

## NOTE

# MISTAKEN DETONATION: INTERNATIONAL AND DOMESTIC LEGAL PRINCIPLES APPLICABLE TO ADDRESS THE ACCIDENTAL OR UNINTENDED USE OF NUCLEAR WEAPONS

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### ABSTRACT

*Accidental or unintended detonation of nuclear weapons is a virtually unregulated area of international law. Although the Treaty on the Prohibition of Nuclear Weapons and the Treaty on the Non-Proliferation of Nuclear Weapons seek to manage the risks of intentional nuclear use, these Treaties are silent on how the international community would assign legal liability for inadvertent detonations. This Note seeks to address this question by surveying and discussing how existing mechanisms of international and US domestic law could fill this legal void. Specifically, it analyzes the relevancy, benefits, and drawbacks of applying: international criminal law; international human rights law; the Rule of Precaution; the Treaty on the Prohibition of Nuclear Weapons; the American tort claims of civil negligence, *res ipsa loquitur*, the abnormally dangerous activities doctrine, and products liability; data security law; and criminal negligence. This Note ultimately proposes three practical recommendations as to how the international community can work together to determine which legal framework best addresses accidental or unintended use of nuclear weapons and implement the most worthwhile policies and procedures to address the risk.*

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ABSTRACT.....	725
I. INTRODUCTION .....	727
II. CAUSES AND CASES OF NEAR-MISSES .....	728
A. Technical Malfunction .....	728
B. Human Error.....	730
C. Technical Malfunction, Human Error, and Contemporary Application.....	731
III. SURVEY OF EXISTING BODIES OF INTERNATIONAL LAW AND POSSIBLE APPLICATIONS TO ACCIDENTAL OR UNINTENDED USE OF NUCLEAR WEAPONS.....	733
A. International Criminal Law .....	733
B. International Human Rights Law and the Rule of Precaution.....	737
C. Treaty on the Prohibition of Nuclear Weapons.....	739
D. In Practice: August 2021 US Drone Strike .....	740
IV. SURVEY OF POTENTIALLY ANALOGOUS US DOMESTIC LAW AND POSSIBLE APPLICATIONS TO ACCIDENTAL OR UNINTENDED USE .....	742
A. Tort Law: Civil Negligence.....	742
B. Tort Law: Res Ipsa Loquitur .....	744
C. Tort Law: Abnormally Dangerous Activities Doctrine 746	
D. Tort Law: Products Liability .....	749
E. Considerations and Limitations of Available Remedies and Sovereign Immunity Under Tort Law .....	752
F. Data Security Law.....	754
G. Criminal Negligence .....	755
V. THREE RECOMMENDATIONS FOR CHANGE .....	757
A. United Nations General Assembly Resolution .....	757
B. New Treaty: Convention on Accidental or Unintended Use of Nuclear Weapons.....	759
C. Amendment of the Treaty on the Non-Proliferation of Nuclear Weapons .....	761
VI. CONCLUSION.....	762

## I. INTRODUCTION

Identifying the appropriate uses of nuclear weapons is a contentious topic in international law. State policies range from a complete prohibition on the production, possession, and use of nuclear weapons<sup>1</sup> to no-first-use policies.<sup>2</sup> The United States follows the declaratory policy of “deterrence,” under which it may consider the use of nuclear weapons in extreme circumstances to defend the “vital interests” of the United States and its allies.<sup>3</sup>

Since the Cold War, there have been numerous “near-misses” of nuclear detonation—instances where States with nuclear weapons came close to detonating those weapons because of accidental or unintended circumstances.<sup>4</sup> These accidental or unintended uses of nuclear weapons are a virtually unregulated area of international law, outside the scope of existing nuclear policy.<sup>5</sup> This Note will explore a

1. See generally Treaty on the Prohibition of Nuclear Weapons, *opened for signature* Sept. 20, 2017, XXVI U.N.T.S. 9 at 3, 6 [hereinafter TPNW]. As of July 12, 2022, the Treaty has ninety-one signatories and sixty-eight States parties. UNITED NATIONS TREATY COLLECTION, [https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtmsg\\_no=XXVI-9&chapter=26](https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtmsg_no=XXVI-9&chapter=26) [<https://perma.cc/5XSR-GRDH>] (last visited Dec. 7, 2022) [hereinafter UN TREATY COLLECTION]. However, all nine nuclear weapons States have boycotted the UN’s open-ended working group on nuclear disarmament. Treaty on the Prohibition of Nuclear Weapons (TPNW), NUCLEAR THREAT INITIATIVE, <https://www.nti.org/education-center/treaties-and-regimes/treaty-on-the-prohibition-of-nuclear-weapons/#:~:text=In%202022%2C%20Barbados%2C%20Burkina%20Faso,from%2021%2D23%20June%202022> [<https://perma.cc/R6UN-YHYD>] (last visited Dec. 7, 2022) [hereinafter NUCLEAR THREAT INITIATIVE].

2. See ARMS CONTROL ASS’N, <https://www.armscontrol.org/factsheets/declaratorypolicies> [<https://perma.cc/S8PW-GTWJ>] (last visited Dec. 7, 2022) (describing China and India’s no-first-use nuclear weapons policies. Under a no-first-use policy, States commit themselves to only use nuclear weapons in response to a nuclear attack) [hereinafter ARMS CONTROL ASS’N].

3. U.S. Dep’t of Def., *Nuclear Posture Review 2018* 1, 21 (2018), <https://media.defense.gov/2018/Feb/02/2001872886/-1/-1/1/2018-NUCLEAR-POSTURE-REVIEW-FINAL-REPORT.PDF> [<https://perma.cc/4P3L-J34X>] [hereinafter 2018 Nuclear Posture Review].

4. See CHARLES J. MOXLEY, JR., *NUCLEAR WEAPONS AND INTERNATIONAL LAW*, xxxi (2022).

5. See Patricia Lewis et al., *Too Close for Comfort: Cases of Near Nuclear Use and Options for Policy*, vi (2014), [https://www.chathamhouse.org/sites/default/files/field/field\\_document/20140428TooCloseforComfortNuclearUseLewisWilliamsPelopidasAghlani.pdf](https://www.chathamhouse.org/sites/default/files/field/field_document/20140428TooCloseforComfortNuclearUseLewisWilliamsPelopidasAghlani.pdf) [<https://perma.cc/8699-TGGU>] [hereinafter CHATHAM HOUSE REPORT] (“Given the humanitarian consequences of a nuclear conflict regionally and globally, the risks [of inadvertent use] should be subjected to greater analysis and examination than currently exists”); *infra* Part II. Although the Treaty on the Prohibition of Nuclear Weapons and the Treaty on the Non-Proliferation of Nuclear Weapons seek to manage the risks of *intentional* nuclear use, these Treaties are silent on how the

variety of legal principles that may be applicable to accidental or unintended use, and will ultimately propose three recommendations as to how the international community could implement legal procedures and policy to address this risk. Part II will identify previous causes and cases of near-misses. Part III will provide a survey of existing international law that may apply to accidental or unintended uses of nuclear weapons. Part IV will analyze potentially analogous domestic law that may be applicable to this topic. Lastly, Part V will suggest possible ways to regulate the risk of accidental or unintended use.

## II. *CAUSES AND CASES OF NEAR-MISSES*

Although nuclear weapons have not been used in violent conflict since 1945, there have been over a dozen incidents of near-misses since the early-1960s.<sup>6</sup> A near-miss is an instance where a nuclear State comes close to using nuclear weapons as a result of accidental or unintended circumstances, but something ultimately occurs to stop the detonation.<sup>7</sup> Technical malfunction and human error are the main sources of these near-misses.<sup>8</sup> Section A of this Part describes technical malfunction as a cause of accidental or unintended use of nuclear weapons, and Section B discusses human error as a cause. Section C then analyzes technical malfunction and human error together, as well as a contemporary example.

### A. *Technical Malfunction*

The US Air Force defines a technical malfunction as “a residual class of events which could lead to an unauthorized nuclear detonation without the direct action of human error.”<sup>9</sup> Within this class are three primary types of malfunctions: (1) random failures of internal weapon

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international community would assign legal liability for *inadvertent* detonations. See generally TPNW, *supra* note 1; Treaty on the Non-Proliferation of Nuclear Weapons, *opened for signature* July 1, 1968, 21 U.S.T. 483, 729 U.N.T.S. 161 [hereinafter NPT].

6. See generally CHATHAM HOUSE REPORT, *supra* note 5, at vi.

7. See MOXLEY, *supra* note 4, at xxxi. Some sources also refer to near-misses as “broken arrows.” See Ross Pomeroy, *How Has a Nuclear Weapon Never Accidentally Detonated?*, BIGTHINK (Aug. 12, 2022), <https://bigthink.com/the-past/nuclear-weapon-accidental-detonation/> [<https://perma.cc/L93B-T7C2>].

8. See CHATHAM HOUSE REPORT, *supra* note 5, at 2.

9. U.S. Air Force Project Rand Memorandum 1, 10 (Oct. 15, 1958), [https://www.rand.org/content/dam/rand/pubs/research\\_memoranda/2006/RM2251.pdf](https://www.rand.org/content/dam/rand/pubs/research_memoranda/2006/RM2251.pdf) [<https://perma.cc/LU9C-3J6U>] [hereinafter Air Force Memo].

components, or related control and test equipment; (2) unanticipated external technical malfunctions; (3) and transportation accidents.<sup>10</sup>

Random failures of internal weapon components, or related control and test equipment, most often consist of issues with the firing and fusing systems of weapons, such as shorts, spontaneous squib firings, or switch malfunctions.<sup>11</sup> Typically, internal weapon component failures will not lead to full detonation, as nuclear weapons have numerous safety features, but random and simultaneous failure of multiple safety features could potentially cause accidental or unintended detonation.<sup>12</sup> Unanticipated external technical malfunctions may consist of things like stray voltages originating in associated equipment or vehicle batteries.<sup>13</sup> Transportation accidents, such as a plane crash or fire, may also result in a technical malfunction of nuclear weapons.<sup>14</sup>

Some of the most notorious near-misses caused by technical malfunctions include the “NORAD incidents” of 1979 and 1980 and “Serpukhov-15” incident of 1983.<sup>15</sup> The North American Aerospace Defense Command (“NORAD”) incidents involved a pair of US technological errors that produced false alarms of Soviet bombing.<sup>16</sup> First, in 1979, the US Air Force’s Ballistic Missile Early-Warning System was triggered when it was accidentally fed test scenario data of a Soviet nuclear attack.<sup>17</sup> Only NORAD was able to intercept the Warning System and confirm that the alert was false.<sup>18</sup> Second, in 1980, a faulty computer chip created two false alarms indicating that the Soviet Union launched 220, and then 2,200, missiles at the United States.<sup>19</sup> A US National Security Advisor intercepted the alarm,

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10. *See id.* at 11–12.

11. *See id.* at 11.

12. *See id.*

13. *See id.*

14. *See id.* at 12.

15. *See* CHATHAM HOUSE REPORT, *supra* note 5, at 12–13.

16. *See id.*

17. *See id.* at 12.

18. *See id.* *See also* *March 2020 – North American Aerospace Defense Command (NORAD)*, GOV’T CANADA (Sept. 30, 2021), <https://www.canada.ca/en/department-national-defence/corporate/reports-publications/transition-materials/caf-operations-activities/2020/03/caf-ops-activities/norad.html> [<https://perma.cc/JP6H-MMS6>] (“The North American Aerospace Defense Command (NORAD) is a binational military command responsible for aerospace warning, aerospace control, and maritime warning. As a binational command, the NORAD Commander is appointed by and responsible to the Heads of Government of both Canada and the United States (US).”).

19. *See* CHATHAM HOUSE REPORT, *supra* note 5, at 13.

reported that no other warning systems detected the missiles, and clarified it was a false report just moments before President Carter was to be notified of the alleged attack.<sup>20</sup>

Similarly, the Serpukhov-15 incident included Soviet data issuing false reports that the United States had launched five missiles at the Soviet Union.<sup>21</sup> The Soviet Lieutenant Colonel on shift that evening considered that five missiles was a far fewer number than what Soviet strategists believed was likely to be part of a US first strike and that satellites can give false reports under certain atmospheric conditions, and ultimately reported the incident as a false alarm.<sup>22</sup> The Lieutenant Colonel's judgment call prevented the Soviet Union from launching a deadly nuclear counter-attack.<sup>23</sup> In all three of these situations, the technical malfunctions could have caused devastating consequences had human intelligence and volition not intercepted the systems in place.

### *B. Human Error*

To contrast technical malfunctions, which are the result of mechanical and equipment errors, a human error is "a person's mistake rather than the failure of a machine."<sup>24</sup> In the context of nuclear near-misses, examples of human error include pilot mistakes, supervisory and maintenance mistakes, miscommunication, and inadequate training.<sup>25</sup> There is a trend for military personnel to underreport human errors and a preference to list technical malfunction in lieu of human error whenever possible, out of fear that reporting human error may reflect unfavorably on personnel or subordinates.<sup>26</sup> This trend is troubling because it skews statistics, which prevents remedial action against types of human error that remain unknown.<sup>27</sup>

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20. *See id.* The US National Security Advisor responsible for the interception was Zbigniew Brzezinski. *Id.*

21. *See id.*

22. *See id.*

23. *See id.* The Soviet supervisor on shift that evening was Lieutenant Colonel Stanislav Yevgrafovich Petrov. *Id.*

24. *Human error*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/human%20error> [https://perma.cc/F73F-UYCT] (last visited Dec. 7, 2022).

25. *See* Air Force Memo, *supra* note 9, at 14, 16.

26. *See id.* at 14–15.

27. *See id.* at 15.

Previous near-misses on account of human error include misplaced dry cleaning, careless handling of weapons, and lost letters.<sup>28</sup> For example, in 1981, the President of France’s nuclear launch codes were accidentally left in the pocket of the suit he wore the day before.<sup>29</sup> Similarly, US President Jimmy Carter’s nuclear launch codes were allegedly left in a suit that was sent to the dry cleaner.<sup>30</sup> Moments of misjudgment are not reserved for heads of State, however. In the early 1960s, North Atlantic Treaty Organization (“NATO”) weapons handlers were unloading Mark 7 nuclear warheads from a plane and accidentally pulled the arming wires from a warhead, initiating the arming sequence.<sup>31</sup> Additionally, during the “Black Brant Scare” of 1995, Norwegian research on the northern lights triggered a near-miss from Russia.<sup>32</sup> Although the Norwegian scientists sent letters to surrounding States, explaining that they would be launching a rocket to study the lights, Russian military personnel did not receive the communication.<sup>33</sup> Thus, when the Russians detected the rocket, they saw it as a surprise attack.<sup>34</sup> All four of these aforementioned instances occurred because of human mistakes, not technical malfunctions.

*C. Technical Malfunction, Human Error, and Contemporary Application*

Often, technical malfunctions and human errors are not mutually exclusive. Numerous nuclear near-miss situations have occurred because of a combination of technical malfunction and human error—one example being the “Black Saturday” incident of 1962.<sup>35</sup> In October of that year, a US spy plane was on its way to Alaska when the pilot began having difficulty navigating through the northern lights—a human error.<sup>36</sup> At the same time, radio communications were being

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28. See CHATHAM HOUSE REPORT, *supra* note 5, at 8 (detailing the alleged incidents of French President François Mitterrand’s and US President Jimmy Carter’s nuclear launch codes being left in their suits; NATO weapons handlers pulling the arming wires of a weapon while unloading it from a plane); *id.* at 16–17 (summarizing the Black Brant Scare, in which a Norwegian letter giving notice of a research rocket being launched was lost, causing Soviet alarm).

29. *See id.* at 8.

30. *See id.*

31. *See id.*

32. *See id.* at 16–17.

33. *See id.*

34. *See id.*

35. *See id.* at 9–10.

36. *See id.* at 9.

received from an unknown origin, instructing the pilot to fly into Soviet territory—a technical malfunction.<sup>37</sup> Soviet planes detected the US plane, mistook it for a nuclear bomber, and pursued it until the Soviet planes were forced to refuel and the US plane was able to safely depart Soviet airspace.<sup>38</sup> After the incident, Russian Premier Nikita Khrushchev wrote to US President Kennedy:

How should we regard this[?] What is this: a provocation? One of your planes violates our frontier during this anxious time . . . Is it not fact that an intruding American plane could easily be taken for a nuclear bomber, which might push us to a fateful step?<sup>39</sup>

This quote highlights the anxiety and realization of risk that can stem from nuclear near-misses caused by accidents and unintended situations.

It is unclear exactly how many cases of nuclear near-misses have occurred in the twenty-first century.<sup>40</sup> However, the threat of technical and human error certainly still exists. In October 2010, a launch control center at Warren Air Force Base in Wyoming lost contact with nuclear missiles under its control for nearly an hour because a circuit card in one of the computers had been improperly installed.<sup>41</sup> Although commentary surrounding this incident focused on US military fitness, Bruce Blair, an analyst and former missile launch officer, candidly noted:

[T]he more important concern should be that for the better part of an hour, the safeguards that protect against unauthorized launch of America's missiles were compromised . . . the remote

37. *See id.*

38. *See id.* at 10.

39. *Id.*

40. Executive Order 13526 permits certain information relating to national security to be deemed “classified.” Exec. Order No. 13,526, 3 C.F.R. 13526 (2009). *See also* *Declassification Frequently Asked Questions*, US DEP’T OF JUST. ARCHIVES (Nov. 6, 2020), <https://www.justice.gov/archives/open/declassification/declassification-faq#:~:text=Only%2025%20year%20old%20or,declassification%20requirement%20of%20the%20Order> [<https://perma.cc/SM2L-GP6G>] (“Only 25 year old or older records that have been determined to have permanent historical value in accordance with title 44, U.S.C. are subject to automatic declassification”).

41. *See Close Calls with Nuclear Weapons*, UNION CONCERNED SCIENTISTS 1, 4–5 (Apr. 2015), <https://www.ucsus.org/sites/default/files/attach/2015/04/Close%20Calls%20with%20Nuclear%20Weapons.pdf> [<https://perma.cc/MME7-JCB7>].



underground launch centers that control them lost their ability to detect and cancel any unauthorized launch attempts.<sup>42</sup>

### III. *SURVEY OF EXISTING BODIES OF INTERNATIONAL LAW AND POSSIBLE APPLICATIONS TO ACCIDENTAL OR UNINTENDED USE OF NUCLEAR WEAPONS*

There are a handful of existing bodies of international law that may apply to accidental or unintended use of nuclear weapons. Part III specifically analyzes international criminal law, international human rights law, the Rule of Precaution, and the Treaty on the Prohibition of Nuclear Weapons. It also discusses these principles in practice through examination of the August 2021 US drone strike in Afghanistan.

#### A. *International Criminal Law*

International criminal law is one existing body of international law that may apply to accidental or unintended use of nuclear weapons. The International Criminal Court (“ICC”) oversees international criminal law and has jurisdiction over persons for the most serious international crimes, including genocide, crimes against humanity, war crimes, and the crime of aggression.<sup>43</sup> The accidental or unintended use of nuclear weapons may violate international criminal law under Article 8 or Article 8 *bis* of the Rome Statute of the International Criminal Court (“Rome Statute”), covering crimes against humanity and the crime of aggression, respectively.<sup>44</sup>

Under Article 8, the ICC has jurisdiction over war crimes “*when committed as part of a plan or policy* or as part of a large-scale commission of such crimes.”<sup>45</sup> Two primary considerations stem from Article 8’s condition: the definition of a “war crime” and the definition of a “plan or policy.” First, Article 8, Paragraph 2 defines different activities that can constitute war crimes.<sup>46</sup> One enumerated example listed is “*attacking or bombarding, by whatever means, towns, villages, dwellings or buildings which are undefended and which are not military objectives.*”<sup>47</sup> At face value, this example can be understood

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42. *Id.* at 5.

43. *See* Rome Statute of the International Criminal Court, July 27, 1998, 2187 U.N.T.S. art. 1, 5 [hereinafter Rome Statute].

44. *See id.* arts. 8, 8 *bis*.

45. *Id.* art. 8 ¶ 1 (emphasis added).

46. *See id.* art. 8 ¶ 2.

47. *Id.* art. 8 ¶ 2(b)(v) (emphasis added).

to include nuclear detonation (“*attacking or bombarding*”) that was accidental or unintended (“*by whatever means*”).<sup>48</sup> Next, Article 8 does not define the phrase “plan or policy.”<sup>49</sup> Although this phrase is also not defined anywhere else in the Rome Statute, the United Nations has asserted in other contexts that a “plan or policy does not need to be explicitly stipulated or formally adopted and can, therefore, be inferred from the totality of the circumstances.”<sup>50</sup> This interpretation suggests that Article 8 covers any nuclear policy that involves the keeping of these weapons.<sup>51</sup> Therefore, the United States’ policy of deterrence would be a “plan or policy,” as would China and India’s policy of no-first-use and Russia’s policy of “strategic deterrence.”<sup>52</sup> Given this initial analysis of these provisions, it follows that the ICC may have jurisdiction over accidental or unintended use of nuclear weapons because such detonation could constitute a war crime.

The ICC may also have jurisdiction under Article 8 *bis*, which governs crimes of aggression.<sup>53</sup> A “crime of aggression” is the “planning, preparation, initiation, or *execution* . . . of an act of aggression,” and numerous things may qualify as an “act of aggression.”<sup>54</sup> One enumerated example in the statute is the “*bombardment* by the armed forces of a State against the territory of another State or the use of any weapons by a State against the territory of another State.”<sup>55</sup> Much like the analysis of Article 8, this example, at least at face value, can be understood to include nuclear detonation (“*bombardment*”) that was accidental or unintended as an “*execution*.”<sup>56</sup> As such, it follows that the ICC may have jurisdiction

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48. *Id.*

49. *See id.* art. 8 ¶ 1.

50. *Crimes Against Humanity*, U.N. OFFICE GENOCIDE PREVENTION AND THE RESP. TO PROTECT, <https://www.un.org/en/genocideprevention/crimes-against-humanity.shtml> [<https://perma.cc/8MMH-3KCN>] (last visited Apr. 6, 2023) (interpreting “plan or policy” in the context of Article 7 of the ICC, which covers crimes against humanity).

51. *See Rome Statute*, *supra* note 43, art. 8 ¶ 1. *See also id.* art. 21 ¶¶ 1–2 (explaining that if the ICC cannot apply the Rome Statute itself, it should then apply principles and rules of international law, which includes UN interpretation and guidance).

52. *See ARMS CONTROL ASS’N*, *supra* note 2; Lydia Wachs, *The Role of Nuclear Weapons in Russia’s Strategic Deterrence: Implications for European security and nuclear arms control*, STIFTUNG WISSENSCHAFT UND POLITIK COMMENT 68 (Nov. 2022), [https://www.swp-berlin.org/publications/products/comments/2022C68\\_NuclearWeaponsRussias\\_Deterrence.pdf](https://www.swp-berlin.org/publications/products/comments/2022C68_NuclearWeaponsRussias_Deterrence.pdf) [<https://perma.cc/NC3N-P89V>].

53. *See Rome Statute*, *supra* note 43, art. 8 *bis*.

54. *Id.* art. 8 *bis* ¶ 1 (emphasis added).

55. *Id.* art. 8 *bis* ¶ 2(b) (emphasis added).

56. *Id.* art. 8 *bis* ¶¶ 1, 2(b) (emphasis added).

over accidental or unintended use of nuclear weapons because such detonation could constitute a crime of aggression.

There are two potential critiques of applying these Rome Statute provisions to accidental or unintended nuclear detonation: *mens rea* and statutory interpretation. First, the ICC does not attach a specific *mens rea*, or requisite mental state, to either Article 8 or Article 8 *bis*, and the aforementioned analysis is most applicable if the lack of *mens rea* is interpreted as requiring no heightened mental state.<sup>57</sup> However, Article 30 of the Rome Statute imposes a universal *mens rea* of “intent” or “knowledge.”<sup>58</sup> If intent or knowledge were applied to Articles 8 and 8 *bis*, accidental or unintended nuclear detonation would not fall within those provisions because an accidental or unintended action of any kind cannot be not intentional or knowing. The logical counter of this critique is that Article 30’s universal *mens rea* simply does not apply when prosecuting accidental or unintentional nuclear detonation. Because it is impossible for an accidental or unintended action to satisfy an intentional or knowing mental state, it would therefore be impossible to prosecute an accidental or unintentional detonation as a war crime under Article 8 or a crime of aggression under Article 8 *bis*, despite it feeling appropriate, fair, and within the scope of the Rome Statute’s purpose.<sup>59</sup>

Other critiques could stem from the statutory interpretation of Article 8 and Article 8 *bis*.<sup>60</sup> Regarding Article 8, some may argue that

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57. See *Mens Rea*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/mens\\_rea](https://www.law.cornell.edu/wex/mens_rea) [<https://perma.cc/GL3V-NE8Q>] (last visited Mar. 14, 2023) (defining *mens rea* as “the state of mind statutorily required in order to convict a particular defendant of a particular crime”); Rome Statute, *supra* note 43, art. 8 ¶¶ 1, 2; *id.* art. 8 *bis* ¶¶ 1, 2(b).

58. See *id.* art. 30(1) (“unless otherwise provided, a person shall be criminally responsible and liable for punishment for a crime within the jurisdiction of the Court only if the material elements are committed with intent and knowledge”); *id.* arts. 30(2), 30(3) (defining “intent” and “knowledge,” respectively).

59. See *id.* art. 8, 8 *bis*. See also *id.* pmb. (“Affirming that the most serious crimes of concern to the international community as a whole must not go unpunished”).

60. Although questions of Rome Statute statutory interpretation are important, analysis is vast and goes beyond the scope of this Note. For more scholarship on this topic, see generally Leila Nadya Sadat & Jarrod M. Jolly, *Seven Canons of ICC Treaty Interpretation: Making Sense of Article 25’s Rorschach Blot*, 27 LEIDEN J. INT’L L. 755 (2014) (proposing seven canons of construction that may be helpful in interpreting the Rome Statute); Leena Grover, *A Call to Arms: Fundamental Dilemmas Confronting the Interpretation of Crimes in the Rome Statute of the International Criminal Court*, 21 EURO. J. OF INT’L L. 543 (2010) (identifying and analyzing “three fundamental [] dilemmas” in interpreting the Rome Statute); Caroline Davidson, *How to Read International Criminal Law: Strict Construction and the Rome Statute of the International Criminal Court*, 91 ST. JOHN’S L. REV. 37 (2017) (discussing debates around strict construction of the Rome Statute, sources of law, and lenity under Article 22(2)).

the “plan or policy” provision must be read in light of the entire sentence (“ . . . part of a plan or policy or as part of a large-scale commission of such crimes”) to conclude that the plan or policy must be in reference to the commission of such crimes.<sup>61</sup> However, under the Conjunctive/Disjunctive Canon of Construction, the word “or” joins a disjunctive list that expresses two mutually exclusive possibilities—here, “as part of a plan or policy” *or* “as part of a large-scale commission of such crimes.”<sup>62</sup> Regarding Article 8 *bis*, some may argue that the Canon of *Ejusdem Generis* be applied, under which the words “planning,” “preparation,” “initiation,” and “execution” would be construed as words “of the same kind.”<sup>63</sup> More specifically, this idea would support that the Canon applies the Article 30 *mens rea* to the “execution” item in Article 8 *bis*, as “planning,” “preparation,” and “initiation” all arguably have some level of intent behind them.<sup>64</sup> The response to this critique, again, is that the Conjunctive/Disjunctive Canon of Construction would support otherwise—that the disjunctive “or” in Article 8 *bis* is intended to treat “planning,” “preparation,” “initiation,” and “execution” as four separate items that are not conditioned upon one another.<sup>65</sup>

As a procedural matter, the United Nations Security Council, a State party, or the ICC Prosecutor can refer a Rome Statute war crime or crime of aggression violation to the ICC.<sup>66</sup> The ICC does not have its own police force, so it relies on cooperation with international non-governmental organizations and countries around the globe to make arrests, transfer asserted persons, and enforce sentences.<sup>67</sup> Although

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61. See Rome Statute, *supra* note 43, art. 8 ¶ 1.

62. See Nina A. Mendelson, *Change, Creation, and Unpredictability in Statutory Interpretation: Interpretive Canon Use in the Roberts Court’s First Decade*, 117 U. MICHIGAN L. REV. 71, 92 (2018) [hereinafter *Interpretive Canon Use*]; Rome Statute, *supra* note 43, art. 8 ¶ 1.

63. See Rome Statute, *supra* note 43, art. 8 ¶ 1.; *Ejusdem generis*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/ejusdem\\_generis#:~:text=Ejusdem%20generis%20\(ec%2Djose%2D,construed%20as%20limited%20and%20apply](https://www.law.cornell.edu/wex/ejusdem_generis#:~:text=Ejusdem%20generis%20(ec%2Djose%2D,construed%20as%20limited%20and%20apply) [https://perma.cc/2RMT-7SBD] (last visited Apr. 6, 2023).

64. Rome Statute, *supra* note 43, art. 8 *bis* ¶ 1. See *id.* art. 30.

65. *Id.* art. 8 *bis* ¶ 1. See *Interpretive Canon Use*, *supra* note 62.

66. See *How the Court Works*, INT’L CRIM. CT., <https://www.icc-cpi.int/about/how-the-court-works#:~:text=Prosecution%20cannot%20investigate.-,Investigations,arrest%20warrant%20may%20be%20issued> [https://perma.cc/49HX-4HU2] (last visited Feb. 28, 2023).

67. See *id.*

123 countries are State parties to the Rome Statute,<sup>68</sup> the United States does not recognize the jurisdiction of the ICC.<sup>69</sup> This limits the realistic application of international criminal law to the accidental or unintended detonation of nuclear weapons because the United States is the second largest nuclear State in the world.<sup>70</sup>

*B. International Human Rights Law and the Rule of Precaution*

International human rights law is another existing body of international law that could be applicable to the accidental or unintended use of nuclear weapons. The United Nations' Universal Declaration on Human Rights sets forth standards for international human rights law.<sup>71</sup> Specifically, Article 3 of the Declaration states "everyone has the right to life, liberty and security of person."<sup>72</sup> It is uncontested that the use of nuclear weapons, regardless if said use is accidental or unintended, will infringe upon people's rights to life, liberty, and security because the effects of these weapons are indiscriminate and capable of causing "catastrophic" destruction.<sup>73</sup> In fact, the UN Human Rights Committee has made clear that the threat or use of nuclear weapons is inherently incompatible with the right to life and may amount to a crime under international law.<sup>74</sup> Therefore, regardless of whether nuclear detonation occurred accidentally or

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68. *The State Parties to the Rome Statute*, INT'L CRIM. CT., <https://asp.icc-cpi.int/states-parties#:~:text=123%20countries%20are%20States%20Parties,of%20the%20International%20Criminal%20Court> [<https://perma.cc/YM7J-6TWF>] (last visited Feb. 28, 2023).

69. See generally *The U.S. Does Not Recognize the Jurisdiction of the International Criminal Court*, NPR (Apr. 16, 2022), <https://www.npr.org/2022/04/16/1093212495/the-u-s-does-not-recognize-the-jurisdiction-of-the-international-criminal-court> [<https://perma.cc/SP53-4XTU>].

70. *Which Countries Have Nuclear Weapons?*, ICAN, [https://www.icanw.org/nuclear\\_arsenals#:~:text=Russia%20has%20the%20most%20confirmed,Belgium%2C%20Germany%20and%20the%20Netherlands](https://www.icanw.org/nuclear_arsenals#:~:text=Russia%20has%20the%20most%20confirmed,Belgium%2C%20Germany%20and%20the%20Netherlands) [<https://perma.cc/R8RK-4HB5>] (last visited Feb. 28, 2023) ("Russia has the most confirmed nuclear weapons, with 5,997 nuclear warheads. The United States follows behind with 5,428 nuclear weapons . . . total nuclear warheads owned by these 2 countries alone counts for 90% of nuclear weapons in the world").

71. See UNIVERSAL DECLARATION ON HUMAN RIGHTS, G.A. Res. 217A (III), U.N. Dec A/810 (Dec. 10, 1948).

72. See *id.* art. 3.

73. See Alyn Ware, *UN Human Rights Committee Concludes that the Threat or Use of Nuclear Weapons Violates the Right to Life*, UNFOLD ZERO, <https://www.unfoldzero.org/un-human-rights-committee-condemns-the-threat-or-use-of-nuclear-weapons-and-other-wmd/> [<https://perma.cc/9XZQ-T2CA>].

74. See *id.*

unintentionally, the act would violate international humanitarian law by infringing upon the right to life.

A limitation with the UN Declaration, however, is enforceability. To contrast the slight issues of ICC enforceability, the UN Declaration is virtually unenforceable because member States are not legally bound to it.<sup>75</sup> Instead, its purpose is to serve as a framework to make recommendations and become incorporated into national constitutions and domestic laws.<sup>76</sup> The Human Rights Committee acknowledges this and suggests the following:

States parties must take all necessary measures to stop the proliferation of weapons of mass destruction, including measures to prevent their acquisition by non-state actors, to refrain from developing, producing, testing, acquiring, stockpiling, selling, transferring and using them, to destroy existing stockpiles, and to take adequate measures of protection against accidental use, all in accordance with their international obligations.<sup>77</sup>

Such a recommendation resembles two other concepts of international law: the Rule of Precaution and the Treaty on the Prohibition of Nuclear Weapons. First, the Rule of Precaution is the idea that States have a legal obligation to take “all feasible precautions . . . to avoid, and in any event to minimize, incidental loss of civilian life, injury to civilians[,] and damage to civilian objects.”<sup>78</sup> Examples of precautions and preventative measures may include ensuring military commanders obtain the best possible intelligence, not situating military objects close to civilian objects, and issuing a warning as soon as a nuclear weapon is launched.<sup>79</sup> Customary international law suggests that the Rule of Precaution applies during both times of war and peace, which also suggests that accidental or unintended use of nuclear weapons during either active war or a period of peace would

75. *See id.*

76. *See Universal Declaration of Human Rights*, AMNESTY INT’L, <https://www.amnesty.org/en/what-we-do/universal-declaration-of-human-rights/#:~:text=The%20UDHR%20is%2C%20as%20its,constitutions%20and%20domestic%20legal%20frameworks> [https://perma.cc/5GA5-PQUY].

77. Ware, *supra* note 73.

78. *Practice relating to Rule 15. The Principle of Precautions in Attack*, INT’L HUMANITARIAN L. DATABASE, [https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2\\_rul\\_rule15](https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_rul_rule15) [https://perma.cc/GXY8-PQSH].

79. *See The Principle of Precautions in Attack*, DIAKONIA INTERNATIONAL HUMANITARIAN LAW CENTRE, <https://www.diakonia.se/ihl/resources/international-humanitarian-law/ihl-principle-of-precautions-in-attack/> [HTTPS://PERMA.CC/SVB7-XN9K] (last visited Apr. 6, 2023).

violate the Rule of Precaution if the detonation resulted from inadequate precautions.<sup>80</sup> The second concept the Committee's recommendation resembles is the Treaty on the Prohibition of Nuclear Weapons.

### C. *Treaty on the Prohibition of Nuclear Weapons*

The Treaty on the Prohibition of Nuclear Weapons (“TPNW”) is a third source of international law that could be applicable to the accidental or unintended use of nuclear weapons. The TPNW is a multilateral treaty that bans the use, possession, development, testing, and transfer of nuclear weapons under international law.<sup>81</sup> The TPNW Preamble states that “*any* use of nuclear weapons would be contrary to the international law applicable in armed conflict, in particular the principles and rules of international humanitarian law.”<sup>82</sup> Thus, the statutory language suggests that even accidental or unintended use of nuclear weapons is unlawful under the TPNW’s ban.

To its detriment, the TPNW only has ninety-one signatories and sixty eight States parties as of July 12, 2022.<sup>83</sup> None of the nine nuclear weapons States are included in these numbers, and to the contrary, they all have boycotted the UN’s open-ended working group on nuclear disarmament.<sup>84</sup> This being said, no State that actually has access to nuclear power, and thus the capability of accidentally or unintentionally detonating nuclear weapons, is bound by the TPNW<sup>85</sup>—the specific source of authority that seeks to regulate the dangers of this risk.

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80. See *Rule 15. Principle of Precautions in Attack*, INT’L HUMANITARIAN L. DATABASE, [https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1\\_rul\\_rule15](https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule15) [https://perma.cc/7M9F-3BAS] (last visited Dec. 11, 2022).

81. See TPNW, *supra* note 1, art. 1 ¶ 1(1)(a).

82. *Id.* pmb1. (emphasis added).

83. See *Chapter XXVI: Disarmament*, U.N. TREATY COLLECTION, [https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=XXXVI-9&chapter=26](https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXXVI-9&chapter=26) [https://perma.cc/W5Q4-63B5] (last visited Dec. 7, 2022).

84. See *Treaty on the Prohibition of Nuclear Weapons (TPNW)*, NUCLEAR THREAT INITIATIVE, <https://www.nti.org/education-center/treaties-and-regimes/treaty-on-the-prohibition-of-nuclear-weapons/#:~:text=In%202022%2C%20Barbados%2C%20Burkina%20Faso,from%2021%2D23%20June%202022> [https://perma.cc/LX2R-YF7K] (last visited Dec. 7, 2022). See also MOXLEY, *supra* note 4, at 576–77 (listing the nine nuclear weapons States: United States, Russia, United Kingdom, France, China, Pakistan, India, Israel, North Korea).

85. See *id.*

*D. In Practice: August 2021 US Drone Strike*

There is yet to be an accidental or unintentional detonation of nuclear weapons to trigger international criminal law, international human rights law, the Rule of Precaution, or the TPNW.<sup>86</sup> Therefore, one can only theorize how these laws would apply. However, with the exception of the TPNW (because of its explicit scope of applying to nuclear weapons), one can analyze these principles under accidental or unintended use of conventional weapons. As such, this section will examine the August 2021 US drone strike in Kabul, Afghanistan.

On August 29, 2021, US intelligence mistook a vehicle carrying aid workers in Kabul for a vehicle associated with ISIS-K.<sup>87</sup> After surveying the vehicle throughout the day and determining with “reasonable certainty” that the vehicle posed an imminent threat to US forces at a nearby airport, the US military launched a drone missile and struck the vehicle in the late afternoon.<sup>88</sup> However, US intelligence was mistaken—the vehicle was not associated with ISIS-K and the detonation killed ten civilians, including seven children.<sup>89</sup> The US Department of Defense issued an official statement on September 17, 2021, detailing the incident and quoting the Commander of US Central Command apologizing for the “tragic mistake.”<sup>90</sup>

Although this accident occurred as a result of conventional weapons, its analysis under international law is similar to the aforementioned analysis resulting from nuclear weapons. This strike could fit under the textual definition of a war crime or crime of aggression under international criminal law,<sup>91</sup> as well as a violation of the UN Declaration on Human Rights’ Article 3 right to life.<sup>92</sup> As to a war crime, the drone strike was an “attack” on something

86. See Pomeroy, *supra* note 7.

87. See C. Todd Lopez, *DoD: August 29 Strike in Kabul ‘Tragic Mistake,’ Kills 10 Civilians*, U.S. DEP’T DEF. (Sept. 17, 2021), <https://www.defense.gov/News/News-Stories/Article/Article/2780257/dod-august-29-strike-in-kabul-tragic-mistake-kills-10-civilians/> [<https://perma.cc/AN34-C2HV>].

88. *Id.*

89. *See id.*

90. *Id.*

91. *See supra* Part III.A (defining a type of war crime as the “attacking or bombarding, by whatever means, towns, villages, dwellings or buildings which are undefended and which are not military objectives” and a crime of aggression as the “planning, preparation, initiation, or execution . . . of an act of aggression”).

92. *See supra* Part III.B (explaining that everyone has the right to life, liberty and security of person under the UN Declaration on Human Rights).



“undefended,”<sup>93</sup> and as to a crime of aggression, the strike was a “plann[ed],” “initiat[ed],” and “execut[ed]” “attack by the armed forces of a State of the territory of another State.”<sup>94</sup> As to a violation of the right to life, the strike deprived the ten victims of their “li[ves], liberty and security [as] person[s].”<sup>95</sup>

However, in December 2021, the Pentagon Chief announced that the US troops responsible for the detonation would not face any form of punishment or prosecution.<sup>96</sup> Although the Pentagon acknowledged that the event was a “tragic mistake,” it found no violation of law from the strike itself.<sup>97</sup> It further expressed, “what we saw here was a breakdown of process, and execution in procedural events, not the result of negligence, not the result of misconduct, not the result of poor leadership.”<sup>98</sup>

Two primary conclusions arise from this result. First, the United States and other countries who benefit from the United States’ policy of extended deterrence may be deemed hypocritical if they punish an adversary who makes a similar accidental or mistaken detonation of nuclear or conventional weapons, as the United States did not punish their own troops here.<sup>99</sup> And second, due to the lack of applicability and enforceability of international law in prosecuting this accidental and mistaken detonation, a separate body of law may be a better way to hold States responsible for their inadvertent actions. Part IV will examine this contention in part.<sup>100</sup>

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93. Rome Statute, *supra* note 43, art. 8 ¶ 2(b)(v). A limitation of this comparison is that the 2021 drone strike would not face the same *mens rea* critiques under Article 30 of the Rome Statute as the accidental or unintentional use of nuclear weapons because the US military personnel had the requisite intent—they intended to strike the car with the missile. *See id.* art. 30(1).

94. *Id.* art. 8 *bis* ¶¶ 1, 2(a). The same comparison limitation regarding *mens rea* applies to crimes of aggression as war crimes. *See supra* note 93.

95. UNIVERSAL DECLARATION ON HUMAN RIGHTS, *supra* note 71, art. 3.

96. *See* Eric Schmitt, *No U.S. Troops Will Be Punished for Deadly Kabul Strike, Pentagon Chief Decides*, N.Y. TIMES (Dec. 13, 2021), <https://www.nytimes.com/2021/12/13/us/politics/afghanistan-drone-strike.html> [<https://perma.cc/3F67-U8AC>].

97. *Id.*

98. *Id.*

99. Extended deterrence is the placement of US nuclear weapons in Western Europe to assure US allies that the US would actually use nuclear weapons to defend them in a situation of escalated conflict. *See* MOXLEY, *supra* note 4, at 471.

100. *See infra* Part IV.

IV. SURVEY OF POTENTIALLY ANALOGOUS US DOMESTIC  
LAW AND POSSIBLE APPLICATIONS TO ACCIDENTAL OR  
UNINTENDED USE

There are numerous bodies of US domestic law that may be applicable to accidental or unintended use of nuclear weapons by analogy. Sections A–D of this Part survey civil negligence, *res ipsa loquitur*, the doctrine of abnormally dangerous activities, and products liability. Section E acknowledges the considerations and limitations of available remedies for these four tort claims, as well as the doctrine of sovereign immunity. Sections F–G then survey data security law and criminal negligence.

A. Tort Law: Civil Negligence

Perhaps the most basic claim under tort law is civil negligence. There are four required elements to prove a civil negligence claim: (1) the plaintiff must suffer an injury; (2) the defendant must owe a legal duty to the plaintiff; (3) the defendant must breach that duty; and (4) the defendant’s breach must cause the plaintiff’s injury.<sup>101</sup> Given that negligence requires an individual actor, the principle is more applicable to human error than technical malfunction.<sup>102</sup> One way to demonstrate this is to draw on the alleged incident of President Carter’s launch codes being left in a jacket sent to dry cleaning—imagine the codes somehow got into the hands of the wrong person, the United States’ nuclear weapons were detonated, and the United States was subsequently accused of civil negligence.<sup>103</sup>

First, considering existing research on the short-term effects of a nuclear blast, along with residual effects such as radioactive fallout, electromagnetic pulse (“EMP”), and nuclear winter, it can be assumed that people would suffer an injury from an accidental or unintended detonation by the United States.<sup>104</sup> Thus, the first element of civil

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101. *Negligence*, LEGAL INFO. INST., <https://www.law.cornell.edu/wex/negligence> [<https://perma.cc/D8E3-YYXY>] (last visited Dec. 10, 2022) [hereinafter *Negligence*].

102. *See id.* (“someone of ordinary prudence;” “*the person’s* conduct”) (emphasis added).

103. *See* CHATHAM HOUSE REPORT, *supra* note 5, at 8; *supra* Part II.B.

104. *See* Richard Wolfsen & Ferenc Dalnoki-Veress, *The Devastating Effects of Nuclear Weapons*, MIT PRESS READER (Mar. 2, 2022), <https://thereader.mitpress.mit.edu/devastating-effects-of-nuclear-weapons-war/> [<https://perma.cc/MUW9-BR28>] (explaining the short-term effects of direct radiation, thermal flash, and the radius of destruction). *See also* Moxely, *supra* note 4, at 754–59 (describing the uncontrollability of radioactive fallout, EMP, and nuclear winter); *Electromagnetic Pulse*, ATOMICARCHIVE.COM,

negligence is satisfied.<sup>105</sup> Second, in this example, the United States would owe a legal duty to the people affected by the detonation. The United States is subject to binding principles of customary international humanitarian and human rights law; so, the United States consequently has a duty to exercise reasonable care with respect to complying with those laws, which can be manifested by providing safeguards against unintended nuclear detonations.<sup>106</sup> Certainly, the act of leaving the launch codes in the President's jacket for a dry cleaner to find lacks reasonable care. Therefore, the second element of civil negligence is also satisfied.<sup>107</sup>

Next, if this had happened, the United States would have breached its duty of care. The United Nations General Assembly defines a State breach of an international obligation as an act "not in conformity with what is required of it by that obligation, regardless of its origin or character."<sup>108</sup> Here, the nuclear detonation would be an act "not in conformity with what is required" by the United States' customary international law obligations, thus constituting the breach.<sup>109</sup> The fact that the detonation was accidental and inadvertent would not change the nature of the breach, as the General Assembly specifies a breach can occur "regardless of its origin or character."<sup>110</sup> Therefore, the third element of civil negligence is satisfied.<sup>111</sup> And finally, there would at least be factual, or *but-for* causation, in this scenario.<sup>112</sup> But-for the

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<https://www.atomicarchive.com/science/effects/emp.html> [<https://perma.cc/A2BD-HJCL>] (last visited Mar. 8, 2022) (explaining that EMP is an electromagnetic wave that results when nuclear gamma radiation is absorbed in the air, causing damage to electrical or electronic systems such as power lines or antennas).

105. See *Negligence*, *supra* note 101.

106. *Customary law*, INT'L COMM. RED CROSS, <https://www.icrc.org/en/war-and-law/treaties-customary-law/customary-law> [<https://perma.cc/JM2W-MRAR>] (last visited Apr. 6, 2023) (explaining that customary international law is derived from "general practice[s] accepted as law" and is reflected in a variety of domestic sources, such as military manuals, national legislation, and case law). Enforcement of customary international law is debated. For discussion, see generally Gary Born, *Customary International Law in United States Courts*, 92 WASH. L. REV. 1641 (2017); Jordan J. Paust, *Customary International Law and Human Rights Treaties are Law of the United States*, 20 MICHIGAN J. OF INT'L L. 301 (1999).

107. See *Negligence*, *supra* note 101.

108. Responsibility of States for Internationally Wrongful Acts, U.N. Doc. A/56/49(Vol. I)/Corr.4, art. 12 (2001).

109. *Id.*

110. *Id.*

111. See *Negligence*, *supra* note 101.

112. See *But-for cause*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/but-for\\_cause#:~:text=But%2Dfor%20cause%2C%20sometimes%20used,causation%20requirement%20of%20any%20tort](https://www.law.cornell.edu/wex/but-for_cause#:~:text=But%2Dfor%20cause%2C%20sometimes%20used,causation%20requirement%20of%20any%20tort) [<https://perma.cc/B5VM-EKXC>] (last visited Feb. 25, 2023).

jacket being sent to the dry cleaner's with the nuclear launch codes still in the pocket, this detonation would not have taken place. One limitation of this hypothetical, however, is that proximate causation, or the specific cause that is legally sufficient to support liability, is likely not met.<sup>113</sup> Although the nuclear codes were left in the jacket, there would have to be some intervening actor, the proximate cause, to take the codes from the jacket pocket, access the nuclear launch technology, and then detonate the weapons. For a strong civil negligence claim, the causation element must satisfy both *but-for* and proximate causation.<sup>114</sup>

### B. Tort Law: *Res Ipsa Loquitur*

The Latin translation of *res ipsa loquitur* is “the thing speaks for itself,” which perfectly describes this tort doctrine.<sup>115</sup> Under *res ipsa loquitur*, a plaintiff may be able to prevail on a claim without producing more than circumstantial evidence as to the precise way in which the defendant was careless.<sup>116</sup> There are three prerequisites to the doctrine.<sup>117</sup> First, the accident that harms the plaintiff must be of a type that tends to occur as a result of negligence.<sup>118</sup> Second, the instrumentality of the harm must be within the defendant's “exclusive” control.<sup>119</sup> And third, the plaintiff must be a passive victim.<sup>120</sup> One of the most famous tort cases demonstrating *res ipsa loquitur* is *Byrne v. Boadle*.<sup>121</sup> There, the plaintiff was knocked down by a barrel of flour

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113. See *Proximate cause*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/proximate\\_cause](https://www.law.cornell.edu/wex/proximate_cause) [https://perma.cc/Y8WB-VR2E] (last visited Mar. 13, 2023).

114. See *Negligence*, *supra* note 101; *Cause*, LEGAL INFO. INST., <https://www.law.cornell.edu/wex/cause>, [https://perma.cc/3CHA-HGU4] (last visited Mar. 13, 2023) [hereinafter *Cause*]. Another limitation of this hypothetical is that a potential plaintiff would be President Carter. See *Nixon v. Fitzgerald*, 457 U.S. 731 (1982) (holding that a US president is entitled to absolute immunity and cannot be sued for acting in their capacity as president).

115. *Res Ipsa Loquitur*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/res\\_ipsa\\_loquitur](https://www.law.cornell.edu/wex/res_ipsa_loquitur) [https://perma.cc/FFG5-WH6T] (last visited Dec. 7, 2022) [hereinafter *Res Ipsa Loquitur*].

116. See *id.*

117. See *id.*

118. *Id.*

119. *Id.*

120. *Id.*

121. *Byrne v. Boadle*, 159 E.R. 299 (Ex. C.R. 1863). Although *Byrne v. Boadle* is the case that created the *res ipsa loquitur* doctrine, the most common type of suits that argue *res ipsa loquitur* in the contemporary are medical malpractice suits. *What is “Res Ipsa Loquitur” and How Does It Affect Personal Injury Claims?*, SWEENEY MERRIGAN L. LLP,

that fell out of a building window.<sup>122</sup> The issue was that neither the plaintiff nor the owner of the building knew how this occurred.<sup>123</sup> *Res ipsa loquitur* was applicable because: (1) this accident could not have happened without some negligence, as barrels of flour do not fall out of windows on their own; (2) the barrel of flour was in the building owner's exclusive control; and (3) the plaintiff was a passive victim.<sup>124</sup> Thus, the court held for the plaintiff under the theory of *res ipsa loquitur*.<sup>125</sup>

The doctrine of *res ipsa loquitur* may be applicable to the accidental or unintended use of nuclear weapons. First, the accident resulting from the accidental or unintended detonation would be a result of some negligence—bombs very rarely detonate by mistake but for some negligence.<sup>126</sup> In fact, experts speculate that in normally stored environments, US nuclear weapons are “not supposed to exceed a one in a billion chance of prematurely detonating.”<sup>127</sup> Second, the nuclear weapons in question would be within the offending State's exclusive control. Absent nuclear terrorism, nuclear weapons are maintained by the State and are to be under the exclusive control of trained military personnel and scientists.<sup>128</sup> Third, the victims of the accidental or unintended detonation would certainly be passive. Thus, the detonation would “speak for itself.”

A general limitation of applying *res ipsa loquitur* is that in practice, the doctrine can be vague and unpredictable.<sup>129</sup> For example, some critics argue that any voluntary act by the plaintiff that contributes

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<https://www.sweeneymerrigan.com/blog/res-ipsa-loquitur-personal-injury/#:~:text=In%20cases%20where%20no%20other,used%20in%20medical%20malpractice%20lawsuits> [<https://perma.cc/43F9-EWGJ>] (last visited Apr. 6, 2023). However, understanding the *res ipsa loquitur* theory in *Byrne v. Boadle* is helpful in applying the elements to other tort claims where the victim is unexplainably struck and injured by something.

122. See generally *Byrne v. Boadle*, 159 E.R.

123. See *id.*

124. See *id.*

125. See *id.*

126. See Joe Phelan, *What Stops Nuclear Weapons from Accidentally Detonating?* LIVESCIENCE, <https://www.livescience.com/what-stops-nuclear-weapons-from-accidentally-detonating> [<https://perma.cc/4NVU-UZLF>].

127. *Id.*

128. See *Maintaining the Stockpile*, NAT'L NUCLEAR SEC. ADMIN., <https://www.energy.gov/nnsa/maintaining-stockpile#:~:text=The%20Office%20of%20Defense%20Programs,Stockpile%20Stewardship%20and%20Management%20Program> [<https://perma.cc/4HEM-G47B>] (last visited Apr. 1, 2023).

129. See *Res Ipsa Loquitur: Its Nature and Effect*, 3 U. CHI. L. REV. 126, 126 (1935).

to the injury, whether negligent or not, would necessarily render the *res ipsa loquitur* doctrine inapplicable.<sup>130</sup> However, this limitation is irrelevant when considering how *res ipsa loquitur* would be applied for accidental or unintended use of nuclear weapons because the likely plaintiffs would be innocent civilian victims who played no role in the detonation. Additionally, some States have considered reinterpreting the meaning of *res ipsa loquitur* claims, or even abandoning it all together.<sup>131</sup> For example, some cases in Singapore have adopted *res ipsa loquitur* to be an ordinary rule of evidence that is not specific to the tort of negligence, and the Supreme Court of Canada previously held that the doctrine was useless altogether and should be completely abandoned in negligence law.<sup>132</sup> These diverging State opinions could make *res ipsa loquitur* a difficult doctrine to implement at the international level.

### C. Tort Law: Abnormally Dangerous Activities Doctrine

Also under tort law, a person who participates in “abnormally dangerous activities” can be held strictly liable for physical harm caused upon others.<sup>133</sup> The Second Restatement of Torts (“Second Restatement”) lists factors to consider when determining if something is an abnormally dangerous activity.<sup>134</sup> These factors include: (1) the degree of risk of harm to a person, land, or chattels of others; (2) the likelihood that harm will be great; (3) the inability to eliminate the risk

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130. See *id.*; *Res Ipsa Loquitur*, *supra* note 115.

131. See Francis Trindade & Tan Keng Feng, “*Res Ipsa Loquitur*”: *Some Recent Cases in Singapore and Its Future*, 2000 SING. J. OF L. STUD. 186, 186 (2000).

132. See *id.* at 196 (citing the Court of Appeal of Singapore as explaining “the principle of *res ipsa loquitur* is no more than a rule of evidence of which the essence is . . . that an event which in the ordinary course of things is more likely than not to have been caused by negligence, it by itself evidence of negligence”); *id.* at 188 (“The Supreme Court of Canada has recently said in *Fontaine*: ‘It would appear that the law would be better served if the maxim was treated as expired and no longer used as a separate component in negligence actions.’”).

133. See *Abnormally Dangerous Activity*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/abnormally\\_dangerous\\_activity#:~:text=A%20person%20who%20is%20found,harm%20resulting%20from%20that%20activity](https://www.law.cornell.edu/wex/abnormally_dangerous_activity#:~:text=A%20person%20who%20is%20found,harm%20resulting%20from%20that%20activity) [https://perma.cc/4D5Y-UN42] (last visited Nov. 27, 2022). Strict liability allows a defendant to be held liable for an action regardless of their intent, mental state, or the level of care they took. See *Strict Liability*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/strict\\_liability#:~:text=Overview,examples%20of%20strict%20liability%20offenses](https://www.law.cornell.edu/wex/strict_liability#:~:text=Overview,examples%20of%20strict%20liability%20offenses) [https://perma.cc/9W7M-428K] (last visited Feb. 26, 2023) [hereinafter *Strict liability*].

134. See RESTATEMENT (SECOND) OF TORTS § 520 (AM. L. INST. 1965) [hereinafter RESTATEMENT OF TORTS § 520].

even with due care; (4) whether the activity is uncommon; (5) inappropriateness of the activity to the place; and (6) the activity's value to the community compared against its dangerous attributes.<sup>135</sup> None of these factors are dispositive—they are all to be considered and weighed equally.<sup>136</sup>

When analyzing these six factors, the mere keeping of nuclear weapons is likely an abnormally dangerous activity. Regarding the first and second factors, the Second Restatement says that the degree of risk in the activity must be major, with possible consequences being sufficiently serious.<sup>137</sup> Studies show that the blast and heat damage a nuclear bomb could cause would be thousands of times greater than that caused by conventional weapons, and the United Nations itself has asserted that “[n]uclear weapons represent a historically new form of weaponry with *unparalleled destructive potential*.”<sup>138</sup> This is without even considering the residual effects of radioactive fallout, EMP, and nuclear winter.<sup>139</sup> The Second Restatement coincides with this analysis, as it uses as an example: “[s]ome activities, *such as the use of atomic energy*, necessarily and inevitably involve major risks of harm to others, *no matter how or where they are carried on*.”<sup>140</sup>

Regarding the third factor, the Second Restatement says that most activities can eliminate the risk of being abnormally dangerous by exercising reasonable care.<sup>141</sup> However, when reasonable care cannot make the activity safe, then it remains an abnormally dangerous one.<sup>142</sup> The keeping of nuclear weapons, notwithstanding all precautionary measures, is an inherently and abnormally dangerous activity. Again, the Second Restatement itself supports this analysis, as it reads: “there is probably no activity, *unless it is perhaps the use of atomic energy*, from which all risks of harm could not be eliminated by the taking of all conceivable precautions.”<sup>143</sup> That being said, the first three factors, without question, all weigh in favor of the keeping of nuclear weapons

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135. *Id.*

136. *See id.* cmt. f.

137. *See* RESTATEMENT OF TORTS § 520, *supra* note 134, cmt. g.

138. MOXLEY, *supra* note 4, at 282 (emphasis added).

139. *See* Wolfson & Dalnoki-Veress, *supra* note 104 (explaining the residual effects of radioactive fallout, EMP, and climatic effects).

140. RESTATEMENT OF TORTS § 520, *supra* note 134, cmt. g (emphasis added).

141. *See id.* cmt. h.

142. *See id.*

143. *Id.* (emphasis added).

being considered an abnormally dangerous activity, as doing so could result in accidental or unintended use.

Regarding the fourth factor, the Second Restatement says an activity is of a common usage if it is “customarily carried on by the great mass of mankind or by many people in the community.”<sup>144</sup> As the keeping of nuclear weapons, creating the possibility of accidental or unintended use, is not an activity that can be undertaken by individuals, this provision can be analyzed with respect to the international community. Presently, only nine countries are considered to be nuclear weapons States.<sup>145</sup> Nine countries out of the existing 195 is certainly not a “great mass” of the world, nor “many [States]” within the international community.<sup>146</sup> It is also important to note that additional States at one time had nuclear weapons, but have since dismantled them, making the activity even more uncommon than it once was.<sup>147</sup> Thus, the keeping and use of nuclear weapons is not a common activity and weighs in favor of it being considered abnormally dangerous.

Regarding the fifth factor, the Second Restatement explains that appropriateness of location depends less about where the activity takes place, but more about how it interplays with other surrounding factors, such as people and property.<sup>148</sup> The issue with the accidental or unintended use of nuclear weapons, however, is that the dangerous, abnormal, and uncontrollable effects would spread far and wide.<sup>149</sup> It is not as if a State can detonate a nuclear weapon but have no spillage to human habitation or property of value, as an example in the Second

144. *Id.* cmt. i.

145. See MOXLEY, *supra* note 4, at 576–77 (listing the following States as nuclear weapons States: United States, Russia, United Kingdom, France, China, Pakistan, India, Israel, North Korea. Although Israel is known to have nuclear weapons, it has not formally acknowledged having them).

146. *How Many Countries Are There In the World?*, WORLDOMETER, <https://www.worldometers.info/geography/how-many-countries-are-there-in-the-world/#:~:text=Countries%20in%20the%20World%3A&text=There%20are%20195%20countries%20in,and%20the%20State%20of%20Palestine> [https://perma.cc/C3M4-E88S] (last visited Nov. 30, 2022); *Nuclear Weapons Worldwide*, UNION CONCERNED SCIENTISTS, NUCLEAR WEAPONS, <https://www.worldometers.info/geography/how-many-countries-are-there-in-the-world/#:~:text=Countries%20in%20the%20World%3A&text=There%20are%20195%20countries%20in,and%20the%20State%20of%20Palestine> [https://perma.cc/E3SX-CBY2] (last visited Apr. 15, 2023).

147. See MOXLEY, *supra* note 4, at 585, 587 (noting that South Africa, Iraq, Libya, and Taiwan have, at one time or another, acknowledged having nuclear weapons, but have since dismantled them).

148. See RESTATEMENT OF TORTS § 520, *supra* note 134, cmt. j.

149. See MOXLEY, *supra* note 4, at 282–83.



Restatement describes.<sup>150</sup> This being said, the fifth factor also weighs in favor of the keeping of nuclear weapons being considered an abnormally dangerous activity.

And finally, regarding the sixth factor, the Second Restatement acknowledges that even if an activity is abnormally dangerous, it may be so valuable to the community that the danger is not regarded as abnormal.<sup>151</sup> This is arguably the only factor that one can construe as both supporting and working against the keeping of nuclear weapons as an abnormally dangerous activity. On one hand, the population of some nuclear States may believe that the benefit of keeping nuclear weapons outweighs the risk of accidental or unintended detonation because nuclear power is exceptional and can be a “strategic game changer” in times of conflict.<sup>152</sup> On the other hand, the population of other nuclear States may believe that no national security interest is worth the “unacceptable humanitarian consequences” that the keeping of nuclear weapons poses to humanity.<sup>153</sup> Regardless of which position the majority supports, this sixth factor weighing one way or the other does not change the aforementioned analysis. A majority of the factors absolutely weigh in favor of the keeping of nuclear weapons being considered an abnormally dangerous activity, which implies that accidental or unintended use as an effect of such keeping could be held strictly liable as a tort law violation.<sup>154</sup>

#### D. Tort Law: Products Liability

Products liability is another avenue of tort law that could establish a claim against accidental or unintended use of nuclear weapons—

150. *See id.*

151. *See* RESTATEMENT OF TORTS § 520, *supra* note 134, cmt. k.

152. Commander Daniel Post, U.S. Navy, *The Value and Limits of Nuclear Deterrence*, U.S. NAVAL INST. (Jan. 2023), <https://www.usni.org/magazines/proceedings/2023/january/value-and-limits-nuclear-deterrence> [https://perma.cc/K26A-X96C]. The United States’ policy of deterrence has specified that it would only consider the intentional use of nuclear weapons in “extreme circumstances to defend the vital interests of the United States, its allies, and partners” and examples of such extreme circumstances could include “attacks on the U.S., allied, or partner civilian population or infrastructure[] and attacks on U.S. or allied nuclear forces, their command and control, or warning and attack assessment capabilities.” 2018 Nuclear Posture Review, *supra* note 3, at 21.

153. *Why does the Nuclear Ban Treaty matter?*, INTERNATIONAL COMMITTEE INT’L COMM. RED CROSS (Jan. 19, 2021), <https://www.icrc.org/en/document/why-nuclear-ban-treaty-matters#:~:text=Why%20do%20we%20need%20to,impact%20of%20nuclear%20weapons%20use> [https://perma.cc/H4UK-P2S6].

154. *See* RESTATEMENT OF TORTS § 520, *supra* note 134; *Strict liability*, *supra* note 133.

especially in a case of technical malfunction. To establish a claim for products liability, a plaintiff must prove: (1) the defendant sold a product; (2) the defendant is a commercial seller of such product; (3) the plaintiff suffered an injury; (4) the product was defective at the time of the sale; and (5) the defect was an actual and proximate cause of the plaintiff's injury.<sup>155</sup> Although these factors are similar to the doctrine of *res ipsa loquitur* in that they can establish liability without fault, they differ in that they shift the focus from those controlling the technology to the manufacturer of the technology.<sup>156</sup>

For a manufacturer of nuclear weapons to be held liable for accidental or unintended use under products liability, all five elements must be met.<sup>157</sup> First, to address elements (1) and (2), a plaintiff must prove that the defendant sold a product and that the defendant is a commercial seller of such product.<sup>158</sup> These may be the most uncertain elements because States use different techniques to manufacture nuclear weapons and it is unclear whether these manufacturers are “commercial sellers” of the weapons.<sup>159</sup> If a State's military is the manufacturer of such weapons, it is unclear if they are “commercial sellers” if they only produce technology to be utilized by themselves. In a similar vein, if a third party is contracted by a State military to produce the necessary technology, it is uncertain if they are a “commercial seller” if they do not make said technology available to other buyers. These are technical questions that require in-depth, and likely confidential, information about military contracting, which is beyond the scope of this Note, but nonetheless intriguing.<sup>160</sup>

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155. *Products liability*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/products\\_liability](https://www.law.cornell.edu/wex/products_liability) [https://perma.cc/Y2F4-HUGV] (last visited Dec. 2, 2022) [hereinafter *Products liability*].

156. *See id.*; *supra* Part IV.B.

157. *See Products liability, supra* note 155.

158. *See id.*

159. A “commercial seller” is “one engaged in the business or selling or otherwise distributing products.” RESTATEMENT (THIRD) OF TORTS: PROD. LIAB. § 1 (AM. L. INST. 1998). Although the United States, United Kingdom, France, and India involve private companies in the manufacturing of their nuclear weapons, available information indicates that China, North Korea, Israel, Pakistan, and Russia manufacture and maintain their nuclear weapons primarily or exclusively through their governments. *See Nuclear Weapon Producers, DON'T BANK ON THE BOMB*, <https://www.dontbankonthebomb.com/nuclear-weapon-producers/> [HTTPS://PERMA.CC/9ENW-49CA] (last visited Apr. 20, 2023).

160. The Atomic Energy Act of 1954 defines “Restricted Data” as “all data concerning (1) design, *manufacture*, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy.” Atomic Energy Act of 1954, 42 U.S.C. §2014(y) (1954) (emphasis added).

Element (4), that the product was defective at the time of the sale, may also be difficult to prove.<sup>161</sup> For example, if a switch malfunctions and leads to detonation, it will likely be impossible to determine whether the switch malfunctioned because it was improperly installed by the manufacturer before it was sold to the military, or if something happened after the sale, such as during transport or simply as time passed, that corroded the switch in a way that made it malfunction. The remaining two elements, however, would be easier to prove: (3) that the plaintiff suffered an injury<sup>162</sup> and (5) that the defect was an actual and proximate cause of the injury.<sup>163</sup> Analysis of these elements mirror the aforementioned analysis of civil negligence in that an injury can be bodily harm or harm to property, and there must be both *but-for* and proximate causation giving rise to liability to satisfy the causation element.<sup>164</sup>

Consequently, it may be more difficult for the accidental or unintended use of nuclear weapons to be addressed through a products liability claim, rather than a civil negligence, *res ipsa loquitur*, or abnormally dangerous activities doctrine claim, because there is more ambiguity surrounding the elements. However, if the detonation resulted from a clear technical malfunction that was understandably traceable to a commercial seller's manufacturing error, the doctrine could be applicable. Something that differentiates a products liability claim from civil negligence, *res ipsa loquitur*, and the abnormally dangerous activities doctrine, however, is that it does not face the same sovereign immunity issues if the manufacturer is a private company rather than the government.<sup>165</sup> However, if the manufacturer is a government contractor, immunity issues remain present.<sup>166</sup>

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161. See *Products liability*, *supra* note 155.

162. See Wolfson & Dalnoki-Veress, *supra* note 104 (detailing the short-term and residual effects of a nuclear blast).

163. See *Products liability*, *supra* note 155.

164. See *supra* Part IV.A; *Negligence*, *supra* note 101; *Cause*, *supra* note 114.

165. See *infra* Part IV.E.

166. See *Boyle v. United Technologies Corp.*, 487 U.S. 500 (1988) (holding that the Federal Tort Claim Act, which exempts government employees from tort claims, extends to government contractors).

*E. Considerations and Limitations of Available Remedies and Sovereign Immunity Under Tort Law*

There are a number of considerations and limitations in applying doctrines of American tort law to an international issue. The first of which is that remedies are typically limited to injunctions and monetary damages.<sup>167</sup> An injunction is a court order requiring a party to do or cease doing a specific action.<sup>168</sup> This remedy would not be applicable to this issue because an accidental or unintentional detonation would likely be a single instance, not something continuous that would allow for judicial intervention in the meantime. Damages are monetary compensation paid from the wrongdoing party to the injured party to “make the injured party whole.”<sup>169</sup> They can include compensatory damages, punitive damages, or both.<sup>170</sup>

One difficulty in issuing damages as a remedy to international issues is the question of whether the right to compensation belongs to the individuals harmed or to the State in which they live.<sup>171</sup> In this respect, there is tension between the law of armed conflict, which focuses on States, and international humanitarian and human rights law, which focus on individuals.<sup>172</sup> Another difficulty in considering damages is the policy of whether a monetary punishment is appropriate given the vast array of effects a nuclear blast would cause.<sup>173</sup> From one perspective, a primary purpose of tort law is “to provide [monetary] relief to injured parties for harms caused by others,” thus suggesting a consequence more severe than financial restitution, such as imprisonment or capital punishment, be ill-suited.<sup>174</sup> From another

167. See *Tort*, LEGAL INFO. INST., <https://www.law.cornell.edu/wex/tort> [<https://perma.cc/2HEC-8MMH>] (last visited Feb. 27, 2023) [hereinafter *Tort*].

168. *Injunction*, LEGAL INFO. INST., <https://www.law.cornell.edu/wex/injunction> [<https://perma.cc/R57V-D964>] (last visited Feb. 27, 2023).

169. *Damages*, LEGAL INFO. INST., <https://www.law.cornell.edu/wex/damages> [<https://perma.cc/Y3V8-UW9M>] (last visited Feb. 27, 2023).

170. See *Tort*, *supra* note 167 (defining compensatory damages as money “equal to the monetary value of the injured party’s loss of earnings, loss of future earning capacity, pain and suffering, and reasonable medical expenses” and punitive damages as money intended to deter future misconduct).

171. See Yael Ronen, *Avoid or Compensate? Liability for Incidental Injury to Civilians Inflicted During Armed Conflict*, 42 *VANDERBILT J. OF TRANS. L.* 181, 216 (2009).

172. *Id.* at 216–17.

173. See Wolfsen & Dalnoki-Veress, *supra* note 104.

174. *Tort*, *supra* note 167. See also *Tort Law and Alternative Methods of Compensation*, BRITANNICA, <https://www.britannica.com/topic/tort/Tort-law-and-alternative-methods-of-compensation> [[HTTPS://PERMA.CC/2CXB-MD2K](https://perma.cc/2CXB-MD2K)] (last visited Apr. 20, 2023) (explaining that a “major aim” of tort law is “full compensation” to the injured party, which may include

perspective, the keeping of nuclear weapons is a much more extreme activity with more extreme implications than most activities giving rise to tort claims, so compensatory and punitive damages alone may seem too lenient of a consequence for the devastation their use would cause.<sup>175</sup>

Another limitation of applying American tort law to accidental or unintentional use of nuclear weapons is the doctrine of sovereign immunity, which prevents a civil plaintiff from suing the US government without its consent; this principle applies to other States under customary international law.<sup>176</sup> At least in the United States, sovereign immunity also extends to the President when acting in his official capacity.<sup>177</sup> Thus, the doctrine of sovereign immunity creates a practical barrier to applying tort law to the accidental or unintended use of nuclear weapons because the previously discussed frameworks, including civil negligence, *res ipsa loquitur*, the abnormally dangerous activities doctrine, and possibly products liability, would require the injured party to sue a State as the wrongdoer.<sup>178</sup> If the injured party is precluded from suing a State, who in many cases may be implicated because of military action, they may be left with no avenue for relief.

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“monetary satisfaction for a variety of nonfinancial items of damage, such as pain and suffering or loss of amenities”).

175. The United States has suggested it would consider non-monetary remedies to incidents of torture, which is also a more extreme act than most activities giving rise to tort claims. See *Practice relating to Rule 150: Reparation*, INT’L HUMANITARIAN L. DATABASES, <https://ihl-databases.icrc.org/en/customary-ihl/v2/rule150> [https://perma.cc/NFE6-7RFE] (last visited Apr. 20, 2023) (“In 2005, in its second periodic report to the Committee Against Torture, the United States stated that it ‘continues to hold the view that in addition to monetary compensation, States should take steps to make available other forms of remedial benefits to victims of torture, including medical and psychiatric treatment as well as social and legal services.’”).

176. *Sovereign Immunity*, LEGAL INFO. INST., [https://www.law.cornell.edu/wex/sovereign\\_immunity](https://www.law.cornell.edu/wex/sovereign_immunity) [https://perma.cc/9R8T-G9CP] (last visited Feb. 27, 2023). See Foreign Sovereign Immunities Act, U.S. DEP’T STATE — BUREAU OF CONSULAR AFF’S, <https://travel.state.gov/content/travel/en/legal/travel-legal-considerations/international-judicial-asst/Service-of-Process/Foreign-Sovereign-Immunities-Act.html#:~:text=The%20immunity%20of%20a%20state,principle%20of%20customary%20international%20law> [https://perma.cc/L6GT-HKKH] (last visited Feb. 28, 2023).

177. See *Nixon v. Fitzgerald*, 457 U.S. 731 (1982) (holding that a US president is entitled to absolute immunity and cannot be sued for acting in their capacity as president).

178. See *supra* Part IV.A–IV.D.

*F. Data Security Law*

Data security law is one final body of civil law that may provide applicable standards to address the accidental or unintended use of nuclear weapons. Although there is no uniform data security law in the United States, individual US state data security statutes are intended to protect business and individual information from unauthorized access, use, disclosure, modification, or destruction.<sup>179</sup> As such, data security standards can provide analogous guidelines to regulate the protection of nuclear weapons from unauthorized access and detonation.

The American Law Institute (“ALI”) issues guidance to US states to serve as the framework for state laws and regulations on data security and privacy.<sup>180</sup> As a general matter, the ALI recommends state data controllers to adopt “reasonable security safeguards” to protect against data breaches.<sup>181</sup> Such safeguards may include administrative measures, physical measures, technical measures, and adequate training of employees,<sup>182</sup> and data controllers are required to regularly “assess privacy and security risks associated with their data activities and to maintain a reasonable[y] comprehensive program of oversight.”<sup>183</sup> To put this goal into practice, the ALI recommends that US states: (1) provide written policies and procedures addressing all data activities; (2) regularly take inventory of data collected, received, stored, and used; (3) establish risk assignments that are meant to identify, fix, improve, and remedy potential issues; and (4) develop a

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179. See *Data Security Laws: Private Sector*, NCSL (May 29, 2019), <https://www.ncsl.org/research/telecommunications-and-information-technology/data-security-laws.aspx#:~:text=to%20protect%20sensitive%20personally%20identifying%20information%20against%20a%20breach%20of%20security.&text=Implement%20and%20maintain%20reasonable%20security%20procedures%20and%20practices,the%20nature%20of%20the%20information.&text=A%20business%20that%20owns%2C%20licenses%2C%20or%20maintains%20personal%20information> [<https://perma.cc/H4HS-8TWR>]. The American Data Privacy and Protection Act passed out of the House Energy and Commerce Committee with overwhelming bipartisan support in July 2022, but did not ultimately make it to the House floor. Alfred Ng, *The raucous battle over Americans’ online privacy is landing on states*, POLITICO (Feb. 22, 2023, 4:30 AM), <https://www.politico.com/news/2023/02/22/statehouses-privacy-law-cybersecurity-00083775> [<https://perma.cc/F9A2-N3ZJ>].

180. See PRINCIPLES OF THE LAW OF DATA PRIVACY: PURPOSE AND SCOPE OF THE DATA PRIVACY PRINCIPLES § 1 (AM. L. INST. 2020).

181. PRINCIPLES OF THE LAW OF DATA PRIVACY: DATA SECURITY AND DATA BREACH NOTIFICATION § 11 (AM. L. INST. 2020).

182. See *id.* In practice, this may include things such as using a VPN, encrypting data, having secure network access, etc.

183. PRINCIPLES OF THE LAW OF DATA PRIVACY: ACCOUNTABILITY § 13 (AM. L. INST. 2020).

comprehensive training program that reaches all employees and contractors who have access to the data.<sup>184</sup> If a US state does not follow these accountability standards and a data breach results, the ALI suggests that enforcement proceedings be brought by the Federal Trade Commission or other governmental agencies that have jurisdiction over civil proceedings to determine the appropriate remedy, which may include compensation to injured parties, government fines, injunctions, restitution, or orders to comply.<sup>185</sup>

At face value, the ALI's recommended standards and regulations for data security sound somewhat similar to the Rule of Precaution.<sup>186</sup> Those in charge must put adequate safeguards in place, procedures and safety measures are expected to be checked regularly for compliance, and if the standards are breached, appropriate consequences will be dealt. Nuclear weapons States could mirror this standard for nuclear weapons by adopting laws that require: (1) providing written policies and procedures addressing the storing and handling of nuclear weapons; (2) taking regular inventory of nuclear weapons, both in active and inactive status; (3) establishing risk assignments that are meant to rectify potential sources of technical malfunction and human error; and (4) developing an even more robust training program for all military personnel, military lawyers, and policy experts about these weapons. Likewise, the United Nations Atomic Energy Commission ("UNAEC")<sup>187</sup> or UN Security Council could bring an enforcement proceeding against a State upon breach.

### G. *Criminal Negligence*

Given the severity of harm and chaos that would result from nuclear detonation, the international community may determine that no civil action is adequate to address the conduct and consequences of accidental or unintended use. *Criminal* negligence, therefore, may be the most punitively appropriate theory to apply to the accidental or unintended use of nuclear weapons. Under the United States' Model Penal Code:

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184. *Id.*

185. See PRINCIPLES OF THE LAW OF DATA PRIVACY: ENFORCEMENT § 14 (AM. L. INST. 2020).

186. See *supra* Part III.B.

187. See *infra* note 193 (detailing the creation of the United Nations Atomic Energy Commission ("UNAEC")).

A person acts negligently with respect to a material element of an offense when he *should be aware* of a substantial and unjustifiable risk that the material element exists or will result from his conduct. The risk must be of such a nature and degree that the actor's failure to perceive it, considering the nature and purpose of his conduct and the circumstances known to him, involves a *gross deviation* from the standard of care that a reasonable person would observe in the actor's situation.<sup>188</sup>

It is very clear that criminal negligence would only apply to detonation on account of human error. The language of the statute is individual-centric (e.g., "a person," "he should be aware," "known to him").<sup>189</sup> Additionally, the difference between US civil liability and criminal liability appears to be that where civil negligence requires a *deviation* from the standard of care, criminal negligence requires a *gross deviation* from the standard of care.<sup>190</sup>

In the context of accidental or unintended use of nuclear weapons, it is possible to think of a situation that may differentiate civil negligence from criminal negligence. To draw on the example of NATO weapons handlers accidentally pulling the arming wires from one of the weapons and initiating the arming sequence, imagine in one scenario the arming wires were accidentally pulled because the weapons handlers were chatting while completing the task.<sup>191</sup> This may be considered a deviation from or a breach of the standard of care because the activity may have required complete concentration, thus warranting civil negligence liability and consequences. Conversely, a scenario where the arming wires were accidentally pulled because the weapons handlers were under the influence of drugs or alcohol would create a stronger case for a *gross deviation* from the standard of care, thus warranting criminal negligence liability and consequences. Depending on the circumstance being able to apply punitive consequences, under criminal law, such as imprisonment, on those

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188. MODEL PENAL CODE §2.02(d) (AM. L. INST., Proposed Official Draft 1962) (emphasis added) [hereinafter MPC § 2.02].

189. *Id.*

190. See *Negligence*, *supra* note 101; MPC § 2.02, *supra* note 188; *Gross deviation definition*, L. INSIDER, <https://www.lawinsider.com/dictionary/gross-deviation#:~:text=Gross%20deviation%20means%20a%20deviation,than%20lack%20of%20ordinary%20care> [https://perma.cc/JSX5-DHUY] (last visited Feb. 28, 2023) (defining a gross deviation as "a deviation that is *considerably greater* than a lack of ordinary care") (emphasis added).

191. See CHATHAM HOUSE REPORT, *supra* note 5, at 8; *supra* Part II.B.



responsible for accidental or unintended detonation of nuclear weapons may be the more favorable approach over issuing monetary damages.

### V. *THREE RECOMMENDATIONS FOR CHANGE*

This Note has analyzed numerous different sources and principles of international and domestic law that could be applied to the accidental or unintended use of nuclear weapons. The next step is for the international community to decide which body of law, or parts of multiple bodies, it thinks is best to address this risk. Part V offers three recommendations on spaces where this deliberation and decision could take place.

#### A. *United Nations General Assembly Resolution*

One recommendation to address the legal principles applicable to accidental or unintended use of nuclear weapons is for the United Nations General Assembly to issue a resolution. A primary function of the General Assembly is to set standards and codify international law, and under the Charter of the United Nations, the General Assembly may “discuss any question relating to international peace and security” and make recommendations on it.<sup>192</sup> This would not be the first time the UN issued a resolution on nuclear power, as it established the UNAEC through a resolution in 1946<sup>193</sup> and issued a resolution to affirm its stance on nuclear disarmament in 2013.<sup>194</sup>

In this resolution, the UN could recommend which legal principles apply to this issue and take a variety of subsequent actions

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192. U.N. Charter art. 11 ¶ 2. *See Functions and powers of the General Assembly*, U.N., <https://www.un.org/en/ga/about/background.shtml> [<https://perma.cc/4LVQ-VNF8>] (last visited Nov. 20, 2022).

193. *See* G.A. Res. A/1(I) (Jan. 24, 1946). The establishment of the UNAEC was intended “to deal with the problems raised by the discovery of atomic energy” and to “make specific proposals: (a) for extending between all nations the exchange of basic scientific information for peaceful ends; (b) for control of atomic energy to the extent necessary to ensure its use only for peaceful purposes; (c) for the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction; (d) for effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions.” *Id.*

194. *See* G.A. Res. A/68/411 (Dec. 10, 2013). The General Assembly took numerous stances in this resolution, including calling for “urgent compliance with the legal obligations and the fulfillment of the commitments undertaken on nuclear disarmament,” declaring September 26 as the “International Day for the Total Elimination of Nuclear Weapons” to further devote the objective, and requesting the Secretary-General to “report on the implementation of the present resolution to the General Assembly at its sixty-ninth session.” *Id.* at ¶¶ 3, 7, 10.

to implement the recommendation. For example, like the UNAEC, it could establish a specific UN Commission dedicated to accidental or unintended detonation and emphasize the Commission by underlying the UN's support for the Commission and calling for international compliance.<sup>195</sup> Further, the Commission could set precautionary standards for nuclear weapons States, appoint an office to enforce such standards and keep States accountable, and work alongside international non-governmental organizations to promote legitimacy for the office and Commission more generally. As another example, if the UN were to recommend a tort law doctrine, it could devise a framework for determining the appropriate amount of damages to be paid by the wrongdoer to the injured party, as well as the instances for when punitive damages would be appropriate in addition to compensatory damages.

A limitation of General Assembly resolutions is that they are only recommendations—they are not binding on member States.<sup>196</sup> However, given the number of signatories to the Treaty on the Non-Proliferation of Nuclear Weapons, a similar number of State parties would hopefully be willing to adopt the suggestions of the General Assembly resolution.<sup>197</sup> Additionally, notwithstanding actual enforceability, General Assembly resolutions have considerable symbolic and political significance and can influence the development of customary international law.<sup>198</sup>

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195. See G.A. Res. A/1(I) (Jan. 24, 1946). See also G.A. Res. A/68/411 ¶¶ 1–2 (Dec. 10, 2013) (“underl[y]ing the strong support, expressed at the high-level meeting of the General Assembly on nuclear disarmament . . . for taking urgent and effective measures to achieve the total elimination of nuclear weapons; call[ing] for urgent compliance with the legal obligations and the fulfilment of the commitments undertaken on nuclear disarmament”).

196. *How Decisions are Made at the UN*, U.N., <https://www.un.org/en/model-united-nations/how-decisions-are-made-un#:~:text=Because%20the%20General%20Assembly's%20resolutions,possible%20implemenation%20of%20GA%20decisions> [https://perma.cc/G8VS-XC5H] (last visited Mar. 13, 2023).

197. The Treaty on the Non-Proliferation of Nuclear Weapons currently has 191 State signatories. See *Treaty on the Non-Proliferation of Nuclear Weapons (NPT)*, U.N., <https://www.un.org/disarmament/wmd/nuclear/npt/#:~:text=The%20NPT%20is%20a%20land mark,and%20general%20and%20complete%20disarmament> [https://perma.cc/FH7Z-3C3S] (last visited Nov. 15, 2022) [hereinafter UN NPT Page]; *infra* Part V.C.

198. Celine Van den Rul, *Why Have Resolutions of the UN General Assembly If They Are Not Legally Binding?*, E-INT'L REL.'S (June 16, 2016), <https://www.e-ir.info/2016/06/16/why-have-resolutions-of-the-un-general-assembly-if-they-are-not-legally-binding/> [https://perma.cc/5J9F-SH3X].

*B. New Treaty: Convention on Accidental or Unintended Use of Nuclear Weapons*

A second recommendation as to how the international community can devise which legal principles are applicable to accidental or unintended use of nuclear weapons is to create a new treaty particularly for this risk. With a proposed title of “Convention on Accidental or Unintended Use of Nuclear Weapons,” this treaty would aim to form a legally binding agreement among States specifically regarding the consequences and mitigation techniques for accidental or unintended detonation. As a policy matter, treaties can help ensure more sustained and long-term political engagement between world leaders and governments, define clear processes and tasks, and build a sense of global community.<sup>199</sup>

Since the Cold War, the international community has ratified over two dozen arms control treaties, many of which covering nuclear weapons, specifically.<sup>200</sup> The two most universal examples include the Treaty on the Non-Proliferation of Nuclear Weapons<sup>201</sup> and the aforementioned Treaty on the Prohibition of Nuclear Weapons.<sup>202</sup> Other highly-ratified treaties involving nuclear power include the Seabed Treaty of 1971,<sup>203</sup> in which eighty four States agreed to ban nuclear weapons on the ocean floor beyond a twelve mile coastal zone,<sup>204</sup> and the 2005 International Convention for the Suppression of Acts of Nuclear Terrorism,<sup>205</sup> in which 115 States agreed to improve the global legal framework to counter nuclear terrorist threats.<sup>206</sup> There

199. See *An International Treaty on Pandemic Prevention and Preparedness*, EUR. COUNCIL: COUNCIL E.U. <https://www.consilium.europa.eu/en/policies/coronavirus/pandemic-treaty/> [<https://perma.cc/G35C-Q7LN>] (last visited Dec. 10, 2022).

200. See *Arms Control Treaties*, ATOMICARCHIVE, <https://www.atomicarchive.com/resources/treaties/index.html> [<https://perma.cc/2EFT-WTUF>] (last visited Apr. 7, 2023).

201. See generally NPT, *supra* note 5; *infra* Part V.C.

202. See TPNW, *supra* note 1; *supra* Part III.C.

203. See generally Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof, May 18, 1972, 1044 U.N.T.S. 175.

204. See *id.*; *Seabed Treaty (1971)*, ATOMIC ARCHIVE, <https://www.atomicarchive.com/resources/treaties/seabed.html> [<https://perma.cc/P86K-653G>] (last visited Apr. 7, 2023).

205. See generally International Convention for the Suppression of Acts of Nuclear Terrorism, Apr. 13, 2005, 2445 U.N.T.S. 89.

206. See 15. *International Convention for the Suppression of Acts of Nuclear Terrorism*, U.N. TREATY COLLECTION, [https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtmsg\\_no=XVIII-](https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtmsg_no=XVIII-)

have also been a variety of regional and continental treaties addressing nuclear weapons, including the Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco) (1967),<sup>207</sup> the South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga) (1985),<sup>208</sup> and the African Nuclear-Weapon-Free Zone Treaty (Treaty of Pelindaba) (1996).<sup>209</sup>

As is the case with the proposed UN General Assembly resolution, however, a limitation of creating a new treaty is that it may not be signed by as many States as hoped, or as in the case of the TPNW, that the nuclear States will not sign on at all.<sup>210</sup> Another significant limitation of proposing the Convention on Accidental or Unintended Use of Nuclear Weapons is that the process for creating a multilateral treaty from scratch is quite robust. The UN Legislative Series has published a 500-page book on the multilateral treaty-making process, which covers the appropriate rationales for creating a multilateral treaty, the procedures for how the Secretary-General, State governments, and international organizations should review the proposed treaty, and the involvement of related UN agencies.<sup>211</sup> This being said, although it is inspiring to conceptualize a new international

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15&chapter=18&Temp=mtmsg3&clang=\_en [HTTPS://PERMA.CC/E68T-QTBZ] (last visited Apr. 7, 2023).

207. See generally Treaty for the Prohibition of Nuclear Weapons in Latin America and Caribbean, Apr. 22, 1968, 6346 U.N.T.S. 3. This treaty seeks to ban “the manufacture, acquisition, testing, deployment, or use of nuclear weapons in Latin America.” *Latin America Nuclear Free Zone Treaty (1967)*, ATOMICARCHIVE, <https://www.atomicarchive.com/resources/treaties/latin-nuclear.html> [https://perma.cc/L57D-D2NA] (last visited Apr. 7, 2023).

208. See generally South Pacific Nuclear Free Zone Treaty, Aug. 6, 1985, 1456 U.N.T.S. 243. This treaty “prohibits the testing, manufacture, and stationing of nuclear explosive devices, and the dumping of nuclear waste, within the zone.” *South Pacific Nuclear Free Zone Treaty (1985)*, ATMOMICENERGY, <https://www.atomicarchive.com/resources/treaties/south-pacific.html> [https://perma.cc/L57D-D2NA] (last visited Apr. 7, 2023).

209. See generally African Nuclear-Weapon-Free Zone Treaty, Apr. 11, 1996, 2225 U.N.T.S. 7. Signatories of this treaty pledge “pledge not to conduct research on, develop, test, or stockpile nuclear explosive devices; prohibit[] the stationing of nuclear devices on their territory; maintain[] the highest standards of protection of nuclear materials, facilities, and equipment; and [] prohibit the dumping of radioactive waste.” *African-Nuclear-Weapon-Free Zone Treaty / Treaty of Pelindaba (1996)*, ATOMICARCHIVE, <https://www.atomicarchive.com/resources/treaties/pelindaba.html> [https://perma.cc/UB5X-3SPZ] (last visited Apr. 7, 2023).

210. See generally TPNW, *supra* note 1; UN TREATY COLLECTION, *supra* note 1; NUCLEAR THREAT INITIATIVE, *supra* note 1.

211. *Review of the Multilateral Treaty-Making Process*, U.N. LEGISLATIVE SERIES, <https://legal.un.org/legislativeseries/pdfs/volumes/book21.pdf> [https://perma.cc/E8KZ-L4B5] (last visited Mar. 13, 2023) [hereinafter U.N. LEGISLATIVE SERIES].

treaty on this topic, it is certainly not the most feasible recommendation.

*C. Amendment of the Treaty on the Non-Proliferation of Nuclear Weapons*

A third recommendation as to how the international community could regulate the risk of accidental or unintended detonation through law is to amend the Treaty on the Non-Proliferation of Nuclear Weapons (“NPT”) to explicitly address how such use will be treated. The NPT is the most ratified arms limitation treaty in history and includes 191 State signatories—five of which are nuclear-weapons States.<sup>212</sup> The NPT recognizes that nuclear war would result in “devastation . . . upon all mankind,”<sup>213</sup> and therefore its objective is to “prevent the spread of nuclear weapons and weapons technology, to promote cooperation in the peaceful uses of nuclear energy[,] and to further the goal of achieving nuclear disarmament.”<sup>214</sup> The NPT covers a variety of issues concerning nuclear power including: (1) the transferring and receiving of nuclear weapons;<sup>215</sup> (2) safeguards and the verification of obligation fulfillment;<sup>216</sup> (3) research, production, and use of nuclear energy for peaceful purposes;<sup>217</sup> and (4) regional treaties for total absence of nuclear weapons.<sup>218</sup> Yet, it does not consider how accidental or unintended use of nuclear weapons would fit within its policy of nonproliferation.<sup>219</sup>

The NPT reiterates throughout its contents that peaceful nuclear activities are acceptable, logically implying that non-peaceful nuclear activities are unacceptable.<sup>220</sup> The amendment could clarify that accidental or unintended use should be treated as non-peaceful, and thus be subject to sanctions by the UNAEC and the UN Security Council if detonated. This recommendation would likely receive wide support among the international community because the targeted

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212. See UN NPT Page, *supra* note 197. The five nuclear-weapons States that have ratified the NPT are the United States, Russia, the United Kingdom, France, and China. See *id.* at “Status of the Treaty.”

213. NPT, *supra* note 5, pmb1.

214. UN NPT Page, *supra* note 197.

215. See NPT, *supra* note 5, art. I, II.

216. See *id.* art. III.

217. See *id.* art. IV.

218. See *id.* art. VII.

219. See generally NPT, *supra* note 5.

220. See *id.*

audience is States who have already committed to nuclear safety by ratifying the NPT in its original form. Additionally, amending a pre-existing international treaty contains the same aforementioned policy benefits of facilitating sustained and long-term political engagement between States and building international community as creating a new treaty.<sup>221</sup>

This recommendation is also the most feasible to implement. Article 8 of the NPT permits any State party to propose an amendment.<sup>222</sup> To do so, the text of the amendment may be circulated among all State parties, and if requested to do so by more than one third of the State parties, shall be considered at a conference.<sup>223</sup> If a majority of the State parties, including both nuclear and non-nuclear States, approve the amendment, it shall enter into force for every ratifying State party.<sup>224</sup> This process is much more streamlined than the process for creating a new multilateral treaty from scratch.<sup>225</sup>

## VI. CONCLUSION

Universally recognized international law about nuclear weapons is difficult to discern. Specific and established stances on accidental or unintended use of nuclear weapons are even more rare, if not nonexistent. However, the threat of this type of detonation is legitimate and the global community should proactively decide how to deal with this risk under international law. Drawing on principles of existing international law and analogous domestic law can be helpful in determining appropriate standards for such behavior. Iterating *the most applicable* principle, however, may come down to circumstance, including whether the detonation was a result of a technical malfunction or human error, what State or entity is serving as the global prosecutor, and if there is any order left after detonation to enforce an accident or mistake of this type. Ultimately, amending the NPT to explicitly classify accidental or unintentional detonation as non-peaceful use is the best way for global leaders to consider the nuances and implications of this risk, establish a unique set of standards and enforcement mechanisms for this type of use, and garner the support of

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221. *See supra* Part V.B.

222. *See id.* art. VIII.

223. *See id.*

224. *See id.*

225. *See* U.N. LEGISLATIVE SERIES, *supra* note 211.

both nuclear and non-nuclear States to ensure a future free of nuclear destruction.