike that does not have a specific military objective as its target. That military commander also must use a nuclear weapon capable of being directed at that specific military objective. Finally, the military commander must ensure that the effects of the weapon can be limited sufficiently to avoid violating other relevant rules of IHL.[93] This, at a minimum, means the effects of the weapon must distinguish between civilians and combatants[94] and cannot transgress the two remaining principles yet to be discussed: proportionality and unnecessary suffering.

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92. Additional Protocol I, *supra* note 88, art. 51(4).

93. Notice that this paraphrasing slightly modifies the text of Additional Protocol I Article 51(4)(c), replacing it with the ICRC customary IHL Rule 12 wording in acknowledgment of the fact that the text in Additional Protocol I captures a customary principle, but the customary principle is broader than just the text of the protocol. Thus, although Additional Protocol I provides a treaty-based formulation of a customary principle, the ICRC interpretation of the definition of indiscriminate attacks replaces "the protocol" from the final words of paragraph 4(c) with "international humanitarian law." This is largely a distinction without a difference, but in light of the United States not ratifying Additional Protocol I it is a distinction worth pointing out. *See* 1 CUSTOMARY INTERNATIONAL HUMANITARIAN LAW, *supra* note 85, at 40.

94. The word "combatant" has a fairly specific and sometimes charged meaning within IHL and is generally used to distinguish someone who fights for the armed forces of a State engaged in a conflict from someone who fights in the conflict without being a member of the armed forces. *See* Additional Protocol I, *supra* note 88, art. 43(2). This distinction takes on legal significance when considering what happens to someone captured during an armed conflict. A combatant is immune from prosecution for their warlike acts that are compliant with IHL and also entitled to prisoner of war status, whereas someone who is conducting warlike acts as, say, an insurgent or other force not meeting the requirements for combatant status can be prosecuted for those warlike acts, and they are not entitled to prisoner of war status. The ICJ does not address this distinction in its advisory opinion on nuclear weapons and appears to use the word "combatant" as a catch-all term for persons participating in an armed conflict, regardless of their technical legal classification. Following the example of the ICJ in its advisory opinion, this article will use the term "combatant" in its general sense as opposed to seeking to draw distinctions based on the classification of the conflict or different military organizations. In the realm of harm caused by nuclear weapons, there is

The principle of distinction makes it clear that the military commander must know what they are shooting at in order to ensure compliance. As the commander launching the nuclear weapon, they have a positive duty to discern sufficiently what the target is and to evaluate its legality against the prohibition against targeting civilians, the civilian population, and/or civilian objects, as well as to ensure that the attack is not indiscriminate. Just as a blindfolded sniper would be violating distinction by firing towards an area of mixed civilians and combatants, so too would a military commander launching a nuclear weapon fail to satisfy their affirmative duty under the principle of distinction if they likewise did not know what they were being directed to attack. Thus, in addition to placing specific targeting and weapons employment limitations on military commanders, the principle of distinction also implicitly prohibits firing blindly by launching a nuclear weapon without possessing an adequate understanding of the nature of its target.[95]

2. IHL Principle Prohibiting Unnecessary Suffering

The second of the two cardinal principles of international humanitarian law identified by the ICJ in its opinion was unnecessary suffering, explained by the Court to mean the following:

> According to the second principle, it is prohibited to cause unnecessary suffering to combatants: it is accordingly prohibited to use weapons causing them such harm or uselessly aggravating their suffering. In application

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no indication in the ICJ's advisory opinion that one's eligibility for prisoner of war status has any legal relevance to the question of lawful or unlawful nuclear strikes.

95. What the requisite level of knowledge about a particular target would be is highly fact-dependent, but it would likely be guided by whether the commander has sufficient awareness of the nature of the target to be able to conduct some reasonable level of IHL analysis under the circumstances prevailing at the time. In many instances, it would not be reasonable to expect a military commander to do things such as cross-check every latitude and longitude against a database of civilian and military targets. There should be some expectation that the targeting information provided is accurate, especially in the extremely time sensitive scenario when a nuclear launch is ordered in an extreme circumstance of self-defense. There is no expectation of perfect knowledge or flawless decision making in the realm of IHL, but there is an obligation to make a good faith effort to carry out IHL's requirements. The military commander should have some reasonable basis for believing that the target being struck passes the legal tests required by IHL. What is reasonable will depend on the circumstances surrounding the launch order.

> of that second principle, States do not have unlimited freedom of choice of means in the weapons they use.[96]

Put another way, the only suffering that is lawful to inflict on combatants is that which is necessary in order to achieve lawful military objectives. Suffering that is superfluous in attaining those military objectives is prohibited by the prohibition on the infliction of unnecessary suffering. While some weapons are explicitly banned or heavily regulated by treaties that were adopted, at least in part, as a result of the acknowledgment that the degree of suffering caused by the weapon could never be justified by a military advantage, nuclear weapons are not among them.[97] However, the ICJ's opinion holds that the prohibition against unnecessary suffering operates as customary international law, making the absence of a treaty regulating the use of nuclear weapons irrelevant to the prohibition's applicability to the use of those weapons.

Two more clarifications on the principle of unnecessary suffering are appropriate here. The first clarification is that the principle prohibiting unnecessary suffering is exclusively concerned with the protection of combatants.[98] This limitation to combatants does not mean that unnecessary suffering is somehow permitted in civilians, however. Civilian harm is already regulated by the other customary principles relating to distinction and proportionality. Secondly, unlike the principle of distinction, this principle includes a balancing test. Inflicting horrendous suffering on combatants is not what is prohibited. Instead, what is prohibited is only that suffering that is excessive compared to the military advantage sought to be achieved by the infliction of the suffering.[99] In its opinion, the ICJ provides a formulation of the necessary balancing test describing unnecessary suffering as "a harm greater

96. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

97. *See, e.g.*, Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to be Excessively Injurious or to Have Indiscriminate Effects, Oct. 10, 1980, 1342 U.N.T.S. 137 [hereinafter CCW]. The third paragraph of the preamble uses wording very similar to that cited in this section by the ICJ to define the principle of unnecessary suffering. *See also* Simon O'Connor, *Nuclear Weapons and the Unnecessary Suffering Rule*, *in* NUCLEAR WEAPONS UNDER INTERNATIONAL LAW 128, 134 (Gro Nystuen et al. eds., 2014) (discussing the connection between the CCW treaty and observing that "the unnecessary suffering rule can thus be seen as a main rationale behind four of the five CCW protocols").

98. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

99. DINSTEIN, *supra* note 31, at 85.

than that unavoidable to achieve legitimate military objectives."[100] Therefore, in the absence of a treaty banning the use of nuclear weapons outright, the military commander considering a nuclear launch must consider the degree of suffering likely to be inflicted on combatants and weigh that against the military advantage of the nuclear strike.

3. IHL Principle of Proportionality

The principle of proportionality is broadly accepted as a core principle of IHL, which has the force of customary international law.[101] The silence of the ICJ in its advisory opinion on proportionality in the *jus in bello* context[102] should not be understood to mean that the ICJ did not think it relevant to analyze the legality of a nuclear strike. The unanimous holding of the ICJ in paragraph 105(2)(D) of its advisory opinion made it clear that a nuclear strike must be compatible with "the principles and rules of international humanitarian law."[103] Even the more contested holding in paragraph 105(2)(E), which has received much of the attention of legal commentators, likewise states that the "threat or use of nuclear weapons generally [would] be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law."[104] Thus, although in its discussion of the legal basis for its conclusions relating to IHL, the Court only referred explicitly to the principles of distinction and unnecessary suffering, the formal conclusions of the advisory opinion nonetheless broadly

100. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

101. *See, e.g.*, 1 CUSTOMARY INTERNATIONAL HUMANITARIAN LAW, *supra* note 85, at 46 (Rule 14); *see also* LAW OF WAR MANUAL, *supra* note 10, § 2.1 (listing proportionality as one of the law of war principles).

102. Although the principle of proportionality is discussed by the ICJ, the discussion is limited to the context of a *jus ad bellum* analysis for determining the lawfulness of an action of self-defense. Though similar, these two principles of proportionality are distinct and independent. *See* Nuclear Weapons Advisory Opinion, *supra* note 6, ¶¶ 37–42. *See also* Moussa, *supra* note 59, at 80–81 (explaining the difference between *jus ad bellum* and *jus in bello* principles of proportionality, with the former version of proportionality focused on evaluating the "overall force that can be used to respond to an unlawful use of force" while the latter considers "the anticipated military advantage of a particular attack against the expected civilian harm").

103. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 105(2)(D).

104. *Id.* ¶ 105(2)(E). Note that the first clause of this contested holding is not the controversial part. Rather, the second clause (not quoted here but discussed later in this article) has received much of the attention of the ICJ judges in their individual filings and from legal commentators.

encompass the entire body of international humanitarian law, which is not limited to just those two principles. Additionally, proportionality is sometimes grouped under the principle of distinction as a subordinate requirement prohibiting a specific type of indiscriminate attack.[105] Therefore, there can be no question that the principle of proportionality provides another legal test that a nuclear strike must satisfy.

The most common formulation of the principle of proportionality is contained in Additional Protocol I, Article 51(5)(b), and is repeated in Article 57(2)(a)(iii) and Article 57(2)(b).[106] The principle of proportionality therein prohibits any attack "which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated."[107] Proportionality analysis considers only civilian harm and the "concrete and direct" military advantage, excluding consideration of harm to combatants that, to the extent it is regulated by the core principles, is regulated under the principle prohibiting the infliction of unnecessary suffering.[108] A balancing test is required to determine if a contemplated nuclear strike complies with the principle of proportionality. Assuming that a contemplated strike targets a valid military objective and is not indiscriminate, thus satisfying the principle of distinction, the principle of proportionality then considers if the degree of incidental (also known as collateral) harm to civilians is justified by the military advantage.

Just as a horrendous degree of suffering inflicted on combatants is not outright prohibited by the principle of unnecessary suffering, neither does the principle of proportionality automatically ban exceptionally high levels

105. *See* Additional Protocol I, *supra* note 88, art. 51(5) (listing a disproportionate attack as one of two examples of an indiscriminate attack, describing this manner of indiscriminate attack as "an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated." This wording is the core of the IHL principle of proportionality.).

106. *See* 1 CUSTOMARY INTERNATIONAL HUMANITARIAN LAW, *supra* note 85, at 46 (showing nearly identical wording in Rule 14); *see also* BOOTHBY & VON HEINEGG, *supra* note 36, at 96 (adapting the Additional Protocol I formulation to nuclear weapons); *see also* SOLIS, *supra* note 48, at 228 (adopting the Additional Protocol I wording as the articulation of the principle of proportionality).

107. Additional Protocol I, *supra* note 88, art. 51(5)(b). Note identical wording in Additional Protocol I Article 57(2)(a)(iii) and 57(2)(b) prohibiting the launching of an attack or requiring the cancellation of an attack expected to create disproportionate harm.

108. SOLIS *supra* note 48, at 229 ("Just as unnecessary suffering applies only to enemy fighters, proportionality applies only to civilians").

of civilian harm of the sort that might be anticipated in a nuclear strike.[109] Rather, the military commander must weigh the likely degree of civilian harm against the expected military advantage. The phrasing of the principle of proportionality limits the military advantage to be considered in this analysis to the "concrete and direct" military advantage.

The military commander contemplating a nuclear strike will encounter a great deal of uncertainty about the number of persons of various classifications expected to be harmed, the quantity and duration of the various types of harms that will manifest from the strike, as well as the actual military advantage to be gained. This does not make applying these principles futile, however. These principles can still be used to identify manifestly unlawful launch orders, even if they might leave a great deal of uncertainty about the legality of some conceivable orders that, based on the given circumstances, may constitute a closer call.

V. APPLICATION OF IHL TO THE WAR IN UKRAINE

From the moment Russian President Vladimir Putin announced Russia's invasion of Ukraine in February of 2022, high-ranking Russian government officials, including Putin himself, have indirectly and sometimes explicitly threatened to use nuclear weapons in furtherance of the war.[110] These verbal

109. For a review of the competing positions on the question of whether extensive civilian damage can be justified by a sufficiently weighty military advantage, *see* Casey-Maslen, *supra* note 77, at 115–16 (reviewing the divergent positions of the ICRC and Yoram Dinstein). In this author's opinion, the text of Additional Protocol I, Article 51(5), does not provide any grounds for an implied maximum cap on civilian harm despite the ICRC's assertion, quoted by Casey-Maslen, that "[t]he protocol does not provide any justification for attacks which cause extensive civilian losses and damages. Incidental losses and damages should never be extensive." This author is persuaded by Dinstein's response cited by Casey-Maslen that this position is a "misreading of the text."

110. Anton Troianovski & Neil McFarquhar, *Putin Announces Start to "Military Operation" Against Ukraine*, NEW YORK TIMES (Feb. 23, 2022), https://www.nytimes.com/2022/02/23/world/europe/ukraine-russia-invasion.html?searchResultPosition=16. In his speech announcing to the world that he had ordered the invasion of Ukraine, Putin provided an indirect yet impossible to misinterpret threat to use nuclear weapons if necessary to prevail in Ukraine: "Anyone who tries to interfere with us, or even more so, to create threats for our country and our people must know that Russia's response will be immediate and will lead you to such consequences as you have never before experienced in your history." *Id.* This is the typical form that a nuclear threat directly from Putin has taken. These threats generally consist of a combination of thinly veiled references to Russia's large nuclear arsenal combined with a framing of the present conflict as one of an existential nature for Russia. The more explicit nuclear threats often come from those close to Putin such as Foreign

threats have been coupled with actions apparently designed to signal the credibility of those threats, including placing Russia's nuclear forces on high alert,[111] deploying Russian tactical nuclear weapons to the territory of neighboring Belarus,[112] and suspending Russian participation in the New START treaty.[113] Based on the considerable volume and consistency of these comments and actions from the highest levels of the Russian government, there is every reason to take Putin's willingness to use nuclear weapons in this conflict extremely seriously.[114]

These words and actions have placed Russian strategic nuclear forces on notice that they may be asked to launch nuclear strikes in support of the war in Ukraine. This means that for over a year and a half, since the start of the invasion of Ukraine, those Russian military commanders with the responsibility of executing a nuclear launch order have had the opportunity to reflect intensively on what to do in the frighteningly plausible scenario of being ordered to launch a nuclear strike against Ukraine. This portion of the article will walk through examples of plausible attacks and apply the legal framework that governs the use of nuclear weapons to those scenarios. The application of this *jus in bello* legal framework will demonstrate that any plausible launch order from Putin to Russian nuclear forces in support of the

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Minister Sergei Lavrov, Presidential Press Secretary Dmitry Peskov, and especially from Deputy Chairman of the Russian Security Council and former Russian President Dmitry Medvedev, among many other lower ranking government officials and public figures.

111. Dmitry Antonv & Olzhas Auyezov, *Russia's Putin Puts Nuclear Forces On High Alert*, REUTERS (Feb. 27, 2022), https://www.reuters.com/world/europe/russias-putin-puts-nuclear-forces-high-alert-2022-02-27/.

112. *Ukraine War: Putin Confirms First Nuclear Weapons Moved to Belarus*, BBC NEWS (June 17, 2023), https://www.bbc.com/news/world-europe-65932700.

113. BUREAU OF ARMS CONTROL VERIFICATION AND COMPLIANCE, FACT SHEET, U.S. NEW START TREATY AGGREGATE NUMBERS OF STRATEGIC OFFENSIVE ARMS (May 12, 2023), https://www.state.gov/wp-content/uploads/2023/05/05-11-2023-FINAL-May-2023-NST-DATA-FACTSHEET-no-clear-page.pdf. At the time of its suspension, New START was the only nuclear arms control treaty still in effect between Russia and the United States.

114. In a sobering indication of the seriousness with which these threats have been received, in October 2022 President Biden stated that he viewed the crisis as the first time the world faced the "prospect of Armageddon since Kennedy and the Cuban missile crisis." Yasmeen Abutaleb, *Biden Suggests Putin's Nuclear Threats Mean a "Prospect of Armageddon",* WASHINGTON POST (Oct. 6, 2022), https://www.washingtonpost.com/politics/2022/10/06/biden-putin-nuclear-armageddon/. Considering that President Biden is one of two people in the world (the other being Putin) with the ability and authority to order an Armageddon-level nuclear strike, this observation on the risk of nuclear escalation in the present conflict must be given considerable weight.

war in Ukraine would be clearly illegal under international humanitarian law.[115]

A. Tactical Nuclear Strike in a City

This analysis will first address the use of a tactical nuclear weapon against a Ukrainian city by Russia in support of its war against Ukraine. As discussed in Part II above, tactical nuclear weapons are generally much smaller than strategic nuclear weapons, with a yield as low as around 0.3 kilotons and as high as around 50 kilotons.[116] Tactical nuclear weapons find brief mention in the ICJ opinion. The Court only mentions them to skeptically acknowledge that some States had argued in favor of finding nuclear weapons use lawful when using lower-yielding tactical nuclear weapons, but those States failed to provide specific circumstances that would justify the lawful use of these weapons. Therefore, the Court declined to conclude definitively whether the use of a low-yield tactical nuclear weapon could be lawful.[117]

The only court to directly issue a finding on the legality of what would today be considered a tactical-level nuclear strike was the District Court of Tokyo in its 1963 opinion, *Shimoda v. State*.[118] In that case, the court held that "[t]he aerial bombardment with atomic bombs of the cities of Hiroshima and Nagasaki was an illegal act of hostilities according to the rules of international law."[119] The court based its analysis on a finding that under the international law that existed in 1945 the bombing of these cities was a violation of the customary international law prohibiting indiscriminate aerial

115. This conclusion is highly fact dependent, and those facts will be further explored in the subsequent section. This article does not assert that the use of nuclear weapons in all scenarios is per se illegal, as that would go further than the state of international law permits. The ICJ pointedly declined to reach that conclusion in its advisory opinion. The point that will be made in the remainder of the article is that by applying the legal framework articulated by the ICJ in its *Nuclear Weapons Advisory Opinion* to the facts of the war in Ukraine, one is led to the inevitable conclusion that the use of nuclear weapons by Russia against Ukraine would be unlawful under IHL. This article should not be read to reach legal conclusions about other different factual scenarios, though the pattern of analysis for those scenarios would be similar to what is conducted here and, in many cases, would lead to a similar conclusion.

116. Kristensen & Korda, *supra* note 17, at 258.

117. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 94.

118. Shimoda et al. v. The State, 32 Int'l. L. Rep. 626 (Dist. Ct. of Tokyo 1963) (Japan).

119. *Id.* at 627.

bombardment[120] and the prohibition on unnecessary suffering.[121] Although the court still ruled against the plaintiffs in the case on other grounds, and the District Court of Tokyo is not a binding legal authority for Russian military commanders, it nonetheless provides a persuasive example of a court carefully applying the principles of IHL to declare unlawful a specific use of what would today be considered a tactical nuclear weapon.[122] Additionally, *Shimoda* is relevant to Russian military commanders because, as the only court case to rule on the legality of the only nuclear attacks ever conducted in an armed conflict, it is hard to imagine that a future war crimes tribunal would fail to use *Shimoda* as a persuasive reference point in the prosecution of a Russian military commander accused of an unlawful nuclear strike.

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120. *Id.* ("The aerial bombardment with atomic bombs of the cities of Hiroshima and Nagasaki was an illegal act of hostilities according to the rules of international law. It must be regarded as indiscriminate aerial bombardment of undefended cities, even if it was directed at military objectives only, in as much as it resulted in damage comparable to that caused by indiscriminate bombing."); *see also id.* at 631 ("It can therefore be said that the prohibition of indiscriminate aerial bombardment of an undefended city and the principle of military objectives contained therein are rules of customary international law in view of the fact that these are also found in common in the rules of land and sea warfare").

121. *Id.* at 634 ("the act of dropping this bomb may be regarded as contrary to the fundamental principle of the law of war which prohibits the causing of unnecessary suffering").

122. The weapon used in Hiroshima undoubtedly was *used* as a strategic weapon, considering both the decision to target a city and the clear intent to use the weapon to force the Japanese to agree to an unconditional surrender. Those are examples of historically strategic targets and purposes. However, in terms of explosive yield, its destructive power was on the same order of magnitude of what today would widely be described as a tactical nuclear weapon. This highlights one of the reasons that the use of yield alone to distinguish between strategic and tactical nuclear weapons has been criticized. For this reason, a fifteen-kiloton weapon is perhaps best understood as a "non-strategic weapon" as its real source of distinction is that it either does not have the extraordinary power of its "strategic" counterparts and/or it is used against traditional battlefield targets. For example, the United States has a fifteen-kiloton artillery round in its nuclear arsenal. SOLIS, *supra* note 48, at 628. If this weapon, with the same yield as the one dropped on Hiroshima, were used against armored formations in the open, many would probably consider it a tactical strike with a nuclear weapon. However, if that artillery shell was launched against the center of a city, it would be used for a more traditionally strategic purpose. This gets to the heart of the definitional problem identified by both WOOLF, *supra* note 13, at 8–9, and Kristensen & Korda, *supra* note 17, at 254. These reasonable criticisms are well-taken. However, the term "tactical" is used so pervasively to mean "low-yield" that the author retains this less-precise colloquial meaning of the term "tactical" for this article, though it is something of an oversimplification of the issue.

To step through a modern legal analysis of a Hiroshima-esque tactical nuclear attack, one should apply the IHL principles of distinction, unnecessary suffering, and proportionality to a theoretical launch order against a major Ukrainian city.[123] This threat is unfortunately far from hypothetical, as recent remarks from Russian Defense Minister Sergei Shoigu to strike "decision-making centers in Ukrainian territory"[124] provide a thin veil over the often implied and sometimes explicit threat to use Russian nuclear weapons to strike cities both inside and outside of Ukraine. The analysis of a tactical nuclear strike in any city follows a fairly similar flow path, with some customization of the analysis required for things such as population density, the location of the nuclear detonation, the altitude of the nuclear detonation, the wind direction, the location of key civilian infrastructure relative to the blast site, the location and type of valid military objectives within the city, and finally the concrete and direct military advantage to be achieved by targeting military objectives within the city. For purposes of this analysis, the assumption will be that the explosive yield of the nuclear weapon will be approximately fifteen kilotons, consistent with the yield of the weapon detonated at Hiroshima.[125]

1. Applying the Principle of Distinction to a Tactical Nuclear Strike on a City

The first IHL principle to be considered in analyzing this strike is the principle of distinction. As discussed above, the principle of distinction prohibits

123. In March 2023, Russian Security Council Deputy Chairman Dmitry Medvedev went beyond threatening just Ukrainian cities, but also threatened to strike specific non-military locations in Berlin with nuclear weapons. This comment was made in response to the German announcement that, following an arrest warrant issued for Putin by the International Criminal Court, Germany would arrest Putin if he traveled to Berlin. Medvedev stated, "Let's imagine . . . the leader of a nuclear power visits the territory of Germany and is arrested . . . in this case, our assets will fly to hit the Bundestag, the chancellor's office, and so on." Vladimir Isachenkov, *Russia's Security Chief Blasts West, Dangles Nuclear Threats*, ASSOCIATED PRESS (Mar. 23, 2023), https://apnews.com/article/medvedev-nuclear-putin-arrest-warrant-germany-ukraine-6dcde92e06f41a7c5cb7386f7939df33.

124. Andrew Roth, *Russia Threatens Ukraine's "Decision-Making Centres" If Kyiv Uses Western Arms in Crimea*, GUARDIAN (June 20, 2023), https://www.theguardian.com/world/2023/jun/20/russia-threatens-ukraine-decision-making-centres-kyiv-western-arms-crimea.

125. JOHN MALIK, THE YIELDS OF THE HIROSHIMA AND NAGASAKI EXPLOSIONS 1 (1985) (estimating the yield of the explosion at Hiroshima as fifteen kilotons and the explosion at Nagasaki as twenty-one kilotons).

"making civilians the object of attack"[126] and prohibits using "weapons that are incapable of distinguishing between civilian and military targets."[127] These targeting restrictions cover not just civilians but also the civilian population generally, as well as civilian objects.[128] The city itself cannot be considered a military objective for targeting purposes because, although there are likely valid military objectives within the city,[129] there are also hundreds of thousands—if not millions—of civilians[130] along with the civilian objects that support the city's population. The first legal check the military commander must do is to verify that the attack is not targeted at any of these civilians or non-military infrastructure and property. Consider this an aimpoint check—if civilians or civilian objects are in the crosshairs, the strike is illegal, and no further analysis is required.

However, it is not enough just to avoid intentionally aiming at civilians. To avoid violating the second prong of the principle of distinction, the attack must also not be indiscriminate.[131] If there is no specific aimpoint, the first prohibition from directly targeting civilians would be satisfied. However, the strike would still fail the distinction test because the strike would be an indiscriminate attack due to failing to be "directed at a specific military objective."[132] Think of this illegal variation of the strike as being aimed at nothing more precise than, for example, "Kiev," despite Russia possessing the ability of targeting it more precisely. Similarly, if the accuracy of the weapon is such

126. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

127. *Id.*

128. *Id.*

129. While an in-depth review of which objects within a city can be considered lawful is beyond the scope of this article, the basic test for determining whether an object is a lawful military objective is contained in Additional Protocol I, *supra* note 88, art. 52(2) ("Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their *nature*, *location*, *purpose or use* make an effective contribution to military action and whose total or partial destruction, capture, or neutralization, in the circumstances ruling at the time, offers a definite military advantage." (emphasis added)); *see also* Additional Protocol I, *supra* note 88, arts. 53–54 (protecting cultural objects and places of worship as well as objects indispensable to the survival of the civilian population). The distinction between civilian and combatant is generally even simpler to apply. Civilians—unless they are directly participating in hostilities—cannot be considered a lawful military objective for targeting purposes under the principle of distinction. *See* Additional Protocol I, *supra* 88, arts. 48–51.

130. Kiev, for example, is estimated to have a population of three million. *Kiev Population 2023*, WORLD POPULATION REVIEW, https://worldpopulationreview.com/world-cities/kiev-population (last visited Dec. 4, 2023).

131. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

132. Additional Protocol I, *supra* note 88, art. 51(4)(a).

that it cannot be anticipated with any certainty where in the city it will detonate, then the attack would be indiscriminate because it employs "a method or means of combat which cannot be directed at a specific military objective."[133] The final type of nuclear attack that would be considered indiscriminate is one "the effects of which cannot be limited" as required by IHL.[134]

Thus, based on the principle of distinction, the following strikes with a nuclear weapon would be illegal, regardless of collateral damage, explosive yield of the weapon, or the military necessity then existing, and Russian military officers should, therefore, flatly refuse to execute the following ordered strikes if ordered against targets in Ukrainian cities:

1. *A blind launch order that prevents the launching unit from being aware of what they are launching against.* As described in Part IV, the principle of distinction creates a positive duty to distinguish civilians from valid military objectives. Shooting blindly fails to meet this obligation.

2. *A strike intentionally aimed at civilians, civilian objects, or the civilian population generally.* This might be noted by identifying that the aim point of the weapon is anything other than a valid military objective. This might also be identified by either wording in the launch order or other circumstances that make it clear that the primary intention of this strike is to harm the civilian population. One need not look at the actual aim point if the articulated purpose of the launch is to harm civilians, as that would indicate that the aim point is nothing more than a pretext to mask targeting civilians.

3. *A strike that makes the city itself a target.* This fails to achieve any distinction between lawful and unlawful targets. This might be identified by observing that the launch is directed at a seemingly arbitrary point in the city, such as the geographic center, or it could be in the form of an open-ended order to strike the city without any further guidance. The manner in which the aim point for the Hiroshima strike is reported to have been selected is an example

133. *Id.* art. 51(4)(b).

134. *Id.* art. 51(4)(c), with modification to the wording to remove Additional Protocol I's reference to "protocol" and replacing it with the ICRC customary IHL study Rule 12 wording in acknowledgment of the fact that the text in Additional Protocol I captures a customary principle, but the customary principle is broader than just the text of the protocol. 1 CUSTOMARY INTERNATIONAL HUMANITARIAN LAW, *supra* note 85, at 40.

of likely violating this principle.[135] In that conflict, it has been reported that the pilots were allowed to select the aim point, as though the specific aim point was not of particular concern. Consequently, the crew of the Enola Gay picked a recognizable bridge at the center of the city, despite most of the military objectives being located on the outskirts of the city.[136] This suggests that the target was the city, which at least by today's legal standards would be unlawful,[137] though there remains debate about the degree to which the law of aerial bombardment had been sufficiently defined in 1945 to find the nuclear strike on Hiroshima was illegal under then-existing IHL.[138]

4. *A strike with a nuclear weapon that is incapable of being directed at a specific military objective*. This might be identified through the military commander's knowledge of the weapon system's predicted accuracy. If the detonation point cannot be predicted with sufficient precision to reasonably anticipate that it will detonate at or near the specified military objective, it would violate this requirement.

5. *A strike where the effects of the strike, despite the aimpoint being otherwise lawful, are not able to be contained such that the effects of the strike cause a violation of IHL.* Unlike the first four examples on this list, which are focused on how the weapon is aimed, this prohibition looks at those effects which violate IHL. This marks one of the unique attributes of indiscriminate attacks, as it requires an evaluation that goes beyond the otherwise binary bounds of the principle of distinction.[139] This type of prohibited attack will be more fully addressed in the analysis of the remaining IHL principles.

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135. For a discussion of why the Hiroshima bombing would likely be illegal under today's IHL, *see* McKinney et al., *supra* note 82, at 157.

136. *Id.* at 159.

137. *Id.*

138. The *Shimoda* court grappled with this issue as well, noting in its opinion that it was relying partially for its holding on an analysis of "Draft Rules of Air Warfare" which had not been adopted at the time of the attack in treaty form and therefore did not constitute positive law. The *Shimoda* court nonetheless found that when combined with other already existing treaty law, however, there was a sufficiently strong argument to find that some of the principles contained in the Draft Rules of Air Warfare consisted of customary international law, which was key to its finding that the attack violated the prohibition on indiscriminate aerial bombardment. *Shimoda et al. v. The State*, 32 Int'l. L. Rep. 626, 631 (Dist. Ct. of Tokyo 1963) (Japan).

139. This may be one of the reasons the ICJ found it sufficient to only name the IHL principles of distinction and unnecessary suffering in its advisory opinion on nuclear weapons (though proportionality and necessity were also addressed in a *jus ad bellum* context),

2. Applying the Principle of Proportionality to a Tactical Nuclear Strike on a City

The principle of proportionality, as discussed in Part IV above, is fundamentally concerned with ensuring that incidental damage to civilians and civilian objects is not "excessive in relation to the concrete and direct military advantage anticipated from the strike."[140] This principle focuses on the strike's effect rather than the aim point. If the civilian harm is deemed to be excessive when compared to the military benefit of the nuclear strike, it is unlawful. This applies as an addition to the already existing obligation not to target civilians or civilian objects under any circumstances. Therefore, if a valid military objective were identified in a city, and it was targeted by a nuclear strike, it is possible that despite the *target* being lawful, the *effects* on the surrounding area would be such that the strike would be prohibited under the principle of proportionality.

Supposing that Russian Defense Minister Shoigu's threat to hit key decision-making centers[141] led to an actual nuclear strike, it is reasonable to think that locations such as the Ukrainian Ministry of Defense would be a plausible target. Such a target would by itself certainly be considered a valid military objective. However, it is located in the middle of the Ukrainian capital city of Kiev, with a pre-war population of approximately three million people.[142] To determine the legality of such a strike with a tactical nuclear weapon, the foreseeable damage to all of the non-military objectives surrounding the target must be weighed against the concrete and direct military advantage of destroying such a target.

In his dissenting opinion to the ICJ advisory opinion, Judge Koroma described the reports made to the Court from the delegations from Hiroshima and Nagasaki about the effects of the bombs. Though those cities' structure, building materials, population size, population density, and many other variables were not the same as modern cities, the descriptions of what happened when those cities were bombed are a decent reference point for getting a general sense of what a nuclear detonation of a tactical nuclear

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since the paradigmatic definition of the principle of proportionality is found in the treaty text of Additional Protocol I in its definition of indiscriminate attacks. *See* Additional Protocol I, *supra* note 88, art. 51(5)(b).

140. *Id.*

141. Roth, *supra* note 124.

142. *Kiev Population 2023*, *supra* note 130.

weapon will do to a city. Of the immediate effects of the explosion, Judge Koroma wrote that the Mayor of Hiroshima reported before the Court that:

> The entire city of Hiroshima . . . had been exposed to thermal rays, shock-wave blast and radiation. The bomb purportedly generated heat that reached several million degrees centigrade. The fireball was about 280 metres in diameter, the thermal rays emanating from it were thought to have instantly charred any human being who was outdoors near the hypocentre. The witness further disclosed that according to documented cases, clothing had burst into flames at a distance of 2 kilometres from the hypocentre of the bomb; many fires were ignited simultaneously throughout the city; the entire city was carbonized and reduced to ashes. Yet another phenomenon was a shock-wave which inflicted even greater damage when it ricocheted off the ground and buildings. The blast wind which resulted had, he said, lifted and carried people through the air. All wooden buildings within a radius of 2 kilometres collapsed, while many well beyond that distance were damaged.[143]

This description provides a powerful image of the instantaneous damage likely to be caused by a fifteen-kiloton weapon dropped in the middle of a city. As the testimony makes clear, massive and immediate damage and death can be expected from the extreme heat and shock waves generated by the explosion, leaving several square miles completely destroyed.[144]

The most difficult aspect of a nuclear strike to quantify is the damage from radiation to exposed persons. In its advisory opinion, the Court acknowledged the unprecedented degree of damage from thermal and blast effects nuclear weapons were capable of but also noted that the harm caused by radiation introduced a unique element to the evaluation of the lawfulness of a nuclear strike.[145] While the heat and pressure generated by the explosion are extraordinary, those modes of destruction are not unique to nuclear weapons. It is the release of enormous amounts of radiation that led the

143. Nuclear Weapons Advisory Opinion, *supra* note 6, at 567–68 (dissenting opinion of Koroma, J.).

144. SOLIS, *supra* note 48, at 628 (stating that the bomb detonated over Hiroshima "destroyed everything within 4.7 square miles of its detonation").

145. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 35 ("By its very nature, that process, in nuclear weapons as they exist today, releases not only immense quantities of heat and energy, but also powerful and prolonged radiation. According to the material before the Court, the first two causes of damage are vastly more powerful than the damage caused by other weapons, while the phenomenon of radiation is said to be peculiar to nuclear weapons.").

Court to conclude that "[t]he destructive power of nuclear weapons cannot be contained in either space or time"[146] and that, unlike other weapons, nuclear weapons could "cause damage to generations to come."[147]

Judge Koroma provides some context for considering what kinds of harm survivors of the initial thermal and blast effects encountered:

> People who were within 1,000 metres of the hypocenter were exposed to the initial radiation of more than 3.93 Grays. It is estimated that 50 per cent of people who were exposed to more than 3 grays die of marrow disorder within two months. Induced radiation was emitted from the ground and buildings charged with radioactivity. In addition, soot and dust contaminated by induced radiation was dispersed into the air and whirled up into the stratosphere by the force of the explosion, and this caused radioactive fallout back to the ground over several months.
>
> . . .
>
> In addition to direct injury from the bomb blast, death was caused by several interrelated factors such as being crushed or buried under buildings, injuries caused by splinters of glass, radiation damage, food shortages or a shortage of doctors and medicines.[148]

Measuring the scope of the above-described harm is difficult, if not impossible. It is reported that out of Hiroshima's pre-bombing population of 350,000, by the end of 1945, 140,000 had died, though estimates of total deaths vary.[149] The number of near-term deaths from a hypothetical Russian nuclear strike with a similarly sized weapon on a Ukrainian city could reasonably be expected to be on a similar order of magnitude as what was observed at Hiroshima.[150] What is harder to measure is the amount of medium- and long-term harm caused to survivors, many of whom are likely to suffer from increased rates of cancer and other persistent medical problems as a

146. *Id.*

147. *Id.* ¶ 36.

148. *Id.* at 566–67 (dissenting opinion of Koroma, J.).

149. *Id.* at 568 (dissenting opinion of Koroma, J.).

150. Some recent models utilizing a ten-kiloton detonation in the central business districts of Los Angeles and New York City estimated resulting deaths of 150,000 and 500,000, respectively, although the report also comments on the substantial uncertainty associated with such predictions. ASSESSING MEDICAL PREPAREDNESS TO RESPOND TO A TERRORIST NUCLEAR EVENT: WORKSHOP REPORT 12 (Georges C. Benjamin et al. eds., 2009), https://nap.nationalacademies.org/catalog/12578/assessing-medical-preparedness-to-respond-to-a-terrorist-nuclear-event.

result of the bombing.[151] At Hiroshima, these medical problems extended not just to those who were present at the time of the bombing in Hiroshima, but also to people living in other locations who were exposed to nuclear fallout and even to people who had not yet been born.[152]

Thus, the Russian military commander contemplating a launch order on a target in the middle of a city must consider whether several hundred thousand dead civilians, killed instantaneously by the strike or in the immediate aftermath, coupled with the medium- and long-term harm to untold thousands who will survive but struggle with chronic radiation-induced illnesses, is excessive relative to the concrete and direct military advantage achieved. This is not all, however. The harm is not limited to civilian death and medical problems. The military commander must also weigh the destruction or partial destruction of civilian objects. That Russian military commander must also factor in several square miles of destruction of what, in most cities, are going to be exclusively civilian objects. For reference, in Hiroshima, 4.7 square miles[153] were destroyed, and 70,147 homes were damaged.[154]

There is no suitable method for forecasting these harms with precision or making sense of the correct weight to apply to them. The Russian military commander reading the launch order will know that the scale of civilian harm will be unlike anything else that has occurred on this planet since 1945. This much is clear. What concrete and direct military advantage might justify such a level of incidental civilian harm? Short of the attack being necessary to stop an imminent launch of a similar type of nuclear weapon against a Russian civilian center, it is difficult to conceive of a battlefield advantage that could come close to supporting such an action.[155] Because the Russian military

151. Nuclear Weapons Advisory Opinion, *supra* note 6, at 568 (dissenting opinion of Koroma, J.).

152. *Id.*

153. SOLIS, *supra* note 48, at 628.

154. Nuclear Weapons Advisory Opinion, *supra* note 6, at 566 (dissenting opinion of Koroma, J.).

155. It is far from clear that even the prevention of a single tactical nuclear strike on a Russian city would constitute a sufficient military advantage. The ICJ did not explain what circumstances it envisioned in its controversial holding that it could not find "definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake." *Id.* ¶ 105(2)(E). The Court did not say that an attack even in this extreme circumstance would be justified, it just declined to decide in this narrow scenario whether the use of nuclear weapons was lawful or unlawful. Even in the most permissive reading, it is hard to believe that the ICJ was contemplating the loss of a single or even several cities when it discussed the

commander will surely know that Ukraine turned over all of its nuclear weapons to Russia in return for a security guarantee in the 1990s,[156] they will also know that Ukraine is not capable of launching such a nuclear strike against a Russian city. As a result, those Russian military commanders considering what action they would take in response to such an order have all of the information necessary to decide now, even without the order in hand, that the launch of a tactical nuclear weapon against even otherwise lawful military objectives within a Ukrainian city would be manifestly unlawful. Such an attack would violate the principle of proportionality and the prohibition against indiscriminate attacks.

3. Applying the Prohibition of Unnecessary Suffering to a Tactical Nuclear Strike on a City

The prohibition against unnecessary suffering, as detailed in Part IV above, applies only to considerations of harm to combatants, prohibiting the infliction of "harm greater than that unavoidable to achieve legitimate military objectives."[157] If the threat by Defense Minister Shoigu to strike decision centers with nuclear weapons were to be carried out on the Ukrainian Ministry of Defense, a large number of combatants would be expected to die or otherwise become disabled. It is very likely that there are other combatants located throughout Kiev who likewise would be killed or disabled. Those killed by the immediate effects of the blast, such as heat and pressure, would not be suffering differently than they might if a conventional weapon were used. Those casualties of the strike would not be unlawful. However, some unknown number of surviving combatants would also experience the same

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"survival of a State." However, destroying an adversary's city to preclude the imminent destruction of a city within a military commander's own country does seem to offer at least the veneer of proportionality, though whether the principle was satisfied would be a heavily fact-dependent analysis. Even if it were found that, on a specific set of facts, destroying one city in order to preserve another was proportional, the principle of distinction still must be satisfied. Of course, in the case of the present war in Ukraine, there is no realistic threat that the Ukrainians have the ability to destroy a Russian city with the launch of a nuclear weapon. Therefore, this "extreme circumstance of self-defense," though legally unsettled, does not appear to be within the realm of the possible on the Ukrainian battlefield. The legal uncertainty on this question is irrelevant to a Russian military commander launching a strike against a country that possesses no ability to threaten the survival of the Russian State.

156. STEVEN PIFER, THE TRILATERAL PROCESS: THE UNITED STATES, UKRAINE, RUSSIA AND NUCLEAR WEAPONS 2 (Brookings Arms Control Series Paper 6, May 2011).

157. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 78.

spectrum of radiation-induced injuries already described in the preceding section as occurring across the broader civilian population. Rather than dying swiftly, they may die over a period of excruciating hours, weeks, or perhaps years. Just as those harms to the civilian population related to the release of radiation have to be factored into the analysis of the principle of proportionality, so too must this radiation-related combatant suffering be accounted for and counterbalanced by an adequate military advantage.[158]

A challenge facing the Russian military commander when evaluating the principle of unnecessary suffering for such a strike is the enormous range of uncertainty related to how many combatants will be harmed and in what manner. While the civilian population of a city can be reasonably estimated by anyone with an internet connection, the locations and quantity of combatants within a city are likely more closely guarded secrets. Furthermore, even if the approximate number of combatants in a location were known, it is no small task for a military commander to approximate the degree of suffering caused. Such an analysis calls for making assumptions about how many combatants are exposed to different levels of radiation, as well as accounting for qualitative differences between the harm suffered by combatants who die from radiation-induced cancer a few decades later[159] and those who die from organ failure and uncontrolled hemorrhaging in the hours or days after the strike.[160] The ICJ advisory opinion, though clear in its assessment that the prohibition against unnecessary suffering applies to the use of

158. While the harms unique to nuclear weapons are grouped in this article under the category of "radiation-related," the scope of harms that are unique to nuclear weapons is substantial and not necessarily limited to radiation-related harms. In fact, Judge Weeramantry, one of the dissenting judges to the ICJ opinion, identified twenty-two distinctive effects of nuclear weapons. Some of the listed harms are radiation-related, while others include items such as "lethal levels of heat and blast" that, though of a similar nature to the harm caused by conventional weapons, are produced on a scale incomparable to any other weapon. *Id.* at 471–72 (dissenting opinion of Weeramantry, J.).

159. Kotaro Ozasa et al., *Studies of the Mortality of Atomic Bomb Survivors, Report 14, 1950–2003: An Overview of Cancer and Noncancer Diseases*, 177 RADIATION RESEARCH 229 (2012). In this study of the long-term health effects of radiation doses received by survivors of the atomic bombings of Hiroshima and Nagasaki, the authors observed that "[t]he most important finding regarding the late effects of A-bomb radiation exposure on mortality is an increased risk of cancer mortality throughout life. The rates of excess solid cancer deaths have continued to increase in approximate proportion to radiation dose as the cohort ages." *Id.* at 229.

160. RICHARD RHODES, THE MAKING OF THE ATOMIC BOMB 731–32 (1986) ("Direct gamma radiation from the bomb had damaged tissue throughout the bodies of the exposed.

nuclear weapons,[161] provides no discussion to shed light on how the military commander should conduct this assessment.[162] The best a military commander may be able to do is to acknowledge that the suffering they are about to inflict on the combatants who are injured in this strike will reach a degree of intensity that the strike can only be justified by an exceptionally weighty military advantage.[163]

Within the context of a tactical strike on a city, however, the analytical challenges encountered when conducting the balancing test for unnecessary suffering may not pose a substantial hurdle to determining the legality of the strike under IHL. Since any conceivable city potentially targeted with a Russian tactical nuclear strike in the war against Ukraine would overwhelmingly be composed of civilians, the principles of distinction and proportionality dominate the legal analysis. This does not mean that the suffering caused to combatants within a city harmed by a nuclear strike is legally inconsequential. Rather, what is asserted here is that because a nuclear strike on a target within a Ukrainian city is so clearly illegal under the principles of distinction and proportionality, for practical purposes, the military commander charged with such a nuclear strike need not struggle to resolve the strike's legality under unnecessary suffering.[164] There is no tactical nuclear strike on a target in a

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. . . The outcome of these assaults was massive tissue death, massive hemorrhage and massive infection. 'Hemorrhage was the cause of death in all our cases,' [wrote a Japanese doctor treating victims of the atomic bombing], but he also note[d] that the pathologist at his hospital 'found changes in every organ of the body in the cases he . . . autopsied.'").

161. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶¶ 78–79.

162. Simon O'Connor, *Nuclear Weapons and the Unnecessary Suffering Rule*, *in* NUCLEAR WEAPONS UNDER INTERNATIONAL LAW 128, 140 (Gro Nystuen et al. eds., 2014) ("the ICJ did not discuss or analyze in any detail the question of the extent to which the rule against using means of warfare that causes unnecessary suffering or superfluous injury applies to nuclear weapons. While individual judges do so to a certain extent in their separate or dissenting opinions, divergences remain.").

163. In her dissenting opinion to the ICJ ruling, Judge Higgins reaches a similar conclusion relating to the suffering of combatants related even to a tactical use of nuclear weapons, observing that "[i]f the suffering is of the sort traditionally associated with the use of nuclear weapons—blast, radiation, shock, together with the risk of escalation, risk of spread through space and time—then only the most extreme circumstances (defence against untold suffering or the obliteration of a State or peoples) could conceivably 'balance' the equation between necessity and humanity." Nuclear Weapons Advisory Opinion, *supra* note 6, at 587 (dissenting opinion of Higgins, J.).

164. Indeed, most scholarship related to the legality of the use of nuclear weapons has likewise chosen to focus on the indiscriminate nature of these weapons, thus focusing primarily on the principles of distinction and proportionality, leaving a relative dearth of in-

Ukrainian city that could conceivably be legal in the present war, regardless of how one analyzes the principle of unnecessary suffering. Outside of the context of a city, however, the unnecessary suffering principle may come to dominate the analysis of the legality of the strike. Several such scenarios will now be considered.

B. Tactical Nuclear Strike far from a City

When searching for an example of a nuclear strike that might be considered legal, it is common to encounter references to scenarios where certain assumptions are made that remove or substantially reduce the impact of the strike on the civilian population. In his dissenting opinion to the ICJ advisory opinion, the Vice-President of the ICJ, Judge Schwebel, used an example of a tactical nuclear depth charge against an enemy submarine that is about to fire nuclear missiles to present what he viewed as a case where the use of a nuclear weapon might be considered lawful.[165] Judge Schwebel based this assessment on a few factors, including the absence of "immediate civilian casualties"[166] and the assessment that the harm being inflicted on the servicemembers on the submarine is far outweighed by the military advantage achieved by preventing the targeted submarine from launching nuclear missiles.[167] Acknowledging that some radiation would be released, Judge Schwebel likely correctly considered the amount of radiation released from a tactical nuclear depth charge to be far less than that which would be released by a submarine launching multiple nuclear weapons at land-based targets.[168] The final factor that Schwebel considered as potentially supporting the legality of such a strike was that a conventional weapon would be much less likely to destroy the submarine.[169]

The advantage of the nuclear depth charge thought experiment is that it substantially reduces, if not removes entirely, civilian harm, providing a scenario that could plausibly satisfy all of the obligations of IHL. However, even in the hypothesized near-absence of civilian harm, it is worth noting that

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depth analysis of how to apply the unnecessary suffering principle to nuclear weapons. *See* O'Connor, *supra* note 162, at 128–29.

165. Nuclear Weapons Advisory Opinion, *supra* note 6, at 320 (dissenting opinion of Schwebel, J.).

166. *Id.*

167. *Id.*

168. *Id.*

169. *Id.*

Judge Schwebel does not find it to be enough merely to place the nuclear detonation somewhere in the ocean (apparently contemplating a location very far from land); he also considers it necessary that the weapon be a tactical nuclear weapon used against a submarine that is imminently going to launch nuclear weapons, and against which a conventional weapon would offer a substantially reduced probability of successful destruction.

Though Judge Schwebel confusingly references "proportionality"[170] in weighing the harm to the submarine crew, it appears that he is actually doing an unnecessary suffering balancing test, evaluating the proportionality of harm to the crew to the military advantage. In either case, it should be noted that, in isolation, the destruction of the submarine and its crew from a nuclear weapon would almost certainly be completely lawful. The destruction of the submarine and its crew is a "legitimate military objective," which means that the crew can be lawfully killed, provided the manner in which they are killed does not constitute a "harm greater than that unavoidable" to accomplish that lawful objective.[171] In the nuclear depth charge example, though the depth charge is triggered by a nuclear detonation, the manner of death of the crew would likely be identical to that of a crew killed by a conventional depth charge—some sort of damage to the hull of the submarine would result in catastrophic flooding and rapid death for crew-members as a result of the inrush of seawater. Therefore, Judge Schwebel's nuclear depth charge scenario also likely avoids violating the prohibition against unnecessary suffering as the radiation-induced harms discussed elsewhere in this article are not likely to be experienced, and the manner of death would likely be fairly indistinguishable from a well-placed conventional depth charge.

The Russian military commander can take little comfort in the nuclear depth charge thought-experiment, however. Ukraine does not currently possess any submarines,[172] and even if it were to acquire a submarine or if Russia were instead to target a Ukrainian surface ship, Ukraine does not have any nuclear weapons with which to threaten Russia with a nuclear strike. Furthermore, even if the very restrictive conditions of Judge Schwebel's depth charge example were met, the nuclear depth charge scenario relies on a near

170. *Id.* ("It would easily meet the test of proportionality; the damage that the submarine's missiles could inflict on the population and territory of the target State would infinitely outweigh that entailed in the destruction of the submarine and its crew").

171. *Id.* ¶ 35.

172. Matthew Impelli, *What Happened to Ukraine's Only Submarine?,* NEWSWEEK (Feb. 7, 2023), https://www.newsweek.com/what-happened-ukraines-only-submarine-1779631.

absence of civilian harm, which can only plausibly be the case when the detonation is both low-yield and in a location very far from land. However, a detonation of a tactical nuclear weapon in the Black Sea would likely lead to radioactive contamination reaching the coast of multiple countries that border the Black Sea in very short order, including Ukraine, Russia, Georgia, and the NATO-member countries Turkey, Bulgaria, and Romania.[173]

Although it has a maximum width of 730 miles,[174] due to the shape of the Black Sea, any nuclear detonation in it would occur no more than approximately 100 miles from land. While there is extremely limited real-world data on the amount of radiation that would be released and how much would spread from an underwater detonation, the Castle Baker test in the Bikini Atoll on July 25, 1946, provides a rough sense of what would result from detonating a nuclear weapon of a similar size to that used at Hiroshima under ninety feet of water.[175]

The Castle Baker test used a twenty-three-kiloton weapon[176] detonated in a lagoon to evaluate the impact of such a detonation on a fleet of ships.[177] Though very effective at disabling the surface ships, much of the damage was due to high levels of radiation from "radioactive water spray and radioactive debris from the lagoon bottom."[178] There was so much radioactive contamination onboard the ships that planned decontamination of the surviving ships was halted due to the risk of exposing assigned sailors to dangerous levels of radiation.[179] More importantly, for consideration of radioactive contamination reaching the civilian population, within several hours of the Castle Baker underwater detonation, U.S. aircraft detected a "highly radioactive cloud" eighty nautical miles from the site of the explosion.[180] Thus, there is every reason to believe that radioactive contamination from the use of a tactical nuclear depth charge in the Black Sea would have foreseeable

173. For a full list of NATO member countries, *see NATO Member Countries*, NATO (last updated June 8, 2023), https://www.nato.int/cps/en/natohq/topics_52044.htm.

174. Don Walsh, *The Black Sea: A Unique Place*, PROCEEDINGS (Nov. 2022), https://www.usni.org/magazines/proceedings/2022/november/black-sea-unique-place.

175. L. BERKHOUSE ET AL., OPERATION CROSSROADS 1946, at 1 (Defense Nuclear Agency Report 6032F, May 1, 1984), https://apps.dtic.mil/sti/pdfs/ADA146562.pdf.

176. *Id.* at 97.

177. *Id.* at 1.

178. *Id.* at 2.

179. *Bikini A-Bomb Tests July 1946*, NATIONAL SECURITY ARCHIVE (William Burr & Stav Geffner eds., July 22, 2016), https://nsarchive.gwu.edu/briefing-book/environmental-diplomacy-nuclear-vault/2016-07-22/bikini-bomb-tests-july-1946.

180. BERKHOUSE ET AL., *supra* note 175, at 104.

civilian harm in the form of exposure to radioactive contamination. Therefore, such an attack would fall afoul of the distinction and proportionality principles of IHL.

The lessons of the Castle Baker test indicate that, in addition to an order to use a tactical nuclear depth charge against any plausible Ukrainian target in the Black Sea being illegal on distinction and proportionality grounds, such a detonation would be illegal on unnecessary suffering grounds if used against surface ships rather than the previously analyzed submerged submarine. The Castle Baker detonation only immediately sank or seriously damaged ships within nine hundred yards of the site of the detonation.[181] The remaining vessels in the test area survived the blast but received such high levels of radioactive contamination that the test animals left on board had nearly all died within three months from radiation exposure related to the blast.[182]

Thus, whereas the manner of death for the crew of a submarine targeted by a nuclear depth charge would likely be nearly instantaneous, the crew of a surface ship that survived the initial blast could reasonably be expected to suffer a painful, prolonged, and inevitable death similar to that which appears to have occurred to the test animals onboard the ships targeted in Castle Baker. Therefore, a Russian military commander considering such a use of tactical nuclear weapons must weigh whether that radiation-related harm to the surviving crew is more than necessary to achieve the legitimate objective of destroying the targeted ships. When one considers the vast array of conventional weapons available to disable warships without causing the extra radiation-related harm a nuclear detonation would cause, the answer is clear. A decision by Russian military commanders to launch such a strike against Ukrainian surfaced warships would foreseeably create superfluous harm, and, therefore, it would be illegal under the prohibition against unnecessary suffering.

Having concluded that the use of a tactical nuclear weapon in the middle of the Black Sea would fall afoul of two, if not all three, of the relevant IHL principles,[183] it is likewise clear that the Russian use of a tactical nuclear

181. *Id.* at 101.

182. *Id.* at 107.

183. If the attack is a nuclear depth charge against a submerged submarine, it likely would not violate unnecessary suffering but due to the confined geography of the Black Sea it would still violate distinction and proportionality. As the Castle Baker test demonstrated,

weapon on Ukrainian territory, even far from a Ukrainian city, will be illegal based on a nearly identical analysis. There is no location within Ukraine that is more remote from the civilian population than the middle of the Black Sea.[184] The uncontrolled spread of radioactive contamination will be very likely to reach civilian areas. And even if it somehow only contaminates uninhabited Ukrainian lands, because radioactive contamination can continue to be harmful for many years, it is foreseeable that future civilians seeking to use that land will be harmed. Thus, the radioactive contamination from even a relatively limited tactical nuclear strike can be expected to spread in an uncontrolled manner both geographically and temporally. This distinctive ability to spread harm across time through the enduring nature of radioactive fallout from nuclear explosions is the reason ICJ Judge Shahabuddeen, in his dissenting opinion, observed that the use of nuclear weapons presents "the disturbing and unique portrait of war being waged by a present generation on future ones."[185]

Of course, neither the certainty of substantial civilian harm nor combatant suffering makes the use of tactical nuclear weapons on land illegal per se. In the scenario where only Ukrainian military units are targeted with a Russian tactical nuclear weapon in some uninhabited stretch of the battlefield on a windless day,[186] the degree of *instantaneous* civilian harm would be kept

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a tactical nuclear strike on surfaced naval vessels in the Black Sea would likely violate unnecessary suffering (assuming some crew members are not immediately killed) in addition to violating distinction and proportionality.

184. *Population Density: Ukraine*, WORLDPOP (June 22, 2020), https://hub.worldpop.org/geodata/summary?id=49349 (showing a population density map of Ukraine without any areas that are more than approximately one hundred miles from areas of high civilian population density, a distance that was previously cited in this article as the best case distance from land of a nuclear detonation in the Black Sea).

185. Nuclear Weapons Advisory Opinion, *supra* note 6, at 383 (dissenting opinion of Shahabuddeen, J.).

186. Judge Schwebel presents such a case and labels it as an intermediate case, between the possible legality of the nuclear depth charge scenario and the almost certain illegality of a full-scale launch of strategic nuclear weapons against a civilian population. He uses this example to make the point that, though the use of nuclear weapons is

> difficult to reconcile with the rules of international law . . . that is by no means to say that the use of nuclear weapons in any and all circumstances, would necessarily and invariably conflict with those rules of international law. On the contrary, as the *dispositif* in effect acknowledges, while they might "generally" do so, in specific cases they might not. It all depends on the facts of the case.

Id. at 321–22 (dissenting opinion of Schwebel, J.).

very low. This would pass a distinction targeting test, as civilians are clearly not the target. However, the prohibition against indiscriminate attacks that is inherent in the principles of distinction and proportionality will prohibit the use of tactical nuclear weapons even in the most favorable spot on the Ukrainian battlefield on the grounds of radiation-related harm to civilians occurring as radioactive contamination spreads through fallout from the explosion.[187] An unnecessary suffering analysis will yield the same result. This is because the prohibition against indiscriminate attacks, the principle of proportionality, and unnecessary suffering all share a balancing test that looks at the degree of harm relative to the degree of military advantage achieved by inducing that harm.

C. Tactical or Strategic Nuclear Strikes by Russia Against Ukraine Violate IHL

In the case of Russia's war against Ukraine, Russia does not face the type of existential threat that the ICJ advisory opinion contemplates as the necessary precursor to enter the realm of possible (though far from certain) lawful use of nuclear weapons. In the absence of a sufficiently extreme military advantage, the Russian use of even low-yield tactical nuclear weapons against any plausible target will violate some or all of the relevant IHL principles of distinction, proportionality, and unnecessary suffering. Of course, if low-yield tactical nuclear weapons cannot be lawfully used, it goes nearly without saying that the use of strategic nuclear weapons many thousands of times more powerful would be even more illegal.

D. Russian Nuclear Strikes Could Not be Legally Justified as Reprisals

For similar reasons, Russia could not justify a nuclear attack as a reprisal. Historically, acts that are normally prohibited by IHL have been considered legally permissible when taken by one party to a conflict in response to violations by another party to coerce the party targeted by reprisals to comply

187. As noted in the preceding paragraph, the basic geography and civilian population density of Ukraine defies any attempt to claim that a specific Russian tactical nuclear strike on Ukrainian units in the open will be far enough from substantial numbers of civilians to support the requisite assumption that civilian harm will be avoided or significantly minimized. It could be argued that by dialing down the yield of the nuclear weapon to very low levels one might severely reduce the civilian harm if used in the right austere location with ideal weather patterns. However, as discussed in the next paragraph even this approach ends up being prohibited by the principle of unnecessary suffering on the facts as they exist in Ukraine today.

with IHL.[188] Such lawful breaches of IHL are called reprisals.[189] The ICJ only briefly addressed the topic of reprisals in its advisory opinion on nuclear weapons, stating that reprisals during times of peace are unlawful and that during times of armed conflict, reprisals were still governed by the *jus ad bellum* self-defense proportionality principle.[190] Elsewhere in the advisory opinion, the ICJ stated that even if the *jus ad bellum* self-defense proportionality principle was otherwise satisfied, a State must still "meet the requirements of the law applicable in armed conflict which comprise in particular the principles and rules of humanitarian law"[191] for an attack to be lawful. Read narrowly, this seems to set up a form of circular logic that fails to give a clear answer to the legality of nuclear reprisals.

The ICJ opined that the use of nuclear weapons in "an extreme circumstance of self-defence, in which the very survival of a State would be at stake" could *possibly* be legal.[192] The manner in which the Court confines possible *jus ad bellum* self-defense legality to a survival of State scenario supports the view that a reprisal with a nuclear weapon in any context short of an extreme survival of State scenario would be unlawful.[193] Ukraine does not pose a threat to the survival of Russia, nor is it capable of presenting such a threat without acquiring nuclear weapons itself. Therefore, Russian nuclear attacks against Ukrainian targets in the current armed conflict could not be legally justified as reprisals.

VI. RECOMMENDATION

Much of the legal commentary on the ICJ advisory opinion has focused on the admittedly vague wording of paragraph 105(2)(E), which in its entirety reads:

188. Casey-Maslen, *supra* note 77, at 171, 173.

189. *Id.*

190. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 46.

191. *Id.* ¶ 42.

192. *Id.* ¶ 105(2)(E).

193. *See also* BOOTHBY & VON HEINEGG, *supra* note 36, at 160–64 (stating and then providing additional legal basis for the assertion that "[a] reprisal may not exceed the degree of the wrongful conduct it is designed to correct"). Under Boothby & Von Heinegg's articulation of the rule, a form of proportionality is required though it does not appear quite as stringent as the conclusion reached in this article. Nonetheless, it is hard to imagine what sort of action other than some form of nuclear strike, or perhaps a large-scale chemical or biological attack, that would satisfy the requirement that reprisals with nuclear weapons be proportional to the act they are responding to.

> By seven votes to seven, by the President's casting vote,
>
> It follows from the above-mentioned requirements that the threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law;
>
> However, in view of the current state of international law, and of the elements of fact at its disposal, the court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake.

Many have criticized this legal non-conclusion.[194] It is not a statement of what law governs the use of nuclear weapons. The Court clearly articulated that it did not believe it had the necessary factual information[195] to answer the broad question posed by the UN General Assembly.[196] Russian nuclear forces are not asked to answer the same broad question when receiving a nuclear launch order. The question they must answer is whether nuclear strikes against targets in Ukraine would be lawful in the context of the present war.

The answer is unambiguously no. Nuclear strikes by Russian forces against Ukrainian targets would be unlawful. While commentators and even ICJ judges at the time lamented the apparent conflation of *jus ad bellum* and *jus in bello* analysis in paragraph 105(2)(E) of the advisory opinion,[197] that conflation does not alter the fact that a nuclear strike in Ukraine would so clearly fail the IHL legal analysis that there is no need to run a *jus ad bellum*

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194. *See, e.g.*, Nuclear Weapons Advisory Opinion, *supra* note 6, at 269 (declaration of Bedjaoui, J.) ("This very important question of nuclear weapons proved alas to be an area in which the Court had to acknowledge that there is no immediate and clear answer to the question put to it").

195. *Id.* ¶ 95 ("Nevertheless, the Court considers that it does not have sufficient elements to enable it to conclude with certainty that the use of nuclear weapons would necessarily be at variance with the principles and rules of law applicable in armed conflict in *any circumstance*." (emphasis added)).

196. Specifically, "Is the threat or use of nuclear weapons in any circumstance permitted under international law?" *Id.* ¶ 1.

197. *See, e.g.*, *id.* at 301 (separate opinion of Ranjeva, J.) ("the second clause of operative paragraph 2 E introduces the possibility of an exception to the rules of the law of armed conflict by introducing a notion hitherto unknown in this branch of international law: the 'extreme circumstances of self-defence, in which the very survival of a State would be at stake.' Two criticisms must be offered. Firstly, the court makes an amalgamation of the rules of the Charter of the United Nations on the one hand and the law of armed conflict and specifically the rules of humanitarian law on the other.").

analysis on such a strike.[198] Thus, a military commander would be well served to focus not on the ambiguity and controversy of paragraph 105(2)(E), but rather look to the clarity of the ICJ's other holdings on what actually is the relevant law governing the use of nuclear weapons. Viewed in this light, the ICJ opinion likely deserves more credit than it has received[199] for furnishing clear guidance in paragraphs 105(2)(C) and 105(2)(D) on what law governs a nuclear strike, even though the Court's holding in paragraph 105(2)(E) has received much of the attention of frustrated ICJ judges and commentators. In particular, paragraph 105(2)(D)'s holding on the applicability of IHL to nuclear weapons is of great practical use to military commanders as it removes any lingering questions they may have had about nuclear weapons and their relationship to IHL. This clarity enables military commanders to apply a relatively well-established legal framework to the nuclear launch orders they receive, thereby enhancing the ability of military commanders to identify manifestly unlawful launch orders and thus decreasing the likelihood that nuclear weapons will be used in an unlawful manner.

198. Though this article did not run through the whole *jus ad bellum* analysis, as was previously noted the ICJ was insistent that merely satisfying *jus ad bellum* self-defense analysis was not enough for an act to be lawful, the act also had to satisfy the requirements of IHL. *Id.* ¶ 42 (But at the same time, a use of force that is proportionate under the law of self-defence, must, in order to be lawful, also meet the requirements of the law applicable in armed conflict that comprise in particular the principles and rules of humanitarian law).

199. *See* Schmitt, *supra* note 37, at 109. "Ultimately, however, while the finding will undoubtedly generate considerable analysis and debate in legal and policy circles, its practical impact will be marginal." While Schmitt, not unreasonably, goes on to argue that the Court's unanimous holdings (2(C) and 2(D)) were already widely accepted, and therefore added little to the understanding of the legality of these weapons, the ICJ's explicit endorsement of the applicability of these core legal principles of *jus ad bellum* and *jus in bello* to the use of nuclear weapons helps to bolster the legitimacy of these crucial legal positions. Furthermore, the process of developing the advisory opinion forced the nuclear States to provide a great deal of specificity on what they perceived the law governing the use of nuclear weapons to be. That the major nuclear powers largely agreed with the Court's unanimous holdings does not diminish the persuasive power of documenting the legal position of both the United States and Russia that the use of nuclear weapons was governed by international law. For practical purposes, a military commander seeking to understand what law governs the use of nuclear weapons is done a great service by the ICJ and the nuclear powers aligning on the unanimous holdings of 2(C) and 2(D). For an example of this beneficial effect one need look no further than the footnote in the U.S. Department of Defense *Law of War Manual* for the proposition that "[t]he law of war governs the use of nuclear weapons, just as it governs the use of conventional weapons." The footnote for this assertion cites three sources to support the claim, one of which is the written submission provided by the United States to the ICJ as the ICJ prepared to issue its 1996 nuclear weapons advisory opinion. LAW OF WAR MANUAL, *supra* note 10, at 426 n.411.

VII. CONCLUSION

A Russian military officer evaluating the legality of a nuclear strike has a clear articulation of the law in the ICJ's unanimous holdings. Any nuclear strike must comply with *jus ad bellum* and *jus in bello* principles, consisting primarily of compliance with UN Charter Articles 2(4) and 51 for the former and IHL for the latter.[200] The principles of distinction, unnecessary suffering, and proportionality guide the *jus in bello* analysis. The application of these principles to potential Russian strikes in Ukraine demonstrates how the framework articulated by the ICJ can be applied fruitfully to making a decision on the legality of a nuclear strike. Further, this IHL analysis indicates that a Russian nuclear strike against Ukraine, though frequently threatened, would be a clear violation of international law. Therefore, Russian military commanders should refuse to act on an order to use nuclear weapons against Ukraine, as any such order would be manifestly unlawful.[201]

200. Nuclear Weapons Advisory Opinion, *supra* note 6, ¶ 105(2)(C)–(D).

201. LAW OF WAR MANUAL, *supra* note 10, § 18.3.2 ("Members of the armed forces must refuse to comply with clearly illegal orders to commit law of war violations"); *see also* Charter of the International Military Tribunal art. 8, Aug. 8, 1945, 59 Stat. 1544, 82 U.N.T.S. 279 ("The fact that the Defendant acted pursuant to order of his Government or of a superior shall not free him from responsibility"); *see also* Rome Statute of the International Criminal Court art. 33(1), July 17, 1998, 2187 U.N.T.S 90 ("The fact that a crime within the jurisdiction of the Court has been committed by a person pursuant to an order of a Government or of a superior, whether military or civilian, shall not relieve that person of criminal responsibility unless: (a) The person was under a legal obligation to obey orders of the Government or the superior in question; (b) The person did not know that the order was unlawful; and (c) The order was not manifestly unlawful").