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Analogies in the ongoing development of IHL (2001–present)

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Abstract

Since the onset of the third millennium, the battlefield reality has undergone profound changes, a trend that is expected to persist in the coming decades. State armed forces are increasingly investing in the development of lethal autonomous weapons systems and expanding their strategic capabilities in cyberspace and outer space. Concurrently, the prevalence of non-international armed conflicts – not only internal armed conflicts occurring within the territory of a single State, but also transnational armed conflicts crossing State borders – is steadily rising. In addition, recent armed conflicts have pushed belligerent actors to cooperate in various ways against a common enemy.

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The principle of effectiveness, which is of paramount importance in international humanitarian law (IHL), compels this legal framework to adapt to these changing realities of the battlefield. This article argues that analogical reasoning plays a pivotal role in facilitating IHL evolution, while also cautioning against the limitations and risks of its widespread use.

The analysis is structured in two main sections. First, the article explains the dual function of analogies in contemporary IHL discourses, illustrated through five paradigmatic examples addressing some of the field's most pressing issues. Second, it examines the limitations and risks of relying heavily on analogical reasoning in the ongoing development of IHL. The article concludes by underscoring the responsibility of IHL scholars and experts to remain vigilant against the misuse of analogies within this legal domain.

Keywords: international humanitarian law, analogies, analogical reasoning, lethal autonomous weapons systems, cyber operations, outer space, non-international armed conflicts, belligerent cooperation, limitations, risks.

Introduction

Since the beginning of the third millennium, the battlefield reality has undergone significant changes, a trend that is expected to continue in the coming decades.[1] Technological advancements have led to increasingly sophisticated means of warfare, prompting new debates on emerging issues such as lethal autonomous weapons systems (LAWS)[2] and hypersonic weapons.[3] These technological innovations also

1 Change in warfare during the twenty-first century is a research topic in and of itself. For instance, the Oxford Institute for Ethics, Law and Armed Conflict at the University of Oxford conducted a project entitled "Solferino 21" which "looks at warfare and humanitarian aid as it is today, and as it is likely to evolve in the next ten years", and which "traces similarities and changes between Dunant's day and our own". The results of the project are available at: www.elac.ox.ac.uk/programmes-projects/solferino-21/ (all internet references were accessed in August 2026). Similarly, the US-based Stimson Center "explor[es] the changing character of war and its implications for US foreign and defense policy" through its "War in the 21st Century" project. More information is available at: www.stimson.org/project/war-in-the-21st-century/.

2 Several recent doctoral dissertations have explored IHL challenges raised by LAWS. See e.g. Johanne Kirkham, "Les systèmes d'armes létaux autonomes: Une étude de droit international public", unpublished doctoral thesis, Université Paris-Panthéon-Assas, 10 December 2022, available at: https://theses.fr/2022ASSA0068; Alyson Berrendorf, "Analyse des conséquences juridiques des systèmes d'armes létaux autonomes ('LAWS'): Étude de l'autonomie, de la légalité et de la responsabilité pénale qu'implique l'émergence des LAWS", unpublished doctoral thesis, ULiège, 13 September 2025, available at: https://orbi.uliege.be/handle/2268/335366.

3 Compared to existing discussions on LAWS, debates on hypersonic weapons remain limited. See e.g. John Hursh, "Let's Make a Deal: How to Mitigate the Risk of Hypersonic Weapons", *Just Security*, 6 May 2020, available at: www.justsecurity.org/70025/lets-make-a-deal-how-to-mitigate-the-risk-of-hypersonic-weapons/; Elisabeth Hoffberger-Pippan, "Hypersonic Weapons and International Law: Incompatibilities with Arms Control Treaties and International Humanitarian Law", in Irene Couzigou (ed.), *International Law and Technological Change*, Edward Elgar, Cheltenham and Northampton, 2025.

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open up new domains for warfare, particularly in cyberspace and outer space.[4] The ongoing international armed conflict (IAC) between Russia and Ukraine clearly illustrates that contemporary hostilities already heavily rely on cyber-based and space-based capabilities.[5]

Moreover, as weaponry and battlefield locations evolve, certain categories of belligerents have gained greater prominence and visibility in armed conflicts. These include transnational organized armed groups such as Al-Qaeda and the so-called Islamic State group (IS), which have operated across several countries, as well as private military and security companies such as the Wagner Group.[6] Further, the increasing complexity of the battlefield is also evident in the growing interactions between actors, for example in terms of belligerent cooperation. Since the start of the century, such cooperation has been widely observed within non-international armed conflicts (NIACs), especially in the context of the global fight against terrorism,[7] but also in IACs, as exemplified – again – by the ongoing IAC between Russia and Ukraine, as both States have received various forms of military assistance.[8]

In light of all this, with the new millennium, it is almost an understatement to note that armed conflicts are rapidly evolving across multiple dimensions – material (the military equipment being used), personal (the nature of and interactions between the belligerent parties) and geographical (the various domains of warfare).

4 See e.g. Raphaël S. Cohen *et al., The Future of Warfare in 2030*, RAND Corporation, Santa Monica, CA, 2020, pp. 22–25, with Tables 4.3–4.4, available at: www.rand.org/content/dam/rand/pubs/research_reports/RR2800/RR2849z1/RAND_RR2849z1.pdf.

5 See e.g. Anders Fogh Rasmussen, "Ukraine Shows How Space is Now Central to Warfare", *Financial Times*, 21 November 2022, available at: www.ft.com/content/9abc0a33-9aec-4159-921e-44ef5c70aca4; Charlotte de Condé, "Le cyberespace, l'autre front de la guerre en Ukraine: 'C'est une menace très sérieuse pour le secteur spatial'", *La Libre*, 9 October 2025, available at: www.lalibre.be/international/europe/guerre-ukraine-russie/2025/10/09/le-cyberespace-lautre-front-de-la-guerre-en-ukraine-cest-une-menace-tres-serieuse-pour-le-secteur-spatial-DYWJ6K6SNRBWVAAGJDZAOBKQMM/.

6 For scholarly works on these topics, see e.g. Marco Sassòli, *Transnational Armed Groups and International Humanitarian Law*, Humanitarian Policy and Conflict Research Occasional Paper Series No. 6, Harvard University, 2006, available at: https://hhi.harvard.edu/publications/transnational-armed-groups-and-international-humanitarian-law; Jelena Aparac, Gabor Rona and Shaista Shameem, "Regulating Private Military and Security Companies: What's in It for States?", *EJIL: Talk!*, 7 April 2025, available at: https://www.ejiltalk.org/regulating-private-military-and-security-companies-whats-in-it-for-states/.

7 See e.g. Elise Vincent, "After Ten Years, France to End Military Operation Barkhane in Sahel", *Le Monde*, 9 November 2022, available at: www.lemonde.fr/en/international/article/2022/11/09/after-ten-years-france-to-end-military-operation-barkhane-in-sahel_6003575_4.html; "US War in Afghanistan Fast Facts", *CNN World*, 7 October 2025, available at: https://edition.cnn.com/world/operation-enduring-freedom-fast-facts; US Department of State, Bureau of European and Eurasian Affairs, "NATO: Coalition Contributions to the War on Terrorism", fact sheet, 31 October 2002, available at: https://2001-2009.state.gov/p/eur/rls/fs/14627.htm.

8 See e.g. Claire Mills, *Military Assistance to Ukraine (February 2022 to January 2025)*, research briefing, House of Commons Library, 14 January 2025, available at: https://researchbriefings.files.parliament.uk/documents/CBP-9477/CBP-9477.pdf; Julian E. Barnes and Michael Schwirtz, "Sending Troops to Help Russia Was North Korea's Idea, U.S. Officials Say", *New York Times*, 23 December 2024, available at: www.nytimes.com/2024/12/23/us/politics/russia-ukraine-north-korea.html; Steven Erlanger, Julian E. Barnes and Michael Crowley, "Iran Sent Short-Range Missiles to Russia, Western Officials Say", *New York Times*, 7 September 2024, available at: www.nytimes.com/2024/09/07/world/europe/iran-russia-missiles-ukraine.html.

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These ongoing transformations on the battlefield compel international humanitarian law (IHL) to adapt. The notion of effectiveness is central to understanding this imperative for adaptation. In international law, including IHL, effectiveness originally refers to the *principle of effectiveness*. With philosophical roots in the work of Niccolò Machiavelli and Georg Wilhem Friedrich Hegel, this principle entered the international legal order during the second half of the nineteenth century,[9] notably through an IHL instrument.[10] The rise of positivism provided the ideal environment for its emergence.[11] The principle of effectiveness was further developed in international legal scholarship during the first half of the twentieth century,[12] often associated with Hans Kelsen's writings.[13] If one still accepts today the existence of such a principle (as the present author does),[14] it presupposes a dynamic dialogue between tangible realities and the legal norms that seek to regulate them.[15] In other words, the principle calls upon IHL to remain attuned to the realities of the battlefield and thus "to be a realistic and pragmatic body of law".[16]

This being said, even for those who do not acknowledge the existence of a distinct principle of effectiveness,[17] it is difficult to deny that effectiveness – in its modern and broader sense[18] of success "in achieving what is wanted"[19] – requires

9 For an in-depth study on the historical development of the principle of effectiveness within international law, see e.g. Florian Couveinhes-Matsumoto, *L'effectivité en droit international*, Bruylant, Brussels, 2014, pp. 5–19.

10 Declaration Respecting Maritime Law, 16 April 1856, para. 4, available at: https://ihl-databases.icrc.org/en/ihl-treaties/paris-decl-1856/declaration. This declaration provides that "[b]lockades, in order to be binding, must be effective", thus making the legal effects of a blockade conditional upon effectiveness. It was in relation to this notion of blockade that the concept of effectiveness first came to be used systematically in international law, notably in jurisprudence and legal scholarship. For more information on this point, see F. Couveinhes-Matsumoto, above note 9, pp. 15–16, paras 18–19.

11 See e.g. F. Couveinhes-Matsumoto, above note 9, pp. 14–15, para. 16; Monique Chemillier-Gendreau, "A propos de l'effectivité en droit international", *Revue Belge de Droit International*, No. 1975-1, 1975, p. 46.

12 See e.g. F. Couveinhes-Matsumoto, above note 9, pp. 19–24.

13 See e.g. Hans Kelsen, "Théorie générale du droit international public: Problèmes choisis", in *The Hague Academy Collected Courses*, Vol. 42, Brill Nijhoff, Leiden, 1932.

14 In favour of such a principle in international law, see e.g. Katharine Fortin, *The Accountability of Armed Groups under Human Rights Law*, Oxford University Press, Oxford, 2017, pp. 242–245. In favour of such a principle within IHL, see e.g. Jérôme de Hemptinne, *Les conflits armés en mutation*, Pedone, Paris, 2019, pp. 112–128, paras 127–152.

15 On the definition of the principle of effectiveness, see e.g. K. Fortin, above note 14, p. 242; Enrico Milano, *Unlawful Territorial Situations in International Law: Reconciling Effectiveness, Legality and Legitimacy*, Brill Nijhoff, Leiden, 2005, p. 22; Charles de Visscher, *Les effectivités du droit international public*, Pedone, Paris, 1967, p. 13; Salvatore Zappalà, "Can Legality Trump Effectiveness in Today's International Law?", in Antonio Cassese (ed.), *Realizing Utopia: The Future of International Law*, Oxford University Press, Oxford, 2012, p. 105.

16 Tristan Ferraro, "The Applicability and Application of International Humanitarian Law to Multinational Forces", *International Review of the Red Cross*, Vol. 95, No. 891–892, 2013, p. 598: "IHL is meant to be a realistic and pragmatic body of law based on the principle of effectiveness."

17 In opposition to the existence of such a principle, see e.g. F. Couveinhes-Matsumoto, above note 9, p. 40, para. 40; M. Chemillier-Gendreau, above note 11, p. 38: "on peut dire que l'effectivité est une notion a-juridique".

18 F. Couveinhes-Matsumoto, above note 9, pp. 32–33, para. 32.

19 "Effectiveness" (business English), *Cambridge Dictionary*, available at: https://dictionary.cambridge.org/dictionary/english/effectiveness.

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some connection between law and fact. In this broader meaning, the *effectiveness of a legal regime* is defined by its capacity to secure compliance and to impose sanctions in cases of violation.[20] Actors are unlikely to respect a body of law that appears outdated when compared to tangible realities. Therefore, experts who discard effectiveness as a principle would, nevertheless, probably agree that, for IHL to remain effective, it must continually reassess whether its existing framework is adequate to regulate new challenges on the battlefield.

This article argues that analogical reasoning plays a crucial role in addressing IHL's adequacy to govern emerging battleground realities. It explores contemporary IHL discourses relating to evolving factual circumstances and the emergence of new norms or interpretations, demonstrating how extensively analogical reasoning is relied upon in the ongoing development of this branch of international law.

The temporal scope of this research begins in 2001. The start of the twenty-first century undoubtedly marks a turning point for IHL, with the exponential acceleration of technological progress and the tragic events of 11 September 2001 ushering in a new era of crisis, particularly for the law governing NIACs. The choice of time frame also situates the article as a continuation of a previous contribution published in this same forum.[21]

Following some useful preliminary reminders as to the definition and structure of analogies, the article examines the dual function of analogical reasoning in contemporary IHL literature and practice. This dual function is illustrated through five paradigmatic examples addressing some of the most pressing issues on the battlefield: LAWS, cyber operations, outer space warfare, NIACs, and belligerent cooperation in both NIACs and IACs. The article then considers the limitations and risks associated with the important use of analogies in the evolution of IHL.

Preliminary reminders

While this article does not intend to delve into all theoretical intricacies of analogical reasoning, a few foundational remarks are necessary.[22] For the purposes of this research, analogy is broadly understood as "the importation of knowledge from a

20 See e.g. F. Couveinhes-Matsumoto, above note 9, p. 33, para. 32. In today's world, where many horrific violent actions have occurred or continue to occur (e.g., in Gaza, Ukraine and the Democratic Republic of Congo), IHL effectiveness, understood in this broader sense, is often called into question in international legal scholarship. See e.g. Julia Grignon, "La pertinence et l'effectivité du droit international humanitaire à l'épreuve du conflit armé en Ukraine", *Annuaire Français de Relations Internationales*, 2024, pp. 555–567; Cordula Droege and Eirini Giorgou, "How International Humanitarian Law Develops", *International Review of the Red Cross*, Vol. 104, No. 920–921, 2022, pp. 1832–1833: "These in turn raise further questions as to the adequacy of the law if it leaves a large margin of discretion in interpretation; *or its effectiveness if it simply cannot be complied with by some parties*" (emphasis added).

21 Pauline Lesaffre, "Analogies in the Historical Development of IHL (1864–2001)", *International Review of the Red Cross*, Vol. 107, No. 930, 2025.

22 See also *ibid.*, pp. 1173–1175.

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well-known source onto a less well-known target by the establishment of correspondences between the two".[23] From a legal perspective – drawing on cognitive science – the "source" is thus a term of art which refers to a situation that is already governed by law and serves as the analogical reference point, while the "target" is the corresponding term of art which denotes a new, unregulated situation for which analogical inspiration is sought from the existing legal framework of the source.[24]

More specifically, analogical reasoning encompasses two variants relevant to this article. First, it may refer to a *similarity of terms* between the source and the target, allowing for the extension of the legal regime from the former to the latter. In his work on analogical reasoning in international law, Jean Salmon explains that

> il arrivera plus souvent qu'à son tour que l'interprète nourrira des doutes sur le point de savoir si les faits concrets soumis à son examen tombent bien dans les faits juridiques décrits par la règle. Si ces faits ne sont pas entièrement identiques à ce que prévoit la norme, s'ils leur ressemblent par certains aspects, mais en diffèrent par d'autres, la décision de les inclure dans la norme relève, à proprement parler, d'un raisonnement par analogie.[25]

In other words, in a similarity of terms, the resemblance (similarity) is primarily factual in nature: the known factual circumstances of the source (as captured by its legal framework) are similar, although not identical, to the new factual circumstances of the target. As a consequence of this factual similarity, the same legal regime can be argued, through analogy, to apply to both the source and the target, resulting in an identity of applicable norms. The legal framework developed for the source can therefore be extended to the target, even though the drafters or designers of that framework did not originally envisage the factual circumstances underlying the target situation.

Second, and alternatively, analogy may also relate to a *similarity of relations*. This means that the legal framework designed for the source helps illuminate what the legal framework for the target is or ought to be. The source and target do not

23 Isabelle Blanchette and Kevin Dunbar, "Analogy Use in Naturalistic Settings: The Influence of Audience, Emotion and Goals", *Memory and Cognition*, Vol. 29, No. 5, 2001, p. 730.

24 On the analogical vocabulary, see e.g. Frederick Schauer, *Thinking Like a Lawyer: A New Introduction to Legal Reasoning*, Harvard University Press, Cambridge, MA, and London, 2009, p. 87; Frederick Schauer, *Why Precedent in Law (and Elsewhere) is Not Totally (or Even Substantially) about Analogy*, HKS Working Paper No. RWP07-036, Harvard Kennedy School, 2007, p. 6, available at: www.hks.harvard.edu/publications/why-precedent-law-and-elsewhere-not-totally-or-even-substantially-about-analogy; Frederick Schauer and Barbara A. Spellman, "Analogy, Expertise, and Experience", *University of Chicago Law Review*, Vol. 84, No. 1, 2017, pp. 253–254; Luis Duarte D'Almeida and Claudio Michelon, "The Structure of Arguments by Analogy in Law", *Argumentation*, Vol. 31, 2017, p. 359; Lloyd L. Weinreb, *Legal Reason: The Use of Analogy in Legal Argument*, Cambridge University Press, Cambridge, 2005, p. 71; Scott Brewer, "Indefeasible Analogical Argument", in Hendrik Kaptein and Bastiaan van der Velden (eds), *Analogy and Exemplary Reasoning in Legal Discourse*, Amsterdam University Press, Amsterdam, 2018, p. 38.

25 Jean Salmon, *Droit international et argumentation*, Bruylant, Brussels, 2014, p. 279. Our translation: "[I]t will happen more often than not that the interpreter will harbour doubts as to whether the concrete facts under examination truly fall within the legal facts described by the rule. If these facts are not entirely identical to what the norm provides, if they resemble it in certain respects but differ in others, the decision to include them under the norm properly constitutes reasoning by analogy."

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actually share the same legal rules, but the legal regime of the target is inspired by that of the source. Writing on legal methodology, Véronique Champeil-Desplats notes on analogical reasoning that

> [l'analogie en ce sens] établit que "A est à B" ce que "C est à D". L'opération consiste à tenir pour équivalente deux relations entre des éléments différents, en étendant le lien connu entre deux premiers à deux autres.[26]

Thus, the elements being compared are relations: the known relationship between the established factual circumstances of the source and its existing legal framework serves as a guide for understanding the unknown relationship between the new factual circumstances of the target and its (potential) legal framework. Hence, in contrast with similarities of terms, there is no identity at either the factual or the legal level. The established factual circumstances of the source are similar – but not identical – to the new factual circumstances of the target; the legal framework applicable to the source is also similar – but not identical – to the proposed legal framework for the target. The envisaged legal framework for the target builds upon, rather than replicates, the legal framework of the source.

Regarding its structure, analogical reasoning typically follows a three-step process, originally conceptualized in cognitive science and now widely accepted in legal theory. The *retrieval* step involves the cognitive act of selecting a relevant source or several relevant sources from memory. The *mapping* step requires identifying similarities and differences between the source and the target. Finally, the *transfer* step consists of extending and, whenever necessary, adapting the legal solution of the source to the target.[27]

With these conceptual foundations in place, the next sections explain the central role of analogical reasoning in IHL's ongoing development. After some general observations on the dual function of analogies within IHL, a series of thematic examples clearly demonstrate that the prominence of analogical reasoning in IHL today is not a mere illusion, but a fact reflected in the literature and practice. While analogies have not been treated as an independent subject of inquiry within IHL,[28] they are omnipresent in contemporary IHL discourses, whether in academic scholarship, State practice or the work of international institutions.

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26 Véronique Champeil-Desplats, *Méthodologies du droit et des sciences du droit*, Dalloz, Paris, 2022, p. 405. Our translation: "[Analogy in this sense] establishes that 'A is to B' what 'C is to D'. The operation consists in treating as equivalent two relations between different elements, by extending the known link between the first two to the other two." More generally, on the definition of analogy, see e.g. J. Salmon, above note 25, pp. 275–278, 285; Maurice Dorolle, *Le raisonnement par analogie*, Presses Universitaires de France, Paris, 1949, p. 47; Michel De Coster, *L'analogie en sciences humaines*, Presses Universitaires de France, Paris, 1978, pp. 19–20.

27 On the analogical steps, see also David Duarte, "Analogy and Balancing", in H. Kaptein and B. van der Velden (eds), above note 24, p. 88; Jacob M. Carpenter, "Persuading with Precedent: Understanding and Improving Analogies in Legal Argument", *Capital University Law Review*, Vol. 44, No. 3, 2016, pp. 465–466.

28 Except for this author's previous contribution in the present journal. For more information, see P. Lesaffre, above note 21, pp. 1171–1172.

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Centrality of analogical reasoning in contemporary IHL discourses

General observations: A dual function for IHL analogies

Research in IHL literature and practice on contemporary issues shows that IHL analogies fulfil two functions traditionally associated with analogical reasoning:[29] an interpretive function and a creative function. On the one hand, analogies play a significant role in interpreting existing IHL. On the other hand, they provide clues as to what future IHL could be.

An interpretive function for IHL analogies

When a new development occurs or, less frequently, is anticipated on the battlefield,[30] IHL experts and stakeholders typically begin by assessing, first, whether this branch of international law is applicable (as the applicability of the existing IHL framework is usually triggered by classical forms of armed conflicts where hostilities are conducted through common means and methods of warfare and by well-known actors), and second, whether it sufficiently regulates the emerging warfare situation. This approach is both necessary and welcome, especially given that States – the primary lawmakers in IHL – often struggle to follow the pace of technological advancements and battlefield evolutions, and may be reluctant to adopt new rules, although this possibility cannot be entirely discarded.[31]

In assessing IHL's resilience to battlefield evolutions, analogical reasoning helps determine whether the *lex lata* – the law as it stands – can accommodate these evolutions. Indeed, whenever a new warfare situation emerges on the battlefield, a recurring pattern of legal reasoning can often be observed in both IHL scholarship and practice: first, norm interpreters or norm appliers examine whether this new situation (target) is similar to a known warfare situation that is already regulated under IHL (source); and second, if they were able to identify enough similarities between the target and a source, they extend the scope of application of the existing

29 On the traditional functions of analogies, see e.g. J. Salmon, above note 25, pp. 286–293.

30 IHL often operates in a reactive or responsive manner, evolving *ex post facto* once the battlefield realities have already changed. For example, the Geneva Convention relative to the Treatment of Prisoners of War was adopted in 1929 in response to the mistreatment of prisoners of war (PoWs) during the First World War. Similarly, Geneva Convention IV relative to the Protection of Civilian Persons in Time of War was adopted in 1949 following the atrocities committed against civilians during the Second World War, in particular the Holocaust. However, as this article will further demonstrate, contemporary debates in IHL discussions suggest an emerging tendency to anticipate future developments in warfare rather than merely responding to past experiences. This is particularly evident in ongoing discussions concerning LAWS and the conduct of armed conflicts in outer space.

31 On this common assumption, see e.g. Marco Sassòli, "How Will International Humanitarian Law Develop in the Future?", *International Review of the Red Cross*, Vol. 104, No. 920–921, 2022, pp. 2054–2056; Pauline Charlotte Janssens and Jan Wouters, "Informal International Law-Making: A Way Around the Deadlock of International Humanitarian Law?", *International Review of the Red Cross*, Vol. 104, No. 920–921, 2022, p. 2112.

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IHL rule from the latter to the former. This legal reasoning is an analogical reasoning, and the relevant form of analogy is a similarity of terms, as previously defined.

In such cases, analogies follow the adoption of IHL norms and serve as a method of interpretation. Therefore, concerning IHL treaty rules, analogies must in principle operate within the interpretive boundaries established by the Vienna Convention on the Law of Treaties.[32] Through this interpretive function, analogical reasoning ensures the flexibility and dynamism of IHL norms. However, this presupposes that the language of IHL's existing rules remains sufficiently general and not overly detailed, thereby leaving room for interpretation.[33]

This interpretive function of analogies may be linked to the revisionist function of the principle of effectiveness, as identified by Jean Touscoz. Changes in social circumstances – in this case, developments in warfare – may lead to modifications in, or the evolution of, the content of existing rules, such as IHL rules.[34] According to the revisionist function of the principle of effectiveness, "[l]'interprète qui s'efforce de permettre au traité de remplir le plus complètement possible son rôle social devra donc adopter deux perspectives, conciliables et essentielles, la fidélité au texte et la dynamique du droit".[35] In this respect, interpretation through effectiveness is more readily accepted when a considerable period of time has elapsed since the adoption of the relevant rules.[36] This is generally the case for the main rules of IHL, most of which were adopted during the second half of the twentieth century.

Research conducted for the present article reveals, as a general observation, that the interpretive function of analogies is manifest in documents addressing new technologies and emerging war theatres such as LAWS (Example 1 below), cyberspace (Example 2 below) and outer space (Example 3 below). As a more specific observation, it is interesting to highlight that this function is frequently apparent in informal law-making mechanisms, such as expert manuals. Notable examples are the two *Tallinn Manuals on International Law Applicable to Cyber Operations* (Tallinn Manuals).[37] Referring to the Tallinn Manuals, Pauline Charlotte Janssens and Jan Wouters note that, "[r]ather than developing an entirely new legal paradigm, [the authors] tried to extend the scope of existing rules of IHL to new circumstances by way of interpretation and analogy".[38]

32 Vienna Convention on the Law of Treaties, 1155 UNTS 331, 23 May 1969 (entered into force 27 January 1980), Arts 31–33.

33 See e.g. M. Sassòli, above note 31, p. 2063, where the author indicates that "[t]he flip side of this rush to the detail is obviously that rules are more quickly outdated".

34 Jean Touscoz, *Le principe d'effectivité dans l'ordre international*, LGDJ, Paris, 1964, p. 158.

35 *Ibid.*, p. 165. Our translation: "The interpreter who seeks to enable a treaty to fulfil its social function as fully as possible must therefore adopt two complementary and essential perspectives: fidelity to the text and the dynamic development of the law."

36 *Ibid.*, p. 170.

37 Michael N. Schmitt (ed.), *Tallinn Manual on the International Law Applicable to Cyber Warfare*, 1st ed., Cambridge University Press, Cambridge, 2013 (Tallinn Manual 1.0); Michael N. Schmitt (ed.), *Tallinn Manual 2.0. on the International Law Applicable to Cyber Operations*, 2nd ed., Cambridge University Press, Cambridge, 2017 (Tallinn Manual 2.0.).

38 P. C. Janssens and J. Wouters, above note 31, p. 2116.

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A creative function for IHL analogies

After an initial assessment of the existing IHL framework, IHL experts and stakeholders may conclude that this framework does not, or does not sufficiently, address certain developments on the battlefield. Consequently, they may call upon lawmakers to adopt new rules and put forward proposals to that effect. As it is difficult to start from a blank slate, their proposals may rely on comparisons with well-established warfare scenarios and result from the adaptation of existing IHL rules. In these circumstances, such proposals constitute the outcome of analogical reasoning, the relevant form of analogy this time being a similarity of relations, as previously explained. The rules governing well-established warfare situations (sources) thus help determine and provide inspiration for what the applicable rules ought to be in response to these battlefield developments (targets). The latter rules are drawn from the former rules.

In this context, analogies perform a creative function. They precede the adoption of IHL norms and serve as a basis for *de lege ferenda* proposals. Although initially *lex ferenda*, these proposals may eventually become *lex lata*: they may be codified in a treaty (the conventional route) or be generally and consistently endorsed by States out of a sense of legal obligation, thereby crystallizing into customary norms (the customary route).[39]

This creative function of analogies may be associated with what Jean Touscoz identifies as the creative function of the principle of effectiveness. According to Touscoz, "[l]'effectivité, c'est-à-dire la relation qui existe entre un titre juridique et la réalité sociale, relation étroite et durable, conditionne … la formation des règles juridiques internationales".[40] When IHL no longer adequately reflects warfare realities, the principle of effectiveness may contribute to the emergence and development of new legal norms, relying on analogical reasoning as a particularly efficient tool.

Research conducted for the present article shows that the creative function of analogies is very common in developing the law of NIAC, as a subsequent subsection will illustrate (Example 4 below). Although the law of IAC is not directly applicable to NIACs, proposals for improving the law of NIAC are often inspired by IAC provisions. Additionally, in contemporary IHL literature and practice, analogies also play a similar *de lege ferenda* role in contexts other than the strict development of the law governing NIACs. They are used, for instance, to conceptualize belligerent cooperation – i.e., military assistance – in both NIACs and IACs (Example 5 below).

While the distinction between these two functions of IHL analogies may appear straightforward, an important caveat is necessary. For clarity purposes, the previous paragraphs have indeed separately presented the interpretive and creative functions of IHL analogies, as if they were two clearly distinguishable functions. As

39 For an official definition of customary international law, see Statute of the International Court of Justice, XV UNCIO 355, 26 June 1945 (entered into force 24 October 1945) (ICJ Statute), Art. 38(1)(b).

40 J. Touscoz, above note 34, p. 13. Our translation: "Effectiveness, that is, the relationship between a legal title and social reality – a relationship that is both close and enduring – constitutes a determining factor in the formation of rules of international law."

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a matter of principle, analogies form part of the *lex lata* only if they are embedded in a formal source of international law recognized under Article 38 of the Statute of the International Court of Justice (ICJ), since analogy itself is not a source of law.[41] Nonetheless, the reader should not be misled: in the practice of international law – including IHL – where no centralized legislator exists, the boundary between interpretation and norm creation, as well as between *lex lata* and *lex ferenda*, is often blurred.[42] In reality, the distinction is not always as clear-cut as theory might suggest, and experts may reasonably disagree on certain questions (as illustrated by Example 5 below).

The following subsections thus explore the previously mentioned examples of the dual function of analogies in IHL's ongoing development. It should be noted that these subsections do not aim to define the legal regime applicable to each warfare situation, nor do they exhaustively address all debates associated with them. Rather, their purpose is merely to highlight the central role of analogical reasoning in shaping contemporary IHL discourses.

Example 1: Lethal autonomous weapons systems

For over a decade, LAWS have continuously raised a wide range of issues – political, ethical and legal. Among the many legal challenges involved, it remains unsettled how LAWS should be defined[43] and how IHL can be concretely applied to LAWS. While addressing the definitional challenge lies beyond the scope of this article, the second issue is of great relevance here. In the absence of a specific IHL treaty governing LAWS, and despite some support for the adoption of new (complementary) rules,[44] many ongoing discussions concern the application of the existing IHL framework to LAWS and rely heavily on the interpretive function of analogical reasoning, with the preferred form of analogy thus being a similarity of terms. The (potential) presence of LAWS on the battlefield is often compared to existing

41 For a list of formal sources of international law, see ICJ Statute, above note 39, Art. 38(1). On the same idea about analogy, see e.g. Maria José Falcon y Tella, "Quelques remarques à propos de l'analogie en droit", *Revue Interdisciplinaire d'Études Juridiques*, Vol. 41, No. 2, 1998, pp. 73–75; Manuel Atienza, "L'analogie en droit", *Revue Interdisciplinaire d'Études Juridiques*, Vol. 21, No. 2, 1988, p. 52. On the importance of distinguishing between analogies which are part of the *lex lata* and those which are part of the *lex ferenda*, see also Kevin Jon Heller, "The Use and Abuse of Analogy in IHL", in Jens David Ohlin (ed.), *Theoretical Boundaries of Armed Conflict and Human Rights*, Cambridge University Press, Cambridge, 2016, pp. 279, 284; Charles Pendleton Trumbull IV, "Analogies in Detentions: Distorting the Balance between Military Necessity and Humanity", *Virginia Journal of International Law*, Vol. 58, No. 1, 2018, p. 147.

42 See e.g. M. Sassòli, above note 31, p. 2058. On the absence of an international centralized legislator, see also Fernando Lusa Bordin, "Analogy", in Jean d'Aspremont and Sahib Singh (eds), *Concepts for International Law: Contributions to Disciplinary Thought*, Edward Elgar, Cheltenham and Northampton, 2019, p. 24.

43 For the International Committee of the Red Cross's (ICRC) definition of LAWS, see ICRC, "ICRC Position on Autonomous Weapon Systems", 12 May 2021, p. 1, available at: www.icrc.org/en/document/icrc-position-autonomous-weapon-systems; ICRC, *Submission on Autonomous Weapon Systems to the United Nations Secretary-General*, 19 March 2024, p. 4, available at: www.icrc.org/en/document/autonomous-weapons-icrc-submits-recommendations-un-secretary-general.

44 See e.g. ICRC, *Autonomous Weapon Systems and International Humanitarian Law: Selected Issues*, position paper, October 2025, pp. 21–22, available at: www.icrc.org/sites/default/files/media_file/2025-10/ICRC-Position_Paper-Autonomous_Weapon_Systems_and_IHL-Selected_issues_Oct2025.pdf.

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warfare scenarios which are already governed by IHL rules. When the (potential) deployment of LAWS is considered sufficiently similar to one of these scenarios, the scope of application of the relevant IHL rules is extended to include LAWS, even though such weapons systems were not contemplated at the time those rules were adopted.

In the available scholarly works, two main sources of analogy are identified for the application of IHL to LAWS (target): the first source of comparison is a traditional weapon, while the second is a human fighting in an armed conflict (whether a combatant in an IAC, a member of an organized armed group in a NIAC or a civilian directly participating in hostilities in either an IAC or a NIAC). On the one hand, scholars use terms which describe LAWS as lifeless objects employed by persons – "artefacts", "pieces of equipment constructed and utilized by people"[45] or "tool[s] in the user's hands"[46] – thereby comparing them to traditional weapons. On the other hand, authors also underline that LAWS can independently select and engage targets, hence performing tasks that are typically performed by humans. LAWS are thus compared to humans, who are the known benchmark on the battlefield, leading one scholar to underscore that LAWS are sometimes considered to function as "replacements for humans … rather than as tools used by humans".[47] As Rebecca Crootof aptly demonstrates, two primary analogies thus dominate the academic debate on IHL rules applicable to LAWS: the "weapon analogy" (comparison with existing weaponry) and the "combatant analogy" (comparison with humans fighting in an armed conflict).[48] The word "combatant" does not carry any technical legal meaning here, but merely the ordinary and broad meaning of "a person who fights in a war".[49]

These two main analogies often appear as alternatives, although some scholars have considered the possibility of combining them[50] and certain writings appear to address both simultaneously.[51] However, it is clear that the academic

45 Tim McFarland, *Autonomous Weapon Systems and the Law of Armed Conflict: Compatibility with International Humanitarian Law*, Cambridge University Press, Cambridge, 2020, p. 77.

46 Diego Mauri, *Autonomous Weapons Systems and the Protection of the Human Person: An International Law Analysis*, Edward Elgar, Cheltenham and Northampton, 2022, p. 124.

47 T. McFarland, above note 45, p. 68.

48 Rebecca Crootof, "Autonomous Weapon Systems and the Limits of Analogy", *Harvard National Security Journal*, Vol. 9, 2018, pp. 62 ff.

49 "Combatant", *Cambridge Dictionary*, available at: https://dictionary.cambridge.org/dictionary/english/combatant.

50 See e.g. T. McFarland, above note 45, pp. 69, 77. See also Maria Gevorgyan, "Crossing Boundaries: Autonomous Weapon Systems and the Challenge of IHL Compliance", *International Journal of Law, Ethics, and Technology*, 2023, p. 27, available at: https://ijlet.org/a332/.

51 See e.g. Michael Press, "Of Robots and Rules: Autonomous Weapon Systems in the Law of Armed Conflict", *Georgetown Journal of International Law*, Vol. 48, No. 4, 2017, pp. 1339, 1357. Press first seems to validate the "weapon analogy" as he indicates that "a legal review … should be undertaken *for all weapons* … [and] the legal review involving certain IHL/LOAC [law of armed conflict] principles and concepts will be applied to [L]AWS" (emphasis added). Nonetheless, regarding targeting law, he also notes that, under the principle of distinction, "*[L]AWS must have the capability* to distinguish between civilians and combatants, the same as any weapon system" (emphasis added). This last affirmation brings the discussion back (perhaps unintentionally) to the "combatant analogy"; indeed, when it comes to targeting in the context

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literature generally finds the "weapon analogy" more persuasive,[52] while the "combatant analogy" is described as "weak",[53] "misleading"[54] or "untenable and irrational".[55] According to the "weapon analogy", LAWS constitute a new (descriptive) category of weapons over which human users (must) retain a degree of control in order to ensure compliance with IHL and accountability for their use.[56] As with any (new) weapon, they are already regulated under the existing IHL framework; this is consistent with the assertion of the ICJ, according to which IHL principles "appl[y] to all forms of warfare and to all kinds of weapons, those of the past, those of the present and *those of the future*".[57] Nonetheless, even when this "weapon analogy" is preferred in scholarly writings, the tension with the "combatant analogy" sometimes remains discernible. For instance, Jonathan Kwik seems to favour the "weapon analogy"[58]

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of hostilities, the capability to distinguish between combatants and civilians is usually not an intrinsic feature of a weapon but is exercised by a combatant whenever he uses that weapon (i.e., the weapon user). On this last point, see also *ibid.*, p. 1358: "[I]f it would be reasonable for a human, under certain circumstances, to fire on a target that turns out not to be valid, neither the *human*, nor *[a] [L]AWS* under similar circumstances, would *be found to violate LOAC*" (emphasis added).

52 See e.g. T. McFarland, above note 45, pp. 77–78. The preference for the "weapon analogy" can be less explicit in scholarly writings. Some authors do not express their analogical reasoning but classify LAWS as weapons; it is not excluded that their classification of LAWS as weapons relies on some form of analogical thinking with other weapons, although no certain conclusion can be reached on this point. See D. Mauri, above note 46, p. 121: "IHL provisions establish duties that states must abide by *irrespective of the weapon employed*. Those sets of rules apply fully to [L]AWS" (emphasis added); Kenneth Anderson, Daniel Reisner and Matthew Waxman, "Adapting the Law of Armed Conflict to Autonomous Weapon Systems", *International Law Studies*, Vol. 90, 2014, p. 406: "In sum there is no reason, in principle, why a highly automated or autonomous system could not satisfy the requirements of targeting law. *Like any otherwise lawful weapon*, it depends on the use and environment" (emphasis added); Vincent Boulanin, Laura Bruun and Netta Goussac, *Autonomous Weapon Systems and International Humanitarian Law: Identifying Limits and the Required Type of Degree of Human-Machine Interaction*, Stockholm International Peace Research Institute, June 2021, p. 5: "Under IHL, any new *weapon*, means or method of warfare, *including [L]AWS*, would be deemed inherently unlawful if …" (emphasis added); Neil Davidson, *A Legal Perspective: Autonomous Weapon Systems under International Humanitarian Law*, UNODA Occasional Paper No. 30, United Nations Office for Disarmament Affairs, 2017, p. 9: "*As with all weapons*, assessing the lawfulness of an *autonomous weapon system* will depend on its specific characteristics and whether, given those characteristics, it can be employed in conformity with the rules of IHL in all circumstances in which it is intended and expected to be used" (emphasis added). See *contra* e.g. Elliot Winter, "The Compatibility of Autonomous Weapons with the Principles of International Humanitarian Law", *Journal of Conflict and Security Law*, Vol. 27, No. 1, 2022. In this article, Winter seems to favour the "combatant analogy" as he analyzes whether LAWS themselves can comply with the principles of the conduct of hostilities.

53 Ali Masoudi Lamraski, "Preliminary Remarks on Lethal Autonomous Weapon Systems from an IHL Perspective", *Asia Pacific Journal of International Humanitarian Law*, Vol. 2, 2021, p. 13.

54 D. Mauri, above note 46, p. 141.

55 M. Gevorgyan, above note 50, p. 29.

56 For an emphasis on the importance of human control or involvement, see e.g. Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems, *Working Paper on the "Human Element"*, UN Doc. CCW/GGE.1/2025/WP.42025, 21 August 2025.

57 ICJ, *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, *ICJ Reports 1996*, p. 226, para. 86 (emphasis added).

58 Jonathan Kwik, *Lawfully Using Autonomous Weapon Technologies*, T. M. C. Asser Press, The Hague, 2024. For one specific example among others, see *ibid.*, p. 227, where the author explains that a chapter of his monograph offers "an analysis of how *[L]AWS-users* should apply" IHL targeting rules (emphasis added). The emphasis on the use of LAWS is a sign that they are compared to traditional weapons.

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but comes to compare LAWS to subordinates – i.e., humans – in the application of the proportionality principle.[59] It is worth noting that, beyond these two primary analogies of weapon and combatant, other legal analogies have been mentioned in the relevant IHL literature, such as analogies with animals, child soldiers or methods of warfare.[60]

The importance of analogical reasoning in the IHL discourse on LAWS is therefore not a rhetorical flourish but is evidenced by its frequent and occasionally explicit use in academic writings. Several authors expressly acknowledge their analogical method,[61] while others refer to it more implicitly through terminology characteristic of analogical thinking and its cognitive steps, such as "translation",[62] "extension",[63] "adapt(ation)",[64] "different",[65] "mapping",[66] "comparable"/"similar"[67] and "comparison".[68]

59 *Ibid.*, p. 267.

60 Beyond the weapon and combatant analogies, see R. Crootof, above note 48, pp. 73 ff.; M. Gevorgyan, above note 50, p. 29.

61 See e.g. T. McFarland, above note 45, p. 71: "The extent to which the legal concept of a weapon or weapon system can encompass traditionally human tasks associated with target selection (those corresponding to legal obligations borne by combatants) is almost entirely unexplored and is absent from existing definitions. It is therefore necessary to look beyond definitions and *attempt to draw analogies* between existing IHL concepts and the types of autonomous technologies under investigation. … *Analogical reasoning is a common approach* to dealing with new legal situations, including regulation of new technologies, and it *can be applied to regulation of [L]AWS*" (emphasis added); M. Gevorgyan, above note 50, p. 24.

62 See e.g. Michael N. Schmitt and Jeffrey Thurnher, "'Out of the Loop': Autonomous Weapon Systems and the Law of Armed Conflict", *Harvard National Security Journal*, Vol. 4, No. 2, 2012–13, p. 263: "The fact that the doubt threshold is framed in terms of human reasonableness complicates *translation* into the autonomy context" (emphasis added).

63 See e.g. Peter Asaro, "On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making", *International Review of the Red Cross*, Vol. 94, No. 886, 2012, p. 693: "We are at a juncture at which we must decide how we, as an international community, will treat these systems. Will we treat them as *new extensions* of old technologies, or as a qualitative shift to a new kind of technology?" (emphasis added).

64 See e.g. K. Anderson, D. Reisner and M. Waxman, above note 52, p. 387.

65 See e.g. Alan Schuller, "At the Crossroads of Control: The Intersection of Artificial Intelligence in Autonomous Weapon Systems with International Humanitarian Law", *Harvard National Security Journal*, Vol. 8, 2017, p. 380 (abstract): "Advances in AI will likely produce [L]AWS that are different *in kind* from existing weapon systems and thus require a fresh approach to evaluating IHL compliance" (emphasis added).

66 See e.g. Lena Trabucco and Kevin Jon Heller, "Beyond the Ban: Comparing the Ability of Autonomous Weapon Systems and Human Soldiers to Comply with IHL", *Fletcher Forum of World Affairs*, Vol. 46, No. 2, 2022, p. 20: "Such research would involve six steps for each relevant principle of IHL: … *Mapping*, based on the result of steps two through five, the situations in which [L]AWS can be expected to comply with the principle better than human soldiers – and vice-versa" (emphasis added).

67 See e.g. M. Press, above note 51, p. 1353: "[L]AWS are *comparable to* other weapon systems in that limitations should be adopted to constrain their use to ensure they are used in conformance with international laws and customs" (emphasis added).

68 See e.g. L. Trabucco and K. J. Heller, above note 66, p. 27: "For all their differences, techno-pessimists and techno-optimists agree that *the relevant comparison is* between [L]AWS and human soldiers. Yet … *systematic comparison* of [L]AWS and human soldiers is completely absent" (emphasis added).

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Admittedly, outside scholarship, there is no explicit evidence that any analogical reasoning has been used in practice in the discourse on LAWS, particularly by States – through the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons System (GGE) – and by the International Committee of the Red Cross (ICRC). Available documentation from the GGE or the ICRC generally does not disclose any clear analogical reasoning. The only certain conclusion from numerous official documents adopted over the years by the GGE and ICRC is that both conceive of LAWS as "weapons" or "weapon systems" and, thus, as "means of warfare". However, these official documents do not really express the reasoning method for classifying LAWS as weapons. For instance, the GGE developed a series of guiding principles about LAWS, the first of which states: "International humanitarian law continues to apply fully *to all weapons systems, including* the potential development and use of lethal autonomous weapons systems."[69] This principle was approved by all States party to the Convention on Certain Conventional Weapons in 2019.[70] In its 2025 position paper, the ICRC affirms that "[L]AWS can be considered as *constituting 'weapons'* for the purposes of IHL".[71] This being said, although no definitive conclusion can be reached, the available evidence suggests that analogical reasoning may not be wholly foreign to the reasoning process of the ICRC, as exemplified in its 2024 report on *International Humanitarian Law and the Challenges of Contemporary Armed Conflicts*:

> It is an exercise in *false equivalence to compare* a human decision to launch an attack with a machine process that triggers the application of force. *A more accurate comparison* would be between a human launching an attack using a weapon system that is not autonomous and a human launching an attack using [a] [L]AWS.[72]

Example 2: Cyber operations

Beginning at the end of the 1990s and more clearly emerging in the early 2000s, cyber operations have become a growing concern for IHL experts and stakeholders. Even though no known armed conflict has so far been conducted exclusively through cyber means, it is widely anticipated that belligerents will increasingly rely on cyber

69 *Report of the 2019 Session of the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems*, UN Doc. CCW/GGE.1/2019/3, 25 September 2019, Annex IV, "Guiding Principles", p. 13, Principle (a) (emphasis added).

70 *Meeting of the High Contracting Parties to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects: Final Report*, UN Doc. CCW/MSP/2019/9, 13 December 2019, p. 5, para. 31.

71 ICRC, above note 44, p. 6, with fn. 23 (emphasis added).

72 ICRC, *International Humanitarian Law and the Challenges of Contemporary Armed Conflicts*, Geneva, 2024 (ICRC Challenges Report 2024), p. 61 (emphasis added), available at: www.icrc.org/en/report/2024-icrc-report-ihl-challenges.

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capabilities not only for intelligence, surveillance and reconnaissance operations, but also to disrupt, degrade, disable or damage adversary systems.[73] The ongoing armed conflict between Russia and Ukraine does not support a different conclusion: "the number of (cyber)attacks, the perpetrators, and the use of cyber against critical infrastructure" in this conflict were already being described as "cause for alarm" in September 2023.[74] Nevertheless, cyber operations remain a battlefield reality that is not specifically governed by IHL, and as a result, analogical reasoning has been explicitly identified as a key interpretive technique for applying existing legal norms to this new domain of warfare.[75] Indeed, in this very same forum, Paul Stephan has indicated that, "[a]s to cyber-operations, very little international law exists except by way of analogy".[76] Again, as with LAWS, analogies are here understood as similarities of terms: IHL experts and stakeholders draw parallels between cyber operations and classical wartime operations, and then apply to the former the same legal rules that have traditionally governed the latter.

Even in the absence of direct references to analogical reasoning, the vocabulary employed by IHL scholars is revealing – just as it was in the context of LAWS. Terms such as "adaptation", "translation" or "reinterpretation" – which correspond to the third step of analogical reasoning (transfer) – are frequently found throughout the relevant literature.[77] Moreover, IHL experts often compare the evolution

73 On the use of cyber capabilities, see e.g. Terry D. Gill, Jelle van Haaster and Mark Roorda, "Some Legal and Operational Considerations Regarding Remote Warfare: Drones and Cyber Warfare Revisited", in Jens David Ohlin (ed.), *Research Handbook on Remote Warfare*, Edward Elgar, Cheltenham and Northampton, 2017, pp. 307, 321; ICRC, *International Humanitarian Law and Cyber Operations during Armed Conflicts*, position paper, November 2009, p. 3, available at: www.icrc.org/sites/default/files/document/file_list/icrc_ihl-and-cyber-operations-during-armed-conflicts.pdf.

74 Stéphane Duguin and Pavlina Pavlova, *The Role of Cyber in the Russian War against Ukraine: Its Impact and the Consequences for the Future of Armed Conflict*, working paper, European Parliament Subcommittee on Security and Defence, September 2023, p. 6, available at: www.europarl.europa.eu/RegData/etudes/BRIE/2023/702594/EXPO_BRI(2023)702594_EN.pdf.

75 See e.g. T. D. Gill, J. van Haaster and M. Roorda, above note 73, p. 323: "[I]t seems to be widely accepted that international law not only applies, but is capable of being applied, *albeit with some adaptations and the liberal use of analogous interpretation*, to cyber activities across a wide spectrum, including cyber warfare" (emphasis added); Loïc Simonet, "L'usage de la force dans le cyberespace et le droit international", *Annuaire Français de Droit International*, Vol. 58, 2012, pp. 134, 138: "En définitive, s'il semble acquis que le cyberspace doive être confronté au droit des conflits, ses particularités … rendent difficile l'application de ses règles à des activités répréhensibles *qui n'en relèvent que par analogie*" (p. 138, emphasis added; our translation: "Ultimately, while it appears well established that cyberspace must be assessed through the lens of the law of armed conflict, its particular characteristics … make it challenging to apply its rules to wrongful activities *that fall within its scope only by analogy*"); Miodrag N. Simović, Živorad Rašević and Vladimir M. Simović, "Cyber Warfare and International Cyber Law: Whither?", *Journal of Criminology and Criminal Law*, Vol. 58, No. 3, 2020, pp. 33, 35: "Applicable international law can be applied *analogously* to this new area of communication" (p. 35, emphasis added); Jeffrey T. Biller and Michael N. Schmitt, "Classification of Cyber Capabilities and Operations as Weapons, Means, or Methods of Warfare", *International Law Studies*, Vol. 95, 2019, p. 181: "The international legal community struggled, rather unsuccessfully, to maintain pace with both doctrinal development and technological advances. To lighten their load, most international lawyers attempted to normalize their work, *primarily through reasoning by analogy*" (emphasis added).

76 Paul B. Stephan, "The Crisis in International Law and the Path Forward for International Humanitarian Law", *International Review of the Red Cross*, Vol. 104, No. 920–921, 2022, p. 2083.

77 See e.g. Heather Harrison Dinniss, *Cyber Warfare and the Laws of War*, Cambridge University Press, Cambridge, 2012, pp. 139, 145, 178, 246, 278–279; Kubo Mačák, "This is Cyber: 1+ 3 Challenges for the Application of IHL in Cyberspace", *Exeter Law Review*, Vol. 45, 2020, p. 70.

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and adaptation of IHL for cyber operations with its historical development in other domains, such as maritime or aerial warfare.[78] These comparisons also bring out the importance of analogical reasoning – albeit perhaps unintentionally – because, as this author has already demonstrated in this forum, analogies played a central role in shaping IHL in those domains.[79]

The most encountered analogy in IHL literature on cyber operations links these operations to kinetic ones in the context of the conduct of hostilities (the analogy may apply to cyber operations as such, but also to cyber attacks or cyber weapons). By identifying similarities and differences between these types of operations, IHL scholars and stakeholders seek to determine how IHL should adapt in order to effectively regulate cyber activities. Whether embraced or contested, this analogy is prevalent in academic discourse[80] and in the writings of the ICRC.[81] For instance, in its updated Commentary on Geneva Convention IV (GC IV) protecting civilians (released in November 2025), the ICRC states:

> It is generally accepted by experts, and reflected in the positions of a growing number of States, that cyber operations having *similar effects to traditional kinetic operations* would amount to an international armed conflict and would have to be conducted in accordance with the rules on the conduct of hostilities. Indeed, if these operations result in the destruction of civilian or military assets or cause the death or injury of soldiers or civilians, *there would be no reason to treat the situation differently from equivalent attacks conducted through more traditional means and methods of warfare*.[82]

As the ICRC underlines in its Commentary on GC IV, the importance of this analogy between cyber and kinetic operations is also reflected in State practice: numerous

78 See e.g. T. D. Gill, J. van Haaster and M. Roorda, above note 73, pp. 330–331; Christian H. Robertson II, "Different Problems Require Different Solutions: How Air Warfare Norms Should Inform IHL Targeting Law Reform and Cyber Warfare", *University of Michigan Journal of Law Reform*, Vol. 52, No. 4, 2019, pp. 987, 991, 993, 999, 1008; H. H. Dinniss, above note 77, p. 246; Christopher E. Bailey, "Cyber Civilians as Combatants", *Creighton International and Comparative Law Journal*, Vol. 8, No. 1, 2016, p. 22; Michael N. Schmitt, "Rewired Warfare: Rethinking the Law of Cyber Attack", *International Review of the Red Cross*, Vol. 96, No. 893, 2014, pp. 203–205.

79 P. Lesaffre, above note 21, pp. 1181–1189.

80 See e.g. K. Mačák, above note 77, p. 78, where the author quickly underlines the limit of this analogy; Gary D. Solis, "Cyber Warfare", *Military Law Review*, Vol. 219, Spring 2014, p. 12; Lesley Swanson, "The Era of Cyber Warfare: Applying International Humanitarian Law to the 2008 Russian-Georgian Cyber Conflict", *Loyola of Los Angeles International and Comparative Law Review*, Vol. 32, No. 2, 2010, p. 316, where the author analogizes cyber weapons with traditional weapons: "[C]yber weapons, just like nuclear weapons, are weapons that result in consequences similar to that of traditional weapons. Accordingly, IHL principles, such as the concept of unnecessary suffering and proportionality, still have relevance in the case of a cyber attack."

81 See e.g. ICRC Challenges Report 2024, above note 72, p. 58.

82 ICRC, *Commentary on the Fourth Geneva Convention: Convention (IV) relative to the Protection of Civilian Persons in Time of War*, 2nd ed., Geneva, 2025 (ICRC Commentary on GC IV), para. 325 (emphasis added), available at: https://ihl-databases.icrc.org/en/ihl-treaties/gciv-1949.

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States, including the United Kingdom,[83] Austria,[84] Denmark,[85] Ireland[86] and New Zealand,[87] refer to this analogy in their official position papers on the application of international law to cyber operations.

In addition to this general analogy which provides a broad guideline concerning the application of IHL to cyber operations, more detailed analogies appear in the academic literature and in State practice in relation to specific IHL provisions. These analogies revolve around the same idea of comparing cyber to kinetic or other traditional warfare situations, and they also exemplify the interpretive function of analogical reasoning. For example, Jeffrey Biller briefly examines for the purposes of Article 16 of Geneva Convention II whether crew members of a ship should be considered to be captured by, and thus "fallen into the hands of", the cyber operator exercising control over the ship.[88] To support his analysis, he draws a parallel between a helicopter controlling enemy troops on the ground (with no help from accompanying ground forces) and such a cyber operator exercising control over an enemy ship.[89] Questioning the relevance of the IHL rule against perfidy in the cyber context,[90] Christopher Bailey affirms that "a range of novel ruses" in cyberspace "can be analogized to acceptable past practices" of ruse in traditional conflict settings.[91] As previously introduced,[92] the two Tallinn Manuals offer several illustrations of IHL analogies, and one of these also relates to the rule against perfidy. Noting that "simply failing to identify oneself as a combatant is not perfidy", the two Manuals then compare the situation of a "cyber attack in which the originator is concealed" with the more traditional situation of a "sniper attack in which the location of the attacker

83 "Application of International Law to States' Conduct in Cyberspace", UK statement to the United Nations Group of Governmental Experts on Advancing Responsible State Behaviour in Cyberspace in the Context of International Security, 3 June 2021, paras 22, 24, available at: www.gov.uk/government/publications/application-of-international-law-to-states-conduct-in-cyberspace-uk-statement.

84 Republic of Austria, *Position Paper: Cyber Activities and International Law*, April 2024, pp. 16–17, available at: https://docs-library.unoda.org/Open-Ended_Working_Group_on_Information_and_Communication_Technologies_-_(2021)/Austrian_Position_Paper_-_Cyber_Activities_and_International_Law_(Final_23.04.2024).pdf.

85 Jeppe Mejer Kjelgaard and Ulf Melgaard, "Denmark's Position Paper on the Application of International Law in Cyberspace", *Nordic Journal of International Law*, Vol. 92, No. 2, 2023, p. 455.

86 Irish Department of Foreign Affairs, *Position Paper on the Application of International Law in Cyberspace*, July 2023, para. 30, available at: https://assets.gov.ie/static/documents/ireland-position-paper-on-the-application-of-international-law-in-cyberspace.pdf.

87 New Zealand Ministry of Foreign Affairs and Trade, *The Application of International Law to State Activity in Cyberspace*, 1 December 2020, para. 25, available at: www.dpmc.govt.nz/publications/application-international-law-state-activity-cyberspace.

88 Geneva Convention (II) for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea, 75 UNTS 85, 12 August 1949 (entered into force 21 October 1950), Art. 16.

89 Jeffrey Biller, "Cyber Operations and the Second Geneva Convention", *International Review of the Red Cross*, Vol. 100, No. 907–909, 2018, p. 174.

90 Protocol Additional (I) to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts, 1125 UNTS 3, 8 June 1977 (entered into force 7 December 1978) (AP I), Arts 37, 39.

91 C. E. Bailey, above note 78, p. 21.

92 See the subsection above on "An Interpretive Function for IHL Analogies".

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or identity of the sniper may never be known".[93] As to State practice, accepting that a cyber operation can constitute an attack under Article 49 of Additional Protocol I to the Geneva Conventions,[94] the French *Manuel de droit des opérations militaires* declares that

> l'altération des capacités de propagande de l'adversaire, notamment, le fait de rendre indisponible un site d'influence sur les réseaux sociaux par saturation ou déni de service distribué, ne saurait être caractérisée comme une attaque, par analogie avec le brouillage des communications radio ou d'émissions de télévision.[95]

While the interpretive function of IHL analogies is prevailing in the literature and practice related to this domain of warfare, some scholarly works also illuminate their creative function. For instance, Alexi Franklin scrutinizes existing weapon treaties to identify the best model for a new cyber treaty.[96] Thinking about possible protective measures against the potentially devastating civilian impacts of cyber operations, Michael Schmitt mentions that

> special protection for cyber infrastructure and functions *could be crafted analogously* to that presently existing for objects indispensable to the civilian population or for civil defence activities. Doing so would likely require *adoption of new treaty law* in the form of, for example, a further additional protocol to the Geneva Conventions.[97]

In the same vein, Robin Geiss and Henning Lahmann write that

> *a* de lege ferenda *approach* could be applied to … cyber installations [that are] *similar to* the objects currently listed in Article 56 of Additional Protocol I – the neutralisation or destruction of which would typically result in significant civilian impact that would outweigh the military benefits.[98]

Example 3: Outer space warfare

In the London Declaration of December 2019, the North Atlantic Treaty Organization (NATO) formally recognized outer space as a fifth operational domain,

93 Tallinn Manual 1.0., above note 37, p. 151, paras 12–13; Tallinn Manual 2.0., above note 37, p. 494, paras 12–13.

94 AP I, Art. 49(1).

95 French Armed Forces Ministry, *Manuel de droit des opérations militaires*, 2022 (French Manual), pp. 308–309 (emphasis added), available at: www.defense.gouv.fr/actualites/droit-operations-militaires-manuel-inedit-au-service-armees-francaises. Our translation: "[A]ltering the adversary's propaganda capabilities, in particular by making an influential social media site unavailable through saturation or denial of distributed service, cannot be characterized as an attack, *by analogy with* the jamming of radio communications or television broadcasts".

96 Alexi Franklin, "An International Cyber Warfare Treaty: Historical Analogies and Future Prospects", *Journal of Law and Cyber Warfare*, Vol. 7, No. 1, 2018, pp. 151–159.

97 M. N. Schmitt, above note 78, p. 205 (emphasis added).

98 Robin Geiss and Henning Lahmann, "Cyber Warfare: Applying the Principle of Distinction in an Interconnected Space", *Israel Law Review*, Vol. 45, No. 3, 2012, p. 391 (emphasis added).

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after land, sea, air and cyber.[99] This new domain of warfare has attracted more attention over the years and has become a focal point in recent IHL discussions. Following the same pattern as for the emergence of cyberspace as a domain of warfare, outer space similarly challenges IHL's existing legal framework. While the outer space domain also raises questions about the interaction between IHL and other international legal regimes (particularly international space law),[100] this article focuses exclusively on IHL-related issues.

IHL scholarship primarily addresses two key questions: first, the applicability of IHL to outer space (i.e., whether IHL applies to outer space military operations), and second, the application of the principles of the conduct of hostilities – namely distinction, proportionality and precaution – in the context of space warfare (i.e., how IHL applies to outer space conduct of hostilities). Through its interpretive function, analogical reasoning brings valuable insights into both questions and contributes to a better understanding of how IHL regulates outer space warfare. As with LAWS and cyber operations, IHL scholars tend to conceive of analogies as similarities of terms; they therefore employ analogical reasoning to extend the scope of application of existing IHL rules to military operations conducted in outer space, even though such operations would have been inconceivable at the time those rules were adopted. In this regard, it is enlightening to read in the introduction of the *Woomera Manual on the International Law of Military Space Activities and Operations* – although the chosen wording remains quite cautious – that it

> focuses on those obligations of the law of armed conflict that may apply to space by way of direct treaty application, or otherwise through corresponding obligations contained within customary international law. Additionally, *in determining this application, a limited use of the mechanism of analogy* was applied to determine whether some particular rules of the law of armed conflict could apply to armed conflict in space.[101]

More specifically, academic contributions relating to this fifth domain of warfare allow for four main observations. First, on a purely anecdotal note, the first type of analogies found in IHL scholarship are often descriptive or metaphorical rather than legal in nature: indeed, many essays begin by comparing potential real-world warfare

99 London Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council, 3–4 December 2019, para. 6, available at: www.nato.int/cps/en/natohq/official_texts_171584.htm.

100 See e.g. Dale Stephens, "The International Legal Implications of Military Space Operations: Examining the Interplay between International Humanitarian Law and the Outer Space Legal Regime", *International Law Studies*, Vol. 94, 2018; Steven van de Put and Anne-Rixt E. Siemensma, "A Giant Leap for Humankind: Bridging Space Law and International Humanitarian Law", *Military Law and the Law of War Review*, Vol. 62, No. 1, 2024; Frans G. von der Dunk, "Armed Conflicts in Outer Space: Which Law Applies?", *International Law Studies*, Vol. 97, 2021.

101 Jack Beard, Dale Stephens and David Koplow (eds), *The Woomera Manual on the International Law of Military Space Activities and Operations*, Oxford University Press, Oxford, 2024, p. 15, para. 18 (emphasis added).

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scenarios in outer space to space fantasy narratives such as *Star Wars*.[102] Second, even though the language of analogy appears less prevalent in the academic literature on space warfare compared to previously examined topics, emphasis is frequently placed on IHL adaptability[103] – a quality to which analogical reasoning significantly contributes[104] – or on IHL translation for the space domain – which refers to the third cognitive step of analogical reasoning that is transfer.[105]

Third, space warfare is often analogized at a very broad level with other domains of warfare, particularly cyber warfare, but also land, maritime or aerial warfare.[106] A significant number of authors refer either to cyber warfare scenarios or to State and expert discussions on cyber operations – especially the Tallinn Manuals – to support their views on space warfare.[107] Others draw connections between the

102 See e.g. Svenja Berrang, "How Would IHL Apply to Hostilities in Outer Space?", *Humanitarian Law and Policy Blog*, 2 November 2023, available at: https://blogs.icrc.org/law-and-policy/2023/11/02/how-would-ihl-apply-to-hostilities-in-outer-space/; Juan Felipe Idrovo Romo, "Armed Conflicts in Outer Space: Applicability and Challenges of International Humanitarian Law", *Universidad San Francisco de Quito Law Review*, Vol. 7, No. 1, 2020, p. 337; Abdul Rehman Khan, "Space Wars: Dual-Use Satellites", *Rutgers Journal of Law and Public Policy*, Vol. 14, No. 3, 2017, p. 315 fn. 2; Haldor Mercado, "'Using the Force' against 'Rebel Scum': The Application of International Humanitarian Law in Outer Space against Non-State Actors", *Harvard National Security Journal*, Online Edition, 2025, p. 2, available at: https://journals.law.harvard.edu/nsj/2025/03/using-the-force-against-rebel-scum-the-application-of-international-humanitarian-law-in-outer-space-against-non-state-actors/; F. G. von der Dunk, above note 100, pp. 189–190.

103 See e.g. Christian Jorgensen, "'Old' Law for a 'New' Frontier: The Sufficiency of International Humanitarian Law in Outer Space", *Case Western Reserve Journal of International Law*, Vol. 57, No. 1, 2025, pp. 345, 364, 376; Stuart A. Pettis, "Space Warfare: Do We Need Additional Treaties?", *Case Western Journal of International Law*, Vol. 57, No. 1, 2025, p. 407: "Perhaps the greatest attribute of the principles of International Humanitarian Law and the Law of Armed Conflict is *their adaptability to new domains* and weapons" (emphasis added); Wenjun Yan and Haoyu Cui, "Application of the Principle of Distinction under IHL in Outer Space", *International Law Research*, Vol. 12, No. 1, 2023, p. 89.

104 See e.g. P. Lesaffre, above note 21, pp. 1214–1215 on "Analogies as a Tool for Flexibility".

105 See e.g. Dale Stephens and Cassandra Steer, "Conflicts in Space: International Humanitarian Law and Its Application to Space Warfare", *McGill Annals of Air and Space Law*, Vol. 40, 2015, p. 102.

106 For a similar observation, see e.g. A. R. Khan, above note 102, p. 327: "The law of war in space … is *frequently analogized to the laws of war on land, sea, and air.* In other words, the law of war is just as pertinent to space as it is to other environments by which to engage warfare. … The overlapping principles that apply to land, sea, and air, so too will apply to the law of space, accommodated of course *to the distinct features* that make outer space unique" (emphasis added).

107 See e.g. Svenja Berrang, "Does the Dual-Use of Space Objects Necessitate a New Geneva Convention?", *Case Western Reserve Journal of International Law*, Vol. 57, No. 1, 2025, p. 324: "There is no need to deviate from this position in the space context since the circumstances in the space and cyber domain *are comparable*" (emphasis added); Michael N. Schmitt and Kieran Tinkler, "War in Space: How International Humanitarian Law Might Apply", *Just Security*, 9 March 2020, available at: www.justsecurity.org/68906/war-in-space-how-international-humanitarian-law-might-apply/; G. Blair Kuplic and Jonathan Sawmiller, "Humanity on the Final Frontier: Challenges in Applying International Humanitarian Law to Modern Military Space Operations", *International Review of the Red Cross*, Vol. 107, No. 926, 2025, p. 231; D. Stephens and C. Steer, above note 105, pp. 102–103; Kubo Mačak, "Silent War: Applicability of the Jus in Bello to Military Space Operations", *International Law Studies*, Vol. 94, 2018, p. 14: "In sum, the novelty of the online realm did not make it a domain free from international legal regulation. It is submitted that *the same approach* should apply, in principle to State conduct in outer space" (emphasis added). See also *ibid.*, p. 22: "*A useful analogy* is the 'law of cyber armed conflict', the body of law that applies to cyber operations executed in the context of armed conflict" (emphasis added); Wenjun Yan, "Definition of 'Armed Conflict' in Outer Space", *Bejing Law Review*, Vol. 14, No. 1, 2023, p. 297.

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necessary extension or adaptation of IHL for space warfare and previous developments in IHL through analogical reasoning, such as the evolution from land warfare to maritime warfare or aerial warfare.[108]

Fourth, IHL scholarly works contain numerous instances of specific analogies in the context of space warfare. These analogies establish parallels between outer space situations and traditional warfare situations. For example, Steven van de Put and Anne-Rixt Siemensma consider the issue of military astronauts and their need for broader protection, analogizing combatant astronauts with shipwrecked soldiers.[109] Kubo Mačak examines the start of IHL applicability to outer space military activities and compares the launch of an anti-satellite weapon with the firing of intercontinental ballistic missiles.[110] Abdul Rehman Khan is interested in the proportionality analysis and suggests an analogy between dual-use satellites (especially satellites with some military functions hidden behind many civilian purposes) and human shields.[111] Dale Stephens and Cassandra Steers use several analogies, such as between dual-use objects in space and those on land, sea or air for the purposes of the principle of distinction, and between downing an attacking aircraft and disrupting satellite links for GNSS/GPS-linked drones and munitions in relation to the proportionality principle.[112]

All these examples strongly suggest that analogies in their interpretive function are central to scholarly engagement with space warfare under IHL; however, it is worth recalling here that their interpretive function is not without prejudice to their creative function. Analogies also help design and shape new rules for space warfare. To take just one example, Idrovo Romo finds a useful analogical source in the IHL higher standard of imperative military necessity to protect cultural objects and concludes that, "[i]n case a new treaty is developed [for space warfare], the standard of imperative military necessity should be considered for any attack directed to space objects that are particularly vulnerable such as satellites".[113]

Beyond academic literature, States and the ICRC have not extensively elaborated on the underlying rationale for their positions regarding IHL applicability and application to outer space. As a result, their practice does not explicitly document the importance of analogical reasoning for IHL development in this domain.

Discussions within the Group of Governmental Experts on Further Practical Measures for the Prevention of an Arms Race in Outer Space, as well as within the newly established Open-Ended Working Group on the Prevention of an Arms Race in Outer Space in All Its Aspects, merely reveal a divide among States:

108 See e.g. C. Jorgensen, above note 105, p. 369 (maritime warfare); Jack Mawdsley, "Applying Core Principles of International Humanitarian Law to Military Operations in Space", *Journal of Conflict and Security Law*, Vol. 25, No. 2, 2020, p. 269 (air warfare).

109 See e.g. S. van de Put and A.-R. E. Siemensma, above note 100, p. 55.

110 See e.g. K. Mačak, above note 107, p. 33.

111 See e.g. A. R. Khan, above note 102, p. 334.

112 See e.g. D. Stephens and C. Steer, above note 105, pp. 90, 98.

113 See e.g. J. F. Idrovo Romo, above note 102, p. 348.

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some support IHL application in outer space, while others fear that such recognition could legitimize warfare in space.[114] No definitive conclusion about analogical reasoning can be deduced from these discussions. Similarly, State military manuals generally do not explicitly invoke analogies when addressing military operations in outer space during armed conflict[115] – except, perhaps, for the US *Law of War Manual*, which states that "the application of the law of war to activities in outer space is *the same as its application to activities in other environments*, such as the land, sea, air, or cyber domains".[116]

As for the ICRC's official documentation, it primarily focuses on protecting civilians from the harmful consequences of military operations in space.[117] The new ICRC Commentary on Article 2 of GC IV only notes in passing that "[i]nternational humanitarian law, as well as other bodies of international law, would also apply to an [international] armed conflict occurring in outer space".[118] More interestingly though, the new ICRC Commentary on Article 3 of GC IV seems to timidly draw an analogy between cross-border NIACs and NIACs in outer space for the purpose of IHL applicability, recognizing IHL applicability to outer space in a footnote to a paragraph addressing IHL applicability to cross-border NIACs.[119]

This being said, the absence of known explicit references to analogical reasoning in both State and ICRC practice does not appear to contradict the argument made in this article. Rather, it seems to reflect the limited availability of practice on the topic (particularly from States) and the practical orientation of some existing documents, which does not invite their authors to elaborate on their legal methodology and reasoning.

114 See e.g. *Report of the Group of Governmental Experts on Further Practical Measures for the Prevention of an Arms Race in Outer Space*, UN Doc. A/79/364, 20 September 2024, para. 23; *Joint Contribution of the European Union to the Work of the Open-Ended Working Group on PAROS in all Its Aspects, Existing International Legal and Other Normative Frameworks Concerning Threats Arising from State Behaviours with Respect to Outer Space*, UN Doc. A/AC.297/2025/WP.5, 23 July 2025, para. 2; *Working Paper Submitted by the Russian Federation: Existing International Legal Frameworks Regulating Outer Space Activities*, UN Doc. A/AC.297/2025/WP.2, 18 July 2025, paras 46–53.

115 See e.g. French Manual, above note 95, pp. 290–293. The subsection addressing military space operations during wartime does not evidence the use of analogical reasoning by the French armed forces when applying IHL to outer space.

116 US Department of Defense, *Law of War Manual*, June 2015 (updated July 2023), p. 955 (emphasis added), available at: https://media.defense.gov/2023/Jul/31/2003271432/-1/-1/0/DOD-LAW-OF-WAR-MANUAL-JUNE-2015-UPDATED-JULY%202023.PDF.

117 See e.g. ICRC, *Preliminary Recommendations on Possible Norms, Rules and Principles of Responsible Behaviours Relating to Threats by States to Space Systems*, working paper submitted to the Open-Ended Working Group on Reducing Space Threats through Norms, Rules and Principles of Responsible Behaviours, 27 January 2023, available at: www.icrc.org/en/document/preliminary-recommendations-on-reducing-space-threats; ICRC, "IHL Contributes to the Prevention of an Arms Race in Outer Space", statement delivered at the Open-Ended Intersessional Informal Consultative Meeting on Further Practical Measures for the Prevention of an Arms Race in Outer Space, 29 February 2024, available at: www.icrc.org/en/un-outer-space-ihl-statement.

118 ICRC Commentary on GC IV, above note 82, para. 280.

119 *Ibid.*, para. 544 fn. 212. The footnote begins "In this vein, …".

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Example 4: Non-international armed conflicts

In contrast to the three previous examples, NIACs do not, *eo ipso*, constitute a *recent* phenomenon requiring regulation by IHL. Moreover, the importance of analogical reasoning in the development of the law of NIAC is well established, almost to the point of being a truism. Many customary and conventional norms applicable to NIACs rely on analogies with the corresponding legal regime applicable to IACs;[120] as a result of this, as noted by Lizaveta Tarasevich in 2020, "[t]he norms governing NIACs have rarely developed specifically for … situations of internal conflicts – they rather *developed by analogy* to the rules regulating IACs *where such extension was possible*".[121]

Despite some progress, the law of NIAC is still widely regarded as the part of IHL that is most in need of further development. As some commentators indicate, it is the part of IHL which is, "at least as far as treaty rules are concerned, in the greatest need of new, more detailed and updated regulation",[122] or in other words, it is an "urgent issue" that "cr[ies] out for regulation".[123]

Clearly, several key differences persist between the laws of IAC and NIAC – the former being more detailed, particularly regarding the status of individuals (combatant and prisoner of war (PoW) status), internment regimes, situations of occupation and environmental protection.[124] These persistent differences have long constituted resistance poles to the analogue extension from the law of IAC to the law of NIAC. However, the remaining gaps in the law of NIAC have been the subject of sustained debate since the beginning of the century – especially in the context of the global fight against terrorism and the rise of so-called transnational or cross-border

120 For a similar observation, see e.g. Robin Geiss, "The Possibility and the Challenges Raised by the Importation in NIAC of the IAC Conduct of Hostility Rules", in Carl Marchand (ed.), *The Distinction between International and Non-International Armed Conflicts: Challenges for IHL?*, FrancoAngeli, Milan, 2016, p. 125; Ben McGuckin, *The Conflict between Armed Conflicts: Dispensing with the Distinction between International and Non-International Armed Conflicts*, DGSi Working Paper No. 1, Durham Global Security Institute, 2018, pp. 22, 26–27, available at: https://www.dur.ac.uk/media/durham-university/research-/research-institutes/durham-global-security-institute/pdfs/McGuckin2017TheConflictBetweenArmedConflicts-FinalforDGSI1.pdf; Sandesh Sivakumaran, "Re-envisaging the International Law of Internal Armed Conflict", *European Journal of International Law*, Vol. 22, No. 1, 2011, p. 220: "[T]he law of internal armed conflict has been modelled on, and assimilated to, the law of international armed conflict. The law of international armed conflict is considered the high watermark of legal regulation, the pinnacle to which the law of internal armed conflict should aspire." See also P. Lesaffre, above note 21, pp. 1192–1196.

121 Lizaveta Tarasevich, "Participation of Non-State Armed Groups in the Formation of Customary International Humanitarian Law", *Journal of International Law of Peace and Armed Conflict*, Vol. 3, No. 1–2, 2020, p. 108 (emphasis added).

122 M. Sassòli, above note 31, p. 2072.

123 P. B. Stephan, above note 76, p. 2079.

124 See also Marco Sassòli, "The Convergence of the International Humanitarian Law of Non-International and International Armed Conflicts – the Dark Side of a Good Idea", in Giovanni Biaggini, Christine Kaufmann and Oliver Diggelmann (eds), *Polis und Kosmopolis: Festschirft für Daniel Thürer*, Dikke, Zurich, and Nomos, Baden-Baden, 2015, p. 682; S. Sivakumaran, above note 120, p. 246; P. B. Stephan, above note 76, pp. 2082, 2084.

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armed conflicts, defined as armed conflicts opposing at least a State and an organized armed group, or two organized armed groups, and crossing at least one State border.[125] In such conflicts, States that operate extraterritorially cannot rely easily, or at all, on their own domestic law to fill the gaps in NIAC regulation. Thus, the limitations of the law of NIAC have become even more problematic. As Marco Sassòli underlines, "th[e] attraction for analogy really came up recently with the appearance of so-called transnational non-international armed conflicts".[126]

Indeed, contemporary IHL debates on the law of NIAC continue to draw explicit analogies with the law of IAC[127] – although they now also touch upon some major historical differences between the two kinds of conflicts.[128] Academic scholarship offers several examples. For instance, the law of NIAC is silent on the legal basis, admissible grounds and review procedures for internment. Scholars have examined the merits of analogizing NIAC internment practices with either PoW internment under Geneva Convention III (GC III) or civilian internment under GC IV.[129] Similarly, on targeting, the law of NIAC provides very limited guidance on the definition and identification of fighters within an organized armed group – i.e., members of the group who are always considered lawful targets under IHL. Consequently, IHL literature explores the possibility of transferring the "membership" or the "belonging" approaches from the law of IAC to the law of NIAC. The

125 The present author is of the opinion that transnational armed conflicts are to be classified solely as NIACs *in all circumstances*, even when the territorial State does not consent to the extraterritorial operations of the intervening States. In other words, this author considers that non-consented extraterritorial operations against an organized armed group do not trigger the existence of a parallel IAC between the intervening State and the territorial State which does not consent to the foreign intervention. For more explanations and references on this issue of classification, see Pauline Lesaffre, *Le droit international humanitaire à l'épreuve des conflits armés transfrontières*, Pedone, Paris, 2026 (forthcoming), paras 414 ff.

126 Marco Sassòli, "Can the Legal Framework Applicable to Internment in IAC be Replicated in NIAC?", in C. Marchand (ed.), above note 120, p. 156.

127 For a recent example on the prohibition of adverse distinction (discrimination), see George Dvaladze, "Non-Discrimination under International Humanitarian and Human Rights Law", in Robert Kolb, Gloria Gaggioli and Pavle Kilibarda (eds), *Research Handbook on Human Rights and Humanitarian Law*, Edward Elgar, Cheltenham, 2022, p. 431; George Dvaladze, *Equality and Non-Discrimination in Armed Conflict*, Edward Elgar, Cheltenham, 2023, pp. 71–73, 222.

128 On the use of analogies for these remaining differences, see also Marco Sassòli, *International Humanitarian Law: Rules, Controversies, and Solutions to Problems Arising in Warfare*, 2nd ed., Edward Elgar, Cheltenham, 2019, paras 7.62–7.65.

129 See e.g. C. P. Trumbull IV, above note 41, pp. 97 ff.; Ryan J. Vogel, "Beyond Geneva: Detainee Review Processes in Non-International Armed Conflict – a U.S. Perspective", *International Law Studies*, Vol. 95, 2019, pp. 97, 101–102, 104; M. Sassòli, above note 126, pp. 157–162; Marco Sassòli and Laura M. Olson, "The Relationship between International Humanitarian and Human Rights Law Where It Matters: Admissible Killing and Internment of Fighters in Non-International Armed Conflicts", *International Review of the Red Cross*, Vol. 90, No. 871, 2008, pp. 608–610, 623–627; Jelena Plamenac, *Unravelling Unlawful Confinement in Contemporary Armed Conflicts*, Brill, Leiden, 2021, pp. 46–48; Lawrence Hill-Cawthorne, "Detention in the Context of Counterterrorism and Armed Conflict: Continuities and New Challenges", *International Review of the Red Cross*, Vol. 103, No. 916–917, 2021, pp. 560, 563–565, 567; Els Debuf, *Captured in War: Lawful Internment in Armed Conflict*, Hart, Oxford, and Pedone, Paris, 2013, pp. 473 ff., 503 ff. See also Kevin Jon Heller, "Detention under the NDAA and the Limits of Analogy", *Opinio Juris*, 31 December 2011, available at: https://opiniojuris.org/2011/12/31/detention-under-the-ndaa-and-the-limits-of-analogy/; Ezequiel Heffes, "Detentions by Armed Opposition Groups in Non-International Armed Conflicts: Towards a New Characterization of International Humanitarian Law", *Journal of Conflict and Security Law*, Vol. 20, No. 2, 2015, pp. 232, 249.

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"membership" approach defines fighters "on the basis of their *membership* to an armed group or to armed forces", thus "using the same reasoning than for distinguishing combatants from civilians in IHL of IAC".[130] The "belonging" approach refers to Article 4 of GC III, which provides that "prisoners of war … are persons *belonging to* one of the [described] category, who have fallen into the power of the enemy".[131] Furthermore, the law of NIAC does not contain provisions relating to situations of occupation by organized armed groups, and nor does it impose obligations on these groups regarding environmental protection, prompting considerations of analogies with the occupation regime[132] and environmental norms found in the law of IAC.[133]

All these examples thus show that in today's IHL academic debates, the law of IAC remains a starting point for discussions on the necessary development of the law of NIAC. However, unlike the three previous examples of LAWS, cyber and outer space, the relevant form of analogy here is a similarity of relations: the legal framework governing IACs does not apply to NIACs as such, but rather serves as a model for designing the new legal framework that ought to govern NIACs. Analogical proposals therefore rely on adaptations of IAC rules specifically tailored to the NIAC

130 Camille Marquis Bissonnette, "The Definition of Civilians in Non-International Armed Conflicts", *Journal of International Humanitarian Legal Studies*, Vol. 7, No. 1, 2016, p. 144 (emphasis added). See also Gloria Gaggioli, "Targeting Individuals Belonging to an Armed Group", *Vanderbilt Journal of Transnational Law*, Vol. 51, No. 3, 2018, p. 910: "The current mainstream interpretation, whereby targeting of nonstate actors in NIAC is not only based on direct participation in hostilities but also on membership in an armed group, *is the result of an analogy*: if members of state armed forces are always targetable unless they are *hors de combat*, it should be the same regarding the members of nonstate organized armed groups" (emphasis added). There is no direct reference to the law of IAC but, under that law, members of State armed forces are lawful targets except when they are *hors de combat*.

131 Geneva Convention (III) relative to the Treatment of Prisoners of War of 12 August 1949, 75 UNTS 135 (entered into force 21 October 1950) (GC III), Art. 4(A) (emphasis added). See e.g. Ryan Goodman, "Al-Qaeda, the Law on Associated Forces and 'Belonging to' a Party (Did the New UN Drones Reports Get It Right?)", *Just Security*, 18 October 2013, available at: www.justsecurity.org/2191/al-qaeda-law-forces-belonging-to-party-drones-reports/; Kevin Jon Heller, "The Problematic 'Belonging to' Analogy: A Response to Goodman", *Just Security*, 23 October 2013, available at: www.justsecurity.org/2353/guest-post-problematic-belonging-to-analogy-response-goodman/. On a slightly different question but with the same analogy, see also Sasha Radin, "Global Armed Conflict? The Threshold of Extraterritorial Non-International Armed Conflicts", *International Law Studies*, Vol. 89, 2013, pp. 729–731.

132 See e.g. Tom Gal, "Territorial Control: Suggesting a Legal Framework for the Application of the Law of Occupation to Territories Controlled by Armed Groups", unpublished doctoral thesis, University of Geneva, 2022, p. 170, available at: https://archive-ouverte.unige.ch/unige:161206 (affirming that "it is very much feasible to use this body of law [the law of occupation, and particularly Geneva Convention IV] as reference, by analogy, in order to regulate the conduct of armed groups in the territory they control"). See also Pouria Askary and Katayoun Hosseinnejad, "A Possible Framework for the Exploitation of Natural Resources by Non-State Armed Groups", *International Review of the Red Cross*, Vol. 105, No. 924, 2023, pp. 1533–1535, examining the idea of occupant rights for organized armed groups which would be similar to those of an Occupying Power, i.e., an occupying State.

133 See e.g. Jeanique Pretorius, "Environmental Protection in Non-International Armed Conflicts: Finding the Way Forward", Conflict and Environment Observatory, 19 March 2019, available at: https://ceobs.org/environmental-protection-in-non-international-armed-conflicts-finding-the-way-forward/ (noting that, "[g]iven this trend, turning to the rules applicable in IACs could be a way to enhance environmental protection in NIACs"); Thibaud de la Bourdonnaye, "Greener Insurgencies? Engaging Non-State Armed Groups for the Protection of the Natural Environment during Non-International Armed Conflicts", *International Review of the Red Cross*, Vol. 102, No. 914, 2020, pp. 591, 599.

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context. This fourth example illustrates the creative rather than interpretive function of analogical reasoning: in this context of ongoing evolutions in the law of NIAC, IHL analogies are employed not as a method for interpreting the *lex lata* but as a means for advancing *de lege ferenda* proposals. Contemporary analogical solutions for NIACs are generally forward-looking – analogizers draw inspiration from the law of IAC to formulate proposals but they do not usually claim that these proposals can be applied directly to NIACs, since such proposals have not yet become fully integrated into the law governing NIACs.

This being said, State practice provides contrary illustrations where analogies with the law of IAC were already considered as part of the *lex lata* – albeit with criticism from IHL experts. US practice is particularly illuminating in this regard. To mention one example, the United States initially classified its fight against Al-Qaeda as a *new type* of armed conflict (a third category in IHL classification of armed conflicts) that is an IAC against a transnational organized armed group, thereby privileging the analogy with traditional IACs rather than with classical NIACs.[134] Such classification appeared clearly in the 2007 version of the *Commander's Handbook on the Law of Naval Operations* – which is curious, because this manual was published after the *Hamdan* decision delivered by the Supreme Court that marked a change in US legal position and its clear acceptance of the applicability of Article 3 common to the Geneva Conventions to the said armed conflict.[135] This handbook had a third section – after the sections on traditional IACs and NIACs – entitled "International Armed Conflict between Nation States and Non-State Actors", which asserted:

> Since 11 September 2001, a new type of armed conflict has emerged: international armed conflict between nation States and non-State actors. The Global War on Terror is an example of this new type of conflict. International armed conflict between nation States and non-State actors differs from international armed conflict in that it is not between two or more high contracting parties (e.g. nation States). It also differs from non-international armed conflict in that it is international in character.[136]

134 Such a conclusion can be deduced from the government brief in the *Hamdan* case, in which the United States recognized that its armed conflict against Al-Qaeda – which is not a nation-State – had an international character. US Supreme Court, *S. A. Hamdan v. D. H. Rumsfeld*, Case No. 05-184, Government Brief on the Merits, February 2006, available at: https://www.justice.gov/osg/brief/hamdan-v-rumsfeld-brief-merits; see points II(C) ("It is well established that the law of war *fully applies* to armed conflicts involving groups or entities other than traditional nation-states. … Any contrary conclusion in this case would blink reality in view of the fact that al Qaeda has repeatedly declared itself an enemy of the United States, and has inflicted *damage on a scale that exceeds previous attacks on our soil by nation-states*, and in a manner that, by any common-sense understanding, constitutes an act of war" (emphasis added)) and III(B) ("In any event, Article 3 by its plain terms does not apply to the ongoing conflict with al Qaeda. … As the President determined, because the *conflict between the United States and al Qaeda* has taken place and is ongoing in several countries, the conflict is 'of an international character,' and Article 3 is thus inapplicable" (emphasis added)).

135 See US Supreme Court, *S. A. Hamdan v. D. H. Rumsfeld*, Case No. 05-184, 29 June 2006, p. 67, available at: https://tile.loc.gov/storage-services/service/ll/usrep/usrep548/usrep548557/usrep548557.pdf.

136 US Department of the Navy, *The Commander's Handbook on the Law of Naval Operations*, NWP 1-14M, July 2007, p. 5-2, § 5.1.2.3, available at: www.govinfo.gov/content/pkg/GOVPUB-D201-PURL-gpo56195/pdf/GOVPUB-D201-PURL-gpo56195.pdf.

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According to the United States at the time, this new category – which seems to be based on an analogy with the traditional IAC classification – was thus part of IHL and constituted the *lex lata*, not a *de lege ferenda* proposal.

Example 5: Belligerent cooperation in international and non-international armed conflicts

Like the previous example, this fifth illustration does not introduce a phenomenon that is entirely new to IHL; instances of belligerent cooperation against a common enemy existed well before the beginning of this century. What is genuinely new, however, is the scale and diversity that this phenomenon has acquired since the beginning of the third millennium, especially in the context of NIACs. In such context, military assistance has been provided by a variety of actors. States have sometimes provided assistance independently – for example, France's support to the G5 Sahel countries through Operation Barkhane, which ended in 2022[137] – or have formed coalitions to fight against organized armed groups. This includes the US-led international coalition which fought against Al-Qaeda and the Taliban forces in Afghanistan after the fall of the Taliban regime,[138] as well as the other US-led international coalition engaged against IS, notably in Syria and Iraq (the so-called Global Coalition against Daesh, with ninety partners in July 2026).[139] Additionally, belligerent cooperation in NIACs is not a prerogative reserved to States; for instance, the organized armed group Hezbollah provided support to the Syrian regime in 2013 when the latter was fighting against other armed groups.[140] Further, as already indicated in the introduction of this article, the ongoing IAC between Russia and Ukraine is a clear example that belligerent cooperation is also a highly topical issue in the context of contemporary IACs.

This type of belligerent cooperation (namely, military assistance) raises significant issues for IHL, particularly with respect to its personal scope of application. In such circumstances, it is necessary to determine which actor acquires the status of party to an armed conflict and is therefore bound to fully comply with the law of NIAC or IAC. However, the existing rules which determine IHL's scope of application have not traditionally been designed to regulate belligerent cooperation; the rules governing the classification of armed conflicts focus primarily on belligerent opposition rather than collaboration. As a result, both IHL scholars and States

137 See e.g. Elise Vincent, "After Ten Years, France to End Military Operation Barkhane in Sahel", *Le Monde*, 9 November 2022, available at: www.lemonde.fr/en/international/article/2022/11/09/after-ten-years-france-to-end-military-operation-barkhane-in-sahel_6003575_4.html.

138 See e.g. "US War in Afghanistan Fast Facts", above note 7; US Department of State, Bureau of European and Eurasian Affairs, "NATO: Coalition Contributions to the War on Terrorism", fact sheet, 31 October 2002, available at: https://2001-2009.state.gov/p/eur/rls/fs/14627.htm.

139 For more information, see the official website of the coalition, available at: https://theglobalcoalition.org/en/.

140 See e.g. "Hezbollah Leader Vows to Stand by Syrian Regime in Fight against Rebels", *The Guardian*, 25 May 2013, available at: www.theguardian.com/world/2013/may/25/hezbollah-leader-syria-assad-qusair.

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have proposed frameworks aimed at regulating belligerent cooperation in NIACs and IACS – and these emerging approaches often rely on analogical reasoning.

Regarding NIACs, US practice refers to a new concept of "associated forces" to address belligerent cooperation between organized armed groups. This concept has been invoked to justify the State's authority to use force and detain members of organized armed groups that operate alongside Al-Qaeda. According to US authorities, the notion draws on an analogical reasoning with the concept of "co-belligerency" traditionally associated with IACs. Indeed, in a 2009 memorandum submitted to the District Court for the District of Columbia, the US government explained that, although "[i]t is neither possible nor advisable … to identify … the precise characteristics of 'associated forces'", the United States may detain "individuals who, *in analogous circumstances* in a traditional international armed conflict between the armed forces of opposing governments, would be detainable under principles of co-belligerency".[141] In adopting this approach, US authorities were inspired by the scholarly work of Curtis Bradley and Jack Goldsmith,[142] who notably affirm that

> [t]errorist organizations that act as agents of al Qaeda, participate with al Qaeda in acts of war against the United States, systematically provide military resources to al Qaeda, or serve as fundamental communication links in the war against the United States, and perhaps those that systematically permit their buildings and safehouses to be used by al Qaeda in the war against the United States, *are analogous to co-belligerents in a traditional war*.[143]

The concept of "associated forces" is thus the result of an analogy understood as a similarity of relations. US authorities did not extend the IAC notion of co-belligerency directly to NIACs; instead, they have consistently used a separate concept inspired by that notion but specifically reconfigured for the NIAC context.

Similarly, when examining the issue of participation in a pre-existing NIAC, the ICRC has employed analogical reasoning to develop its "support-based approach" (SBA).[144] While the Committee initially remained silent about the analogical foundation of this approach, it eventually acknowledged that the notion draws analogical inspiration from the existing concept of direct participation in hostilities

141 US District Court for the District of Columbia, *In Re Guantanamo Bay Detainee Litigation*, Case No. 08-442, Respondents' Memorandum Regarding the Government's Detention Authority Relative to Detainees Held at Guantanamo Bay, 13 March 2009, pp. 2, 7 (emphasis added), available at: www.justice.gov/archive/opa/documents/memo-re-det-auth.pdf.

142 On this point, see also e.g. Rebecca Ingber, "Co-Belligerency", *Yale Journal of International Law*, Vol. 42, No. 1, 2017, p. 83.

143 Curtis A. Bradley and Jack L. Goldsmith, "Congressional Authorization and the War on Terrorism", *Harvard Law Review*, Vol. 118, No. 7, 2005, p. 2113 (emphasis added).

144 See e.g. Tristan Ferraro, "The ICRC's Legal Position on the Notion of Armed Conflict Involving Foreign Intervention and on Determining the IHL Applicable to this Type of Conflict", *International Review of the Red Cross*, Vol. 97, No. 900, 2015, pp. 1230–1233; ICRC, *International Humanitarian Law and the Challenges of Contemporary Armed Conflicts*, Geneva, October 2015 (ICRC Challenges Report 2015), pp. 22–23, available at: www.icrc.org/sites/default/files/document/file_list/32ic-report-on-ihl-and-challenges-of-armed-conflicts.pdf; ICRC Commentary on GC IV, above note 82, paras 518–520.

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(DPH), which addresses situations in which an individual participates in ongoing hostilities.[145] Indeed, at the 2018 Bruges Colloquium on the legal and operational challenges raised by contemporary NIACs, an ICRC representative highlighted that the "[SBA] is *inspired by* [DPH]" and that "[t]he concept of [DPH] *has been adapted to* cover acts, not of civilians, but of organised armed groups".[146] These clarifications employ a traditional vocabulary for analogical reasoning ("inspired by", "adapted to").

Again, the analogy underlying the SBA refers to a similarity of relations rather than a similarity of terms. The DPH framework does not apply as such, nor is it extended to situations involving belligerent participation in a pre-existing NIAC. It would be incorrect to conclude that DPH applies by analogy to such situations, as although the SBA is inspired by an analogy with DPH, it constitutes a distinct legal solution, adapted to a different context – the concepts of DPH and SBA are thus closely related, but not identical. Participation by an individual in ongoing hostilities bears some resemblance to the participation of a belligerent in a pre-existing NIAC; therefore, the ICRC has relied on DPH when proposing the SBA.

In the present author's view, both the US authorities and the ICRC seem to consider that their respective analogical solutions to regulate belligerent cooperation form part of the *lex lata*. The United States uses the concept of "associated forces" as though it was part of the existing IHL framework, and the ICRC likewise applies the SBA in its day-to-day practice and suggests a legal basis in contemporary IHL norms, noting that the SBA "helps clarify the contours of the notion of NIAC … [and] provides insight into how to interpret this notion in keeping with the logic of IHL".[147] However, this author believes that the concept of "associated forces" and the SBA can only be characterized as *lex ferenda*: the law of NIAC does not provide a convincing legal basis from which such specific notions can be deduced, and current State practice is not general and consistent enough to accept a new IHL customary rule in NIACs.[148] This author is therefore of the opinion that these examples are better understood as *de lege ferenda* proposals illustrating the creative function of analogies. This divergence of views – between what both the United States and the ICRC seem to argue and what the present author thinks – is a welcome reminder of the caveat noted above: the boundary between the interpretation and the creation of legal norms, as well as between *lex lata* and *lex ferenda*, is not always straightforward.

145 See Nils Melzer, *Interpretive Guidance on the Notion of Direct Participation in Hostilities under International Humanitarian Law*, ICRC, Geneva, 2009.

146 *Proceedings of the Bruges Colloquium: Legal and Operational Challenges Raised by Contemporary Non-International Armed Conflicts*, 18–19 October 2018, p. 58 (emphasis added), available at: https://www.coleurope.eu/sites/default/files/uploads/page/Collegium%2049.pdf.

147 See e.g. ICRC Challenges Report 2015, above note 144, p. 23; *Proceedings of the Bruges Colloquium*, above note 146, p. 58.

148 For more information, see e.g. Raphaël van Steenberghe and Pauline Lesaffre, "The ICRC's 'Support-Based Approach': A Suitable but Incomplete Theory", *Questions of International Law*, Zoom-in 59, 2019, pp. 18-19; Pauline Lesaffre, "Participation in a Non-International Armed Conflict: A Failed Analogy with Co-Belligerency", *Boston University International Law Journal*, Vol. 41, No. 2, 2023, pp. 268–278; P. Lesaffre, above note 125, paras 647 ff., 1011–1016.

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A final remark should be made regarding this fifth example. As indicated in Example 4 concerning NIACs, IACs often remain the starting point for discussions concerning ongoing developments in the law of NIAC. In relation to Example 5, however, a counter-example – or perhaps an exception – to this general assertion emerges. Interestingly, several authors have proposed extending the SBA, which was originally developed by the ICRC for military assistance in the context of NIACs, to situations involving similar military assistance in IACs.[149] This form of analogical reasoning is a similarity of terms. The SBA is thus applied by analogy in the context of IACs: the participation of a belligerent in a pre-existing NIAC is considered sufficiently similar to the participation of a belligerent in a pre-existing IAC. Therefore, the legal solution suggested for the former – namely, the SBA – is extended as such to the latter, resulting in the application of the same legal framework to both situations. Thus, the original analogy with DPH, developed in the context of NIACs and subsequently extended to IACs, would be relevant for both NIACs and IACs.

These examples demonstrating the important use of analogies in the ongoing development of IHL do not come as a surprise. As previously explained in this same forum, analogical reasoning has already played a significant role in the historical development of IHL;[150] the present research findings align with this previous observation and reaffirm that analogies are critical for IHL's overall development.

Naturally, IHL experts and stakeholders employ analogies for current IHL development because analogical thinking offers clear cognitive advantages. At a fundamental level, it provides a conceptual framework that helps avoid the daunting prospect of approaching new legal challenges with a blank slate.[151] However, this article seeks to emphasize and raise awareness of the limitations and potential risks associated with the extensive use of analogical reasoning in contemporary IHL discourses. These limitations and risks are the focus of the closing section of this article.

149 See e.g. Jérôme de Hemptinne, "The Involvement of Supporting States in International Armed Conflicts, a Practical Approach", *Opinio Juris*, 11 June 2024, available at: https://opiniojuris.org/2024/06/11/the-involvement-of-supporting-states-in-international-armed-conflicts-a-practical-approach/ ("Even if these conditions could be *analogously applied to an IAC context* … it must be acknowledged that the ICRC does not provide the foundational basis for these principles" (emphasis added)); Alexander Wentker, Miles Jackson and Lawrence Hill-Cawthorne, "Identifying Co-Parties to Armed Conflict in International Law: How States, International Organizations and Armed Groups Become Parties to War", International Law Programme Research Paper, Chatham House, March 2024, p. 17, available at: www.chathamhouse.org/sites/default/files/2024-03/2024-03-06-identifying-co-parties-armed-conflict-international-law-wentker.pdf ("Some aspects of the ICRC's approach and its underlying structural considerations can usefully *be drawn on* in setting out an overarching *legal framework* for identifying co-parties *in both IACs* and NIACs" (emphasis added)); Cordula Droege and David Tuck, "Fighting Together and International Humanitarian Law: Setting the Legal Framework (1/2)", *Humanitarian Law and Policy Blog*, 12 October 2017, available at: https://blogs.icrc.org/law-and-policy/2017/10/12/fighting-together-international-humanitarian-law-setting-legal-framework-1-2/ ("Similar reasoning could apply in case of State support to one or more of the Party(ies) to an IAC" (previously referring to the SBA in the context of NIACs)).

150 P. Lesaffre, above note 21, Conclusion.

151 See e.g. Sandesh Sivakumaran, "Techniques in International Law-Making: Extrapolation, Analogy, Form and the Emergence of an International Law of Disaster Relief", *European Journal of International Law*, Vol. 28, No. 4, 2017, p. 1120; J. M. Carpenter, above note 27, p. 464.

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Limitations and risks of IHL analogies

Reasoning by analogy in the ongoing development of IHL necessarily involves two kinds of limitations. First, there is a set of limitations that are inherent to the structure of analogical reasoning and are thus also found in IHL when such reasoning is used. Second, IHL has its own principled structure which restricts the potential of analogies and confines them to clear boundaries. When these two kinds of limitations are not respected – i.e., when an analogizer decides to disregard analogical or/and IHL structure(s) – dangers arise for the integrity of this branch of international law. These dangers may lead either to an unjustified reduction in the protection afforded to victims of armed conflicts or, conversely, to an excessively protective regime that fails to account for the realities of warfare and thereby loses credibility in the eyes of belligerents.

Limitations related to analogical structure

Analogical reasoning imposes two main structural constraints that hinder the further development of IHL: the relationship between the analogical source and target, and the subjective dimension behind the cognitive process supporting analogical thinking. Each of these two structural constraints deserves additional explanation.

The source–target relationship

In any analogical reasoning, the target is intricately linked to the source, whose legal regime either applies to or inspires the framework developed for the target. This relationship between the target and the source inherently restricts legal innovation in three ways.

First, analogical thinking leads to an analysis of the target through the lens of the source and does not really consider the target's unique characteristics.[152] As Robin Geiss has rightly illustrated in a different context,

> [i]t is like being asked to build a BMW, but to build it with the parts of a Mercedes and a Volkswagen. These are all great carmakers, but when you combine these parts, you will have constructed a Bmcedeswagen, and that might even look halfway decent but it's not going to be a BMW, and the engine is not going to run smoothly.[153]

152 See e.g. M. De Coster, above note 26, pp. 22, 32, 38, indicating that "à force de comparer deux réalités différentes pour expliquer l'une par l'autre le risque est grand de ne plus voir la première qu'à travers la seconde et de perdre ainsi de vue leur originalité respective. Aussi le chercheur doit-il être particulièrement vigilant en présence d'un tel danger" (p. 22). Our translation: "[B]y repeatedly comparing two distinct realities in order to explain one through the other, one runs the significant risk of seeing the first only through the prism of the second, thereby losing sight of their respective singularities. The researcher must therefore exercise particular vigilance in the presence of such a danger."

153 R. Geiss, above note 120, p. 126.

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This metaphor highlights that, through an analogical reasoning, the comprehension of the target is necessarily limited to what its relationship with the source reveals. New battlefield scenarios are understood through the prism of familiar ones; for example, LAWS are analyzed in relation to traditional weapons; cyber and outer space warfare through the lens of classical land, maritime or aerial domains; NIACs through the framework of IACs; and belligerent cooperation in armed conflicts through the definition and criteria of co-belligerency or DPH. Such analogical perspectives constrain the analytical process, as these emerging realities are viewed through the window of established ones. As An Hertogen has insightfully underscored, "when researchers become wedded to the paradigms that analogies provide, these analogies can limit the course of research".[154]

Second, and in line with the first limitation, analogies interfere with the ability to fully grasp and conceptualize the novelty of the target. The source is rooted in the past, and the target is assessed in relation to it. While analogical reasoning may foster creativity, it simultaneously restricts it by discouraging "out-of-the-box" thinking.[155] How can one conceptualize the new through the lens of the old? Analogical reasoning does not allow for a comprehensive exploration of all the possibilities for IHL development in response to novel phenomena in warfare; for instance, it fails to capture the unfamiliar and novel dimensions of LAWS, cyber/outer space conflicts, contemporary NIACs, and belligerent cooperation in both IACs and NIACs. It is highly desirable for IHL to address these dimensions, as although they may not alter the nature of human suffering on the battlefield, they have the potential to amplify it to an unprecedented degree owing to their scale and rate of expansion.

Third, the source serves as the reference point for reasoning, but time can affect the source in two ways, introducing uncertainty into the legal solutions developed for the target. First, the chosen source and its legal regime may themselves evolve over time, necessitating a reassessment of the analogy with the target, and second, the analogizer's perspective may shift over time, leading to changes in the choice of source for the best analogy.[156] Indeed, as noted by Véronique Champeil-Desplats, "une analogie peut ainsi toujours être remplacée par une autre estimée plus pertinente ou adéquate pour résoudre un cas".[157] Thus, to illustrate this point, while the "weapon analogy" may currently be seen as the most suitable one for LAWS, future developments – such as the deployment of LAWS on the battlefield – may render this analogy obsolete and prompt the adoption of new ones.

The subjective dimension of the cognitive process

Analogical reasoning intrinsically involves a subjective component, shaped by the analogizer. During the retrieval phase, the analogizer selects one or several sources

154 An Hertogen, "The Persuasiveness of Domestic Law Analogies in International Law", *European Journal of International Law*, Vol. 29, No. 4, 2019, p. 1140.

155 See e.g. *ibid.*, p. 1140; R. Crootof, above note 48, p. 58.

156 See e.g. R. Crootof, above note 48, p. 79.

157 V. Champeil-Desplats, above note 26, p. 406. Our translation: "[A]n analogy can therefore always be replaced by another deemed more relevant or appropriate for resolving a case."

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from memory, a choice influenced by their informational background and prior experiences.[158] Furthermore, both the retrieval and the mapping steps require value-laden judgements, as the analogizer pursues specific objectives: in retrieving a source, they make a choice between multiple options, and in mapping the target and the source, they determine the criterion or criteria for comparison.[159] These two layers of choice provide a clear subjective input into the analogical process. The unavoidable subjectivity of analogical reasoning thus constitutes a clear limitation for the ongoing development of IHL, and such development will be constrained by the analogizer's expertise, knowledge base and intended goals.

These observations hold true regardless of whether the analogizer is an individual, such as a scholar, or a collective entity, such as the ICRC or a United Nations working group. Such collective bodies are, ultimately, composed of representatives – that is, groups of individuals. As a result, although the pool of past experiences and specific objectives may be wider within a group, thereby expanding the range of potential analogical solutions, this does not eliminate the subjective dimension inherent to the analogical process. This subjective dimension persists because the analogical process derives from the human nature of its participants.

The subjective character of analogical reasoning calls for caution when employing analogies for the ongoing development of IHL. Reasonable people may reasonably disagree, which explains why the relevance of particular analogies

158 F. Schauer and B. A. Spellman, above note 24, p. 250.

159 On the choice between sources, see e.g. F. Schauer, *Thinking Like a Lawyer*, above note 24, pp. 87, 90. On the choice of comparison criteria, see e.g. D. Duarte, above note 27, p. 152, whose conclusion is that "[a]nalogy is goal-oriented: no choice among comparison factors, particularly at the level of similarity, can be carried out except in view of some purpose"; Barbara A. Spellman, "Reflections of a Recovering Lawyer: How Becoming a Cognitive Psychologist – and (in Particular) Studying Analogical and Causal Reasoning – Changed my Views about the Field of Psychology and Law", *Chicago-Kent Law Review*, Vol. 79, No. 3, 2004, p. 1201, writing that "a person's goals, interests, or beliefs can influence which of several equally good mappings he or she will choose"; Balthazar Durand-Jamis, "Les arguments de précédent et d'analogie en droit", unpublished doctoral thesis, Université Paris Nanterre, 10 January 2024, p. 248, para. 483 (on file with author), who considers that "[l]a comparaison dépend de choix préalables de caractérisation et de finalité, de critères de ressemblances ou de dissemblances, ainsi que de règles ou de standard qui fixent les éléments à tenir pour pertinents" (our translation: "Comparison depends on prior choices regarding characterization and purpose, on criteria of similarity or dissimilarity, as well as on rules or standards that determine which elements are to be considered relevant"). See also *ibid.*, pp. 361–362, para. 718: "Les critiques de l'argument par analogie se fondent sur un élément commun: l'arbitraire dans la détermination des ressemblances et différences considérées comme pertinentes pour décider que deux choses sont ou non similaires. Il est vrai qu'il est particulièrement difficile de trouver un critère pour contrôler s'il est fait un usage rationnel ou raisonnable de l'argument par analogie. Les déterminants des similitudes sont toujours discutables et laissent ouverte la construction d'autres analogies concurrentes. Ces jugements de similarité, tout comme les jugements de valeur, ne sont jamais tranchés de façon univoque. Ils pourront être confrontés à d'autres jugements qui font primer d'autres critères pour qualifier la situation et qui feront varier le résultat de l'opération". Our translation: "Critiques of analogical reasoning rest on a common element: the arbitrariness involved in determining which similarities and differences are deemed relevant for deciding whether two things are in fact comparable. It is indeed particularly difficult to identify a criterion that would enable us to verify whether an analogy is being used in a rational or reasonable manner. The determinants of similarity are always open to debate and leave room for the construction of competing analogies. Judgements of similarity, much like value judgements, are never settled in a definitive or unequivocal way. They may be challenged by other judgements that prioritize different criteria for characterizing the situation, thereby altering the outcome of the analytical process."

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remains contested in IHL literature concerning LAWS, cyber/outer space warfare, contemporary NIACs and belligerent cooperation in armed conflicts.

Limitations related to IHL's structure

Before addressing specific limitations related to IHL's structure, it is important to recall that IHL is a branch of international law and that therefore, general constraints on analogical reasoning under international law also apply to IHL; for instance, analogical outcomes must not contradict *jus cogens* norms, such as the prohibition of torture.[160] While the reader should not lose sight of these general limitations, the present article focuses on those specific to the internal structure of IHL.

IHL is organized around a set of fundamental principles which must be considered when using analogies in this legal field. Chief among these are the principles of humanity and necessity. IHL norms are built upon a delicate balance between these two principles,[161] but this balance is not always embedded within individual norms; it sometimes emerges from the interplay between several provisions.[162] Whether inherent to a single norm or resulting from a constellation of norms, the equilibrium between humanity and necessity must be preserved while analogizing in IHL.[163] This can become complex when analogical reasoning is applied to norms that are part of a broader normative framework through which humanity and necessity are balanced. In all cases, when someone uses analogies in IHL, as for LAWS, cyber/outer space, contemporary NIACs, or belligerent cooperation in armed conflicts, such analogical reasoning must not shift this foundational balance in favour of either humanitarian or military considerations.

The principle of equality of belligerents constitutes another important "bedrock principle" of IHL.[164] On a very basic understanding of the principle, it requires that the same rules – i.e., obligations and rights – apply to all belligerents in an armed conflict regardless of the reasons and political motivations behind their engagement.[165] This principle imposes a clear limitation on the analogical process:

160 See e.g. Silja Vöneky, "Analogy in International Law", *Max Planck Encyclopedia of Public International Law*, February 2008, para. 21, available at: https://opil.ouplaw.com/display/10.1093/law:epil/9780199231690/law-9780199231690-e1375.

161 See e.g. N. Melzer, above note 145, pp. 17–18.

162 See also C. P. Trumbull IV, above note 41, p. 32: "The balance between military necessity and humanity struck by States is not always evident in a single rule, but is instead only apparent in the interaction of several different provisions."

163 See e.g. J. Mawdsley, above note 108, pp. 269, 271; Afonso Seixas-Nunes, *The Legality and Accountability of Autonomous Weapon Systems: A Humanitarian Perspective*, Cambridge University Press, Cambridge, 2022, pp. 188–189; C. P. Trumbull IV, above note 41, pp. 158–159.

164 Special Court for Sierra Leone, *The Prosecutor v. Moinina Fofana and Allieu Kondewa*, Case No. SCSL-04-14-A, Judgment (Appeals Chamber), 28 May 2008, para. 531.

165 For the principle in IACs, see e.g. Robert Kolb, *Advanced Introduction to International Humanitarian Law*, 1st ed., Edward Elgar, Cheltenham and Northampton, 2014, p. 30; Emily Crawford and Alison Pert, *International Humanitarian Law*, 2nd ed., Cambridge University Press, Cambridge, 2020, p. 32; M. Sassòli, above note 128, p. 460, paras 9.97–9.98. For the principle in NIACs, see e.g. M. Sassòli, above note 128, p. 508, para. 10.55; Philippes Jacques, "Equality of Belligerents between States and Armed

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any suggested analogical solution must apply to all belligerent parties. In the context of an IAC, a State cannot invoke an analogical reasoning to expand its rights while denying the same expansion to its State adversary. The same applies – perhaps even more critically – in NIACs: any analogical solution must be viable for both the State party and the non-State party. This limitation is thus particularly relevant when NIACs are analogized with IACs; in such circumstances, it is crucial to verify whether the proposed analogical solution inspired by the law of IAC is realistically applicable to and by organized armed groups.[166]

Additionally, beyond its foundational principles, IHL possesses other structural characteristics that further constrain analogical thinking. First, IHL is very anthropocentric in nature; IHL rules were and still are designed by and for human beings, and their language reflects this orientation.[167] This human-centred focus complicates analogical reasoning in contexts involving a less human-oriented focus, particularly involving entities or objects that do not fit neatly into existing categories, such as LAWS, which seem to occupy a conceptual space between weapons and humans (fighting in an armed conflict).[168] While these weapons systems necessarily maintain a dual link with human beings through the decision to use them on the battlefield and the consequences for potential human victims, they possess characteristics that are ordinarily unique to human beings, which explains a certain discomfort under IHL towards them.

Second, certain rules in international law explicitly prohibit analogical thinking,[169] and one such rule indirectly affects IHL. IHL consists of a corpus of primary norms defining conduct in wartime, and violations of certain of these norms may give rise to individual criminal responsibility according to international criminal law (ICL).[170] In ICL – at least in the era of the International Criminal Court (ICC) – as in European domestic law systems,[171] analogical reasoning that disadvantages the accused is prohibited. Article 22(2) of the Rome Statute of the ICC provides that "[t]he definition of a crime shall be strictly construed and *shall not be extended by analogy*".[172] It is accepted that this rule only prohibits analogies which

Groups: Proposal for a New Definition of the Principle of Equality in Non-International Armed Conflicts", *International Review of the Red Cross*, Vol. 107, No. 928, 2025, p. 382.

166 On the risk of unrealistic rules for organized armed groups when these rules draw inspiration from the law of IAC, see e.g. M. Sassòli, above note 31, p. 2073; M. Sassòli, above note 124, pp. 683–684; Marco Sassòli, "How to Develop International Humanitarian Law Taking Armed Groups into Account?", *Military Law and the Law of War Review*, Vol. 60, No. 1, 2022, p. 75: "Before IHL of IACs *can be applied by analogy*, one must first determine whether the relevant non-state armed group has the capacity necessary to comply with the rule based on IHL of IACs as that body of law has been drafted to regulate the relations between states" (emphasis added).

167 On IHL's anthropocentric nature, see e.g. P. Asaro, above note 63, pp. 700, 708.

168 See "Example 1: Lethal Autonomous Weapons Systems" above.

169 See e.g. S. Vöneky, above note 160, para. 21.

170 See e.g. M. Sassòli, above note 128, pp. 444–445, para. 9.57.

171 See e.g. William A. Schabas, *The International Criminal Court: A Commentary on the Rome Statute*, 2nd ed., Oxford University Press, Oxford, 2016, p. 548: "The notion of extending legislation by analogy is familiar in European codifications."

172 See e.g. Rome Statute of the International Criminal Court, 2187 UNTS 3, 17 July 1998 (entered into force 1 July 2002), Art. 22(2) (emphasis added). For more information on this provision, see e.g. Gerhard Werle

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create new norms *de lege ferenda* (creative function of analogies); however, it does not preclude the analogical interpretation and application of the *lex lata* (interpretive function of analogies).[173] Consequently, ICL limits the reach of certain IHL analogies (though this appears entirely logical as these analogies concern hypothetical norms that have not yet attained legal status) unless they evolve into customary law. The ICC would not prosecute an individual on the basis of a proposed innovative rule related to LAWS, cyber/outer space, contemporary NIACs, or belligerent cooperation in armed conflicts that currently has no legal status other than that of a mere analogical proposal.

Risks related to various alterations of analogical or IHL structure(s)

The important use of analogies in the ongoing development of IHL carries the risk of disrespect for the structural constraints presented in previous subsections of this article. More specifically, dangers stem from alteration(s) of either the structure of analogical reasoning or the foundational organization of IHL. Unfortunately, these risks are not just theoretical. It has already been noted in this article that the United States introduced IHL concepts such as an "international armed conflict between nation States and non-State actors"[174] or "associated forces"[175] – which are based on questionable analogical reasoning – specifically aimed at expanding its authority to target and detain individuals in its armed conflicts with transnational armed groups.

On the one hand, analogizers may distort the structure of analogical reasoning, selectively engage with its steps and only go for what they like in the analogical process. They may (unintentionally or intentionally) adopt a very partial understanding of the analogical process, seeking "all of the advantages of [a specific] analogy with none of its disadvantages".[176] During the mapping step, they may (purposefully) overlook differences between the source and the target, focusing only on some (superficial) similarities.[177] For instance, as mentioned earlier in this article, the US concept of "associated forces" – which refers to organized armed groups fighting alongside Al-Qaeda against this State – is based on an analogy with the situation

and Florian Jessberger, *Principles of International Criminal Law*, 4th ed., Oxford University Press, Oxford, 2020, pp. 92–93, paras 251–254.

173 See e.g. Philippe Currat, "L'interprétation du *Statut de Rome*", *Revue Québécoise de Droit International*, Vol. 20, No. 1, 2007, p. 152; Syntia Khedoumi, "L'analogie en droit civil et pénal: Étude de méthodologie juridique", unpublished doctoral thesis, Université d'Aix-Marseille, 18 December 2023, pp. 229–230, para. 304 (on file with author): "l'interprétation stricte de la loi pénale permet de réaliser des analogies applicatives" (p. 30, our translation: "the strict interpretation of criminal law allows for the use of applicative analogies").

174 See "Example 4: Non-International Armed Conflicts" above, with notes 134–136.

175 See "Example 5: Belligerent Cooperation in International and Non-International Armed Conflicts" above, with notes 141–143.

176 K. J. Heller, above note 131.

177 On the importance of considering all differences as well as similarities when analogizing, see S. Sivakumaran, above note 120, p. 221.

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of "co-belligerency" regulated under the law of IAC.[178] However, as this author has argued elsewhere,[179] this analogy is not valid due to critical dissimilarities that the United States has disregarded. In addition, in the transfer phase, analogizers may also adopt a selective approach and only extend to the target what they want from the source.[180]

On the other hand, analogizers may alter the structure of IHL itself when employing analogical reasoning. Examples that immediately come to mind are analogies which either cause an imbalance between the principles of necessity and humanity or disrespect the principle of equality of belligerents. These dangers are especially pronounced when analogizing modern NIACs with IACs. As Marco Sassòli has noted, while the analogy between IACs and NIACs was initially suggested to advance humanitarian concerns, it was later used to justify permissive measures,[181] thereby unduly privileging military necessity over humanity. This illustration also underscores the difficulty of anticipating the long-term consequences – including unintended ones – of suggested analogies "in shaping thought and, therefore, society".[182]

Concluding thoughts

Amid evolving battlefields, IHL strives to adapt and remain connected to real-world realities. Analogical reasoning supports this evolution in two ways. First, it serves as an interpretive method for existing norms, enabling the extension of their scope of application to new warfare situations that are comparable to those which were initially envisaged. Contemporary literature and practice on LAWS, cyber operations and outer space illustrate the important use of analogical reasoning to assess the applicability and application of the current IHL framework to modern battlefield challenges. Second, analogical thinking contributes to the formulation of new legal norms when the existing IHL framework proves indeterminate. Relevant scholarship shows that proposals for developing the law of NIAC often draw inspiration from the law of IAC. Similarly, suggestions for a better understanding of belligerent cooperation in armed conflicts rely analogously on other situations deemed comparable and already governed by law, such as DPH. This documented dual role leaves no doubt that analogical reasoning plays a central role in IHL's ongoing development.

However, the considerable potential of analogical reasoning in IHL is accompanied by significant limitations and risks. These constraints pertain not only to the structure of analogical reasoning itself, but also to the normative architecture

178 See "Example 5: Belligerent Cooperation in International and Non-International Armed Conflicts" above, with notes 141–143.

179 For more information on these critical dissimilarities, see e.g. P. Lesaffre, "Participation in a Non-International Armed Conflict", above note 148, pp. 292–297.

180 On this issue in relation to US practice, see K. J. Heller, above note 129.

181 M. Sassòli, above note 124, pp. 680, 686–687.

182 Jeffrey D. Kahn, "Very Like a Whale: Analogy and the Law", *Law, Culture and the Humanities*, Vol. 13, No. 3, 2017, pp. 335, 339, 346–351, esp. p. 350.

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of IHL. Whenever these limitations are disregarded, IHL's integrity and credibility are placed in jeopardy. It is therefore incumbent upon IHL experts and stakeholders to maintain a vigilant stance; as rightly stated by Fernando Lusa Bordin, we must keep "a watchful eye … when analogy is used in codification and progressive development".[183] If this article achieves but one objective, it is hopefully to raise awareness of the potential risks associated with the important use of analogies. Analogies are a great tool for development, but IHL experts and stakeholders must pay close attention to their everyday use and exercise careful monitoring to report any misuse of analogical reasoning.

183 F. L. Bordin, above note 42, p. 37.

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