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Old Laws, New Bullets.

A Tale of an Evolving Battlefield and Its Influence on Weapons Law. Part I

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RESEARCH REPORT

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RESEARCH REPORT

1. Introduction: Explosive and Expanding Bullets in the Law of Armed Conflict

Article 35 (1) Additional Protocol I to the Geneva Convention (hereafter AP I) puts forward one of the basic premises applicable to weapons in the laws of armed conflicts, namely:
"In any armed conflict, the right of the Parties to the conflict to choose methods or means of warfare is not unlimited."[1]

This fundamental premise clearly rejects the idea of 'Kriegsraison geht vor kriegsmanier'[2] and recognises that even in war, there are limits.[3] Indeed, parties to an armed conflict are limited by treaty and customary rules.[4] This also applies to the use of certain projectiles or bullets. In addition to the customary principle of superfluous injury or unnecessary suffering, bullets are specifically regulated by two treaties signed in the nineteenth century: The Saint-Petersburg Declaration of 1868 (hereafter the Saint-Petersburg Declaration) and the Declaration (IV,3) concerning Expanding Bullets of 1899 (hereafter the Hague Declaration).[5] These declarations have imposed limitations with regard to bullets or projectiles under international humanitarian law or the laws of armed conflicts.

The Saint-Petersburg Declaration prohibits the use of explosive bullets during war. The operative clause stipulates that:
"*The Contracting Parties engage mutually to renounce, in case of war among themselves, the employment by their military or naval troops of any projectile of a weight below 400 grammes, which is either explosive or charged with fulminating or inflammable substances.*"[6]

The Hague Declaration, for its part, prohibits the use of expanding bullets. Its operative clause stipulates:
"*The Contracting Parties agree to abstain from the use of bullets which expand or flatten easily in the human body, such as bullets with a hard envelope which does not entirely cover the core or are pierced with incisions.*"[7]

Both instruments seem to, prima facie, place clear limits on what is allowed in time of war. Nevertheless, since the nineteenth century, we have witnessed the proliferation of explosive munitions of all kinds. Hand grenades, 40mm grenades fired from grenade launchers, 12.7mm or .50 calibre multipurpose rounds fired from heavy crew-served machine guns or even 20mm autocannons of all kinds found on vehicles, planes, and helicopters have all become commonplace on the battlefield. All those projectiles are prima facie violating the Saint-Petersburg Declaration.

While the Hague Declaration seems to have withstood the test of time, questions still arise regarding the precise scope of the rule. The Declaration prohibits expanding bullets because of the gruesome nature of the wounds they create. Yet bullets that create similarly severe and grievous wounds through alternative technical

[1] Protocol additional to the Geneva Conventions of 12 August 1949, and relating to the protection of victims of international armed conflicts (Protocol I) 1125 UNTS 3 (adopted 8 June 1977, entered into force 07 December 1978) art. 35 (1).
[2] Translated from German: 'The necessities of war take precedence over the rules of war'. This is my own translation.
[3] Yves Sandoz, Christophe Swinarski and Bruno Zimmermann ed, Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949 (International Committee of the Red Cross, Martinus Nijhoff 1987), 1386; Emily Crawford and Alison Pert, International Humanitarian Law (3rd edn, CUP 2024), 231.
[4] Ben Saul and Dapo Akande (eds), The Oxford Guide to International Humanitarian Law (OUP 2020), 263.
[5] Declaration Renouncing the Use, in Time of War, of Explosive Projectiles under 400 Grammes Weight (St Petersburg, adopted 29 November 1868); Declaration (IV, 3) concerning Expanding Bullets (The Hague, adopted 29 July 1899).
[6] Declaration Renouncing the Use, in Time of War, of Explosive Projectiles under 400 Grammes Weight (St Petersburg, adopted 29 November 1868).
[7] Declaration (IV, 3) concerning Expanding Bullets (The Hague, adopted 29 July 1899).

means fall outside the Declaration's scope. In addition, whilst the use of expanding munitions is prohibited in time of war, police forces around the world are commonly employing such bullets. Since the twenty-first century, certain state practices and legal doctrine seem to carve out an exception for expanding bullets used by armed forces in 'police like' operations.

Considering this, do the rules of war take precedence over the necessities of war, or does the adagium 'Kriegsraison geht vor kriegsmanier' have some merit? In this two-part paper, this paper will argue that the changes in the understanding of the Saint-Petersburg Declaration, Hague Declaration, and the respective customary norms can be explained by changes in how war is fought. In interpreting the rules, the evolving nature of warfare and the accompanying need for matching capabilities should be taken into consideration. This, however, does not mean that the necessities of war take precedence over the rules of war. As will be argued, the fundamental core of the laws remains intact. This last point will be achieved through a subjective and teleological interpretation considering the structural reality of weapons law.

To this end, the first part of this two-part paper will briefly introduce what conceptually bullets are. It will also situate their development within the broader context of the nineteenth century. Following on, the paper will analyse the Saint-Petersburg Declaration by examining the historical context and its contemporary interpretation and customary status. In the second part of the two-part paper, the same analysis will be applied to the Hague Declaration and will include a reflective chapter that further develops the argument outlined in the paragraph above.

2. Bullets, Technology, Great Power Competition and the Emergence of Weapons Law

What distinguishes humans from other animals is our capacity to use tools. This capacity has, sadly, also been used for tools of war. Slingshots, swords, catapults or firearms are all examples of human ingenuity in that regard.[8] The essential goal of most weapons is the transfer of energy to the target to create a wounding effect.[9] This is also the case for bullets.[10] The role of a bullet is thus essentially to transport to the target the energy needed to achieve an intended effect.[11] It is, however, not the total energy that the bullet contains, which is essential for the wounding potential, but the ability to transfer that energy to the target.[12] Bullets thus cause damage by creating wound channels and tissue destruction. The extent of tissue destruction depends largely on the amount of kinetic energy transferred to the body.[13]

During the nineteenth century, firearms fundamentally changed, and the muzzle-loaded musket evolved into the rifle. This evolution is of particular importance for this paper as it provides the context for the initial development of the law. Muskets were highly imperfect weapons; the loading and ignition process was slow and unreliable, restricting the fire rate.[14] In addition, range and accuracy were quite limited.

[8] Sipri, Anti-Personnel Weapons (Routledge 1978), 4-5.
[9] Ibid, 3.
[10] A Bullet is a projectile, which exits the muzzle and flies through the air and hits the target. The cartridge is what goes in the weapon before firing and is made up of the case, the propellant (gun powder) and the bullet. See for example: ICRC, Wound Ballistics an Introduction for Health, Legal, Forensic, Military and Law Enforcement Professionals (International Committee of the Red Cross 2008), 8.
[11] Beat P. Kneubuehl (ed), Wound Ballistics: Basics and Applications (1st edn, springer 2011), 35.
[12] Ibid, 9-10 and 93.
[13] Eric Prokosch, 'The Swiss draft Protocol on Small-Calibre Weapon Systems Bringing the dumdum ban (1899) up to date' (1995) International Review of the Red Cross 35 (307) 411, 412.
[14] Sipri, Anti-Personnel Weapons (Routledge 1978) 5; Beat P. Kneubuehl (ed), Wound Ballistics: Basics and Applications (1st edn, springer 2011), 322; Brian J. Heard, Handbook of Firearms and Ballistics (2nd edn, Whiley-Blackwell 2008), 43; ICRC, 'Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects report on the work of experts' (1973) 30 and 77.

Indeed, contemporary military doctrine commonly foresaw that the musket was fired in volleys at close range.[15]

During the nineteenth century, various innovations such as percussion cartridges, conical bullets, and smokeless powder quickly followed one another. This ultimately led to the development of rifled breech-loading and repeating firearms.[16] In particular, the invention of smokeless powder was significant, as it increased the power of rifles. It moreover led to a reduction in the calibre to approximately 7-8 mm and the introduction of full metal jacket bullets.[17] At the end of the nineteenth century, the magazine-fed breech-loading, high-powered rifle became the standard adopted by all major powers in Europe.[18] Those developments in firearms technology and ammunition also paved the way for the automation of small arms in the twentieth century.[19]

The evolution from the musket to the rifle was one of many significant evolutions occurring during the nineteenth century. The nineteenth century was a period of rapid technological advancement during the Industrial Revolution.[20] Weapons developed at the time, such as the rifle, the machine gun, and the quick-firing artillery, significantly altered the way war was waged.[21] In addition to military technological evolution, armies were growing larger and national economies were becoming increasingly integrated.[22] These technological and military developments were particularly disruptive.[23]

In addition to being an age of rapid technological development, the nineteenth century was also an age of diplomacy, great power politics and imperialism.[24] European nations, not wanting to get outpaced, were sensitive to the evolving state of technology, as the major powers sought to maintain stability through a balance of power.[25] Against this backdrop of rapid technological change and balance of power, the first contemporary treaties and instruments on the law of armed conflict were introduced. Think, for example, of the first law of war manual, the Lieber Code of 1863 and the First Geneva Convention of 1864.

The nineteenth century was therefore a period of disruptive technological evolution and great power competition. Against this background, the first modern foundations of the law of armed conflict developed. Remarkably, the early modern law of weaponry focused quite heavily on bullets.

[15] ICRC, 'Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects report on the work of experts' (1973), 30 and 77.
[16] Sipri, Anti-Personnel Weapons (Routledge 1978), 6.
[17] Ibid, 8.
[18] Ibid, 15.
[19] Ibid, 8.
[20] Scott Keefer, ''Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 (4) War in History 445,449-450; Eric Brose, 'Arms Race prior to 1914, Armament Policy' (1914-1918 Online International Encyclopedia of the First World War, 2014) <https://encyclopedia.1914-1918-online.net/article/arms-race-prior-to-1914-armament-policy/>; ICRC, 'Weapons that may Cause Unnecessary Suffering or have Indiscriminate Effects report on the Work of Experts' (1973), 30 and 77.
[21] Sipri, Anti-Personnel Weapons (Routledge 1978), 12; Scott Keefer, ''Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 (4) War in History 4 445, 449.
[22] Robert Kolb and Momchil Milanov, 'The 1868 St Petersburg Declaration on Explosive Projectiles: A Reappraisal' (2018) 20 JHIL 515, 516.
[23] Sipri, Anti-Personnel Weapons (Routledge 1978), 12; Scott keefer, ''Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) War in History vol. 21 no. 4 445, 449; ibid.
[24] David Kennedy, 'International Law and the Nineteenth Century: History of an Illusion' (1996) 65 Nordic Journal of International Law 385, 391-392.
[25] Ibid, 390; Schroeder Paul, 'The "Balance of Power" System' (1975) 8 No. 2 Naval War College Review, 2; Hans Ulrich Scupin, 'History of International Law, 1815 to World War I' (1984) MPIL, 1 and 69; Eric Brose, 'Arms Race prior to 1914, Armament Policy' (1914-1918 Online International Encyclopedia of the First World War, 2014) <https://encyclopedia.1914-1918-online.net/article/arms-race-prior-to-1914-armament-policy/>.

3. The Saint-Petersburg Declaration: Original Prohibition and Contemporary Meaning

3.1 *What was sought to be prohibited by the Saint-Petersburg Declaration*

The first treaty provision of the modern era dealing with weaponry is the Saint-Petersburg Declaration.[26] As explained previously, the Saint-Petersburg Declaration prohibits the use of explosive bullets. It was a response against the development of the exploding rifle bullet by numerous European states.[27] The utility of these exploding rifle bullets, at the time, lay in their ability to destroy cases of artillery munitions or to be used as ranging fire.[28] At the time of their introduction, explosive bullets were seen as a normal evolution, paralleling the ongoing development of explosive artillery shells.[29] Initially, explosive bullets were thus used in an anti-material role. However, in 1867, the Russians modified their explosive bullet to allow the bullet to explode on impact with soft tissue in addition to the intended hard targets.[30] This development drew the attention of Tsar Alexander II.

The Russian Tsar, reportedly concerned by the well-being of troops, called for international regulation in 1868.[31] To this end, the Tsar started circulating a circular, intending to reach a norm by agreement through consensus. After receiving replies, a second circular containing a draft protocol was circulated.[32] On the proposal of the Prussian government, the initial intention, aimed at the immediate creation of an international rule by consensus, was broadened to include negotiations during a wider law-making conference.[33] A third circular, further acknowledging the Prussian proposal, negotiated the scope of what was going to be the diplomatic gathering at the conference in Saint-Petersburg.[34]

The common narrative regarding the intentions of the Russian Tsar is that he was motivated by humanitarian ideals; however views on this subject differ.[35] Professor Scott, for example, argues that the Russian circular was as much a reaction to the revolutionary changes in technology as it was a truly humanitarian gesture.[36] The rapid development of technology in light of the balance of power was indeed quite disruptive.[37] For instance, during the negotiations, the Russians expressed fears of an arms race and argued that it would happen at a very high financial cost.[38]

[26] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 134.

[27] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 205; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 no. 4 War in History 445, 451.

[28] For example, British Major Fosbery created an exploding bullet used since 1863 as mean to the range fire. His accounts of the bullet explains the usefulness of such bullet in a environment with steep mountains where distance is difficult to judge. He moreover explained that explosive bullets could be used on the enemy which had a 'strong moral effect' see Major G. V. Fosbery D.C., 'Explosive Bullets and Their Application to Military Purposes' (1868) Royal United Services Institution Journal, 23; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 450; Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 205.

[29] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 450.

[30] Sipri, Anti-Personnel Weapons (Routledge 1978), 211; Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21 no. 4 War in History 445, 450-451.

[31] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 451.

[32] Ibid, 452.

[33] Ibid, 452; Emily Crawford 'The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL' (2018) 20 JHIL 544, 548.

[34] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 452.

[35] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 135.

[36] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 450.

[37] Ibid, 447-449.

[38] Sean Watts, 'Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War' (2015) 91 INT'L L. STUD. 540, 571; James L. Tryon, 'The Hague Conferences' (1911) 20 YALE LAW JOURNAL 470, 471.

Both leading up to and during the conference, there were discussions about the precise extent of the soon-to-be rule. The British and the French delegations, for example, were reluctant to create a broader rule.[39] The arguments used are reminiscent of those found in more recent debates. The British delegation, for example, argued that regulations would hold weapons development back, and since future developments are unknown, regulating now would be unwise.[40] In line with the foregoing, the Swedish delegation said that "one cannot prejudge the progress of science".[41] This illustrates well the impact of state interests over the creation of humanitarian rules and in particular the unwillingness of states to limit or influence their existing arsenals or future procurement.[42] Some historians, for example, explain the British position as being a consequence of having the smallest army of the great powers and thus relying on technological advantage to offset this numerical weakness.[43]

The delegates from sixteen states, all the major military powers except Spain, attended the conference.[44] The broadened scope of the conference did not result in general limits on new technology, as the parties ultimately only chose to include a general principle prohibiting excessive injury in the preamble of the Declaration.[45] This principle did, however, have a significant impact on later weapons laws.

Regarding the operative clause, while the Russian delegation argued for a partial ban, the International Military Commission ultimately chose a total ban on the use of exploding or fulminating bullets under 400 grams.[46] The prohibition was nevertheless not absolute. Firstly, the prohibition was limited to exploding bullets less than 400 grams, an arbitrary dividing line between rifle and artillery ammunition.[47] Secondly, exploding bullets would only be prohibited in the mutual relation of the state parties in the event of war among only themselves, which partly illustrates the racial biases of the time.

Professor Keefer argues that this reciprocity clearly shows that humanity was not the only or most important objective, concluding that:
"*Thus, a new legal norm intended ostensibly for humanitarian purposes was effectively limited to the sphere of European international law, without regard to the mass of humanity outside its protection.*"[48]

Based on the preamble, it is, however, clear that the delegates of the International Military Commission in Saint-Petersburg justified the prohibition on the basis of humanitarian ideals. The preamble states that disabling the enemy was permissible but also sufficient, and while suffering is normal and expected of war, the useless aggravation of suffering would exceed the legitimate object of war.[49] As seen above, the factual

[39] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences,' (2014) 21(4) War in History 445, 453
[40] Ibid, 454 j° 446 and 452.
[41] Ibid, 453.
[42] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 146.
[43] Ibid, 446 and 452.
[44]Emily Crawford "The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL" (2018) 20 JHIL 544, 549.
[45] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 453.
[46] Emily Crawford "The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL" (2018) 20 JHIL 544, 552; Ibid, 453.
[47] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 207.
[48] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 454.
[49] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 206; Yoram Dinstein, The Conduct of Hostilities under the Law of International Armed Conflict (3rd edn, CUP 2016), 73; William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 46.

issue tackled by the Declaration was the use of the exploding rifle bullets, which essentially is a "single enemy" munition.[50] The delegates thus considered that, contrary to artillery, explosive rifle bullets were unnecessary.

Eventually, nineteen states signed or eventually acceded to the Saint-Petersburg Declaration, which included most major European military powers of the time.[51] The negotiations of the Saint-Petersburg Declaration highlight the difficulty in regulating rapidly evolving military technology. While the scope expanded to include a broader discussion on military technology, ultimately, it was only the explosive rifle bullets that were regulated in Saint Petersburg.

Although the Declaration was justified on humanitarian grounds, state interests played a significant role. Delegates expressed fears that regulations would be framed too broadly, limiting further evolutions; others feared the cost of a potential arms race, while others looked to the implications for the balance of power.[52] Regardless, the humanitarian legacy of the preamble is undeniable.[53] The operative clause of the Declaration ultimately contained an absolute prohibition of explosive bullets. This absolute nature, however, did not last. This matter will be examined in the subsequent section.

3.2 *What is the contemporary relevance of the Saint-Petersburg Declaration of 1868*

Since the twentieth century, the widespread use of explosive bullets has led legal doctrine to commonly state that the operative paragraph of the Saint-Petersburg Declaration did not stand the test of time.[54] Solis, for example, stipulates that the operative part of the Declaration has "no longer any practical importance".[55]

These conclusions are based on the observation that after the First and Second World Wars, a proliferation of explosive bullets under 400 grams occurred in multiple applications, such as in aerial warfare, crew-served and shoulder-launched weapons.[56] For example, since the Vietnam War, there has been a widespread use of the 40 mm grenades, shot from grenade launchers.[57] Finally, with only a quick look at a handbook of an ammunition producer, a significant number of explosive projectiles of less than 400 grams intended for both anti-material and anti-personnel (hereafter AP) use can be found.[58] Prima facie, all this violates the Saint-Petersburg Declaration. However, Meltzer explains that this has been a general state practice which evolved mostly unprotested.[59]

[50] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 206.
[51] Sean Watts, 'Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War' (2015) 91 INT'L L. STUD. 540, 569.
[52] Scott Keefer, "Explosive Missals': International Law, Technology, and Security in Nineteenth-Century Disarmament Conferences.' (2014) 21(4) War in History 445, 453-454.
[53] Crawford for example, rightly, argues that it is strongly suggested that states actions were motivated by self-interest and short-term objectives, but this does nothing to undermine the current normative force of the declaration, see: Emily Crawford "The Enduring Legacy of the St Petersburg Declaration: Distinction, Military Necessity, and the Prohibition of Causing Unnecessary Suffering and Superfluous Injury in IHL" (2018) 20 JHIL 544, 560.
[54] See for example: William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 135; Solis, Gary D., The Law of Armed Conflict: International Humanitarian Law in War (2nd edn, CUP 2016), 44; Nils Melzer, International Humanitarian Law: A Comprehensive Introduction (ICRC 2016), 112; Robert Kolb and Momchil Milanov, 'The 1868 St Petersburg Declaration on Explosive Projectiles: A Reappraisal' (2018) 20 JHIL 515, 519.
[55] Solis, Gary D., The Law of Armed Conflict: International Humanitarian Law in War (2nd edn, CUP 2016), 44.
[56] Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 45(3) Israel Law Review 401.
[57] Sipri, Anti-Personnel Weapons (Routledge 1978), 42.
[58] See for example: Nammo, Ammunition Handbook (7edn, 2024), 54 -61 and 80-105.
[59] Nils Melzer, International Humanitarian Law: A Comprehensive Introduction (ICRC 2016), 112.

The proliferation of explosive bullets has mostly been driven by the evolution of warfare during the early twentieth century. With the introduction of planes and vehicles on the battlefield, a need for explosive bullets arose. For example, Professor Ruys argues that explosive anti-materiel bullets carry undeniable military advantages. Armour-piercing combined-effects ammunition can penetrate a lightly armoured target and have an incendiary, blast or fragmentation effect inside the vehicle.[60] The military advantage of those types of munitions is the capability to effectively engage and defeat lightly armoured vehicles, which were introduced on the battlefield after the Second World War.[61]

Today, the prohibition of explosive bullets is a norm of customary international law. Both the customary and treaty rules are said to have evolved to only include the AP use of explosive bullets. The UK Manual on the Laws of War, for example, states that explosive or incendiary weapons solely designed for use against personnel are not permissible under customary law. Although it further explains that a solid round will achieve the military purpose of disabling the enemy combatant, it goes on to state that this "does not prevent the use of tracer, nor does it prevent the use of explosive or combined effects munitions of, for example, 0.5 or 20 mm calibre for defeating materiel targets, even though personnel may be incidentally wounded by them."[62]

The International Committee of the Red Cross (ICRC), for its part, stipulates in its Customary International Humanitarian Law study (CIHL study) that the AP use of bullets which explode within the human body is prohibited; this view seems to be based on state practise and doctrine.[63] As mentioned by Boothby, the ICRC does, however, not specify which standards should be applied when looking at the AP nature of the bullet. The rule can be interpreted to be applied to weapons designed for AP use or intended for AP use, or that have the effect of exploding in the human body.[64] Boothby convincingly argues that the only appropriate standard against which the rule should apply is the design purpose of the weapon, as this links the rule with the operational use for which the weapon has been acquired or produced.[65]

Professor Ruys goes further and describes how, irrespective of the verbal state practice, the prohibition of expanding bullets has evolved even beyond the prohibition of AP use.[66]

According to him, there has been significant 'physical' state practice which has changed the scope of the Declaration.[67] He describes three big changes. The first change happened with the development of aerial warfare, where states used explosive ammunition (even against personnel).[68] This practice is reflected in the Hague rules on aerial warfare and state practice. Secondly, since the First World War, explosive anti-materiel projectiles of less than 400 grams have widely been adopted and accepted.[69] Those weapons often were

[60] Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 2nd edn, CUP 2016, 409.
[61] Sean Watts, 'Regulation-Tolerant Weapons, Regulation-Resistant Weapons and the Law of War' (2015) 91 INT'L L. STUD. 540, 572.
[62] UK Ministry of Defence, The Manual of the Law of Armed Conflict (JSP 383) (Joint Doctrine and Concepts Centre), 6.10.1.
[63] Emily Crawford and Alison Pert, International Humanitarian Law (3rd edn, CUP 2024), 235; William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 137.
[64] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 137.
[65] Ibid, 136.
[66] Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 45(3) Israel Law Review 401, 407.
[67] Ibid, 408.
[68] Ibid.
[69] Ibid, 409.

combined-effects crew-served or shoulder-fired weapons. This led, according to Ruys, to a further distinction between anti-materiel and AP explosive bullets, commonly found in literature and manuals as seen above. A final third evolution concerns the permissibility of anti-personnel non-impact-triggered explosive projectiles. Non-impact-triggered explosive anti-personnel projectiles, such as grenades, have been widely used without objection.[70] As Ruys suggests, it can be argued that customary law mostly tends to limit "single-enemy" explosive bullets.[71] Ruys is of the opinion that "This statement would seem to provide an accurate reflection of the per se prohibition in customary international law as it stands".[72] This view is shared by the German Law of War Manual and other doctrinal works.[73]

This view can be confirmed and expanded if one looks at how bullets conceptually create an effect on the target. It is not the firearms themselves that create an effect on the target, but the projectile it fires. As seen above, conventional bullets are essentially objects that transport kinetic energy created by the propellant to the target. It is the transfer of that kinetic energy by hitting the target which will result in an effect on the target. Conventional small arms bullets thus use the same energy for both propulsion and to produce an effect on the target.[74]

Explosive or incendiary bullets are particular in the sense that an explosive round essentially has two packages of energy: one for propulsion (the powder in the cartridge) and one exclusively meant to create an effect (the explosive or incendiary charge within the bullet)[75] This bullet will thus create an effect on the target through two mechanisms. First, through the traditional transfer of kinetic energy upon impact, generated by the propellant. Second, through an explosive or incendiary effect resulting from a separate energy 'package' contained within the bullet.

From the preamble of the Saint-Petersburg Declaration, it is clear that suffering is normal and expected of war, but the principle found in the Declaration specifically targets the useless aggravation of suffering or the rendering of death inevitable.[76] As discussed previously, the explosive bullets that delegates sought to prohibit in 1868 were a type of ammunition used in standard-issue rifles, designed to explode upon contact with soft tissue, a "single enemy" munition.[77] This also explains the 400 grams limit, an arbitrary dividing line between illegitimate rifle ammunition and legitimate artillery ammunition.[78]

The question thus remains: what precisely did the delegates at Saint-Petersburg see as "uselessly aggravate the sufferings of disabled men, or render their death inevitable", making explosive projectiles under 400 grams "contrary to the laws of humanity"? I would argue that neither the explosive effect nor the kinetic energy of a

[70] Ibid, 415.
[71] Ibid, 416.
[72] Ibid.
[73] Federal Ministry of Defence, Law of Armed Conflict Manual (Joint Service Regulation, ZDv 15/2, 2013), 62; Stefan Oeter, 'Methods and Means of Combat' in Dieter Fleck (ed), The Handbook of International Humanitarian Law (OUP 2008) 130, 137-138.
[74] Beat P. Kneubuehl (ed), Wound Ballistics: Basics and Applications (1st edn, springer 2011), 53.
[75] Ibid.
[76] William H Boothby, Weapons and the Law of Armed Conflict (2nd edn, OUP 2016), 46.
[77] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 206; Tom Ruys, 'The xm25 individual airburst weapon system: a 'game changer' for the (law on the) battlefield? revisiting the legality of explosive projectiles under the law of armed conflict' (2012) 45(3) Israel Law Review 401, 416; Robert Kolb and Momchil Milanov similarly state: "The cold rationale was that since the explosive projectile and the ordinary bullet could put out of combat only one soldier, and since at the same time the effect of such modified bullets was considered to be inhuman" see: Robert Kolb and Momchil Milanov, 'The 1868 St Petersburg Declaration on Explosive Projectiles: A Reappraisal' (2018) 20 JHIL 515, 518.
[78] Frits Kalshoven, 'Arms, Armaments and International Law' (191 Collected Courses of The Hague Academy of International Law, Brill Nijhoff 1985) 183, 207.

projectile is, by itself, sufficient to be qualified as uselessly aggravating the sufferings or rendering death inevitable. It is only when a bullet, designed to hit a person, has an effect on the target because of the transfer of its kinetic energy and, in addition, explodes, that the bullet "would uselessly aggravate the sufferings (...) or render their death inevitable". The core of the prohibition is the cumulation of the two packages of energy, which render each other unnecessary.

3.3 *Concluding Thoughts*

The first part of this two-part series has started with a conceptual explanation of what bullets are and a short overview of the broader context of the nineteenth century. Afterwards the paper analysed the historical context and contemporary interpretation of the Saint-Petersburg Declaration. The declaration was adopted in response to explosive rifle bullets modified to target individual combatants rather than hard targets. But the negotiations resulted into an absolute ban of explosive bullets under 400 grams.

Subsequent developments in warfare have significantly altered how the prohibition is understood in practice. This evolution reflects changing military realities rather than a rejection of the underlying humanitarian principle. This paper agued, in line with the superfluous injury and unnecessary suffering principle, the prohibition prohibits the cumulative effects two packages of energy. The second part of this two-part series will turn towards the Hague Declaration, which prohibited expanding bullets. Additionally, the second paper will finish with a reflective chapter further considering how the law of weaponry changes in light of military realities.

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