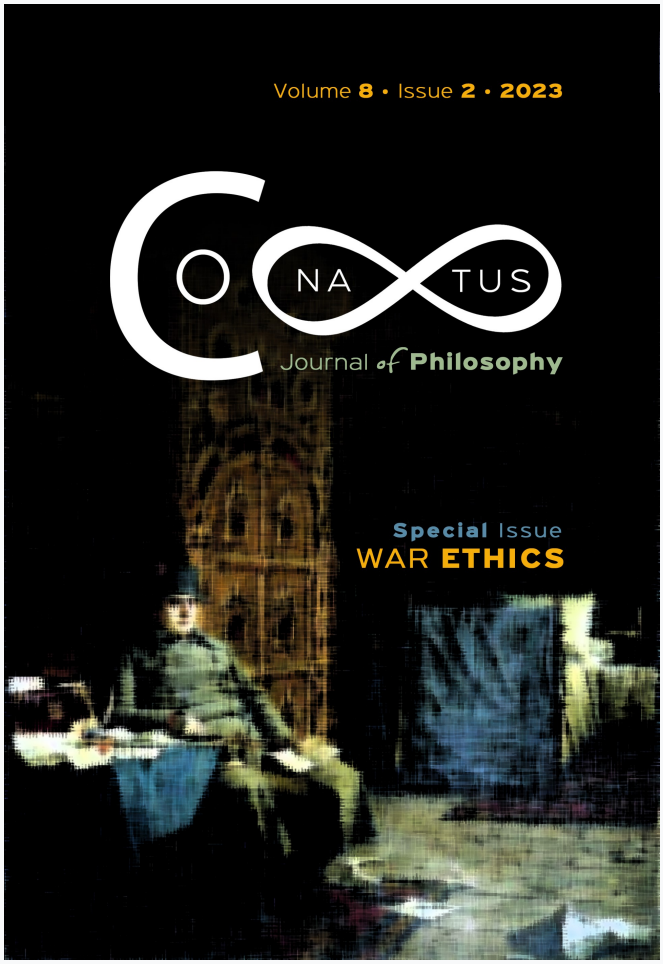
ePublishing

Conatus - Journal of Philosophy

Vol 8, No 2 (2023)

Conatus - Journal of Philosophy SI: War Ethics




# Environmental Ethics of War: Jus ad Bellum, Jus in Bello, and the Natural Environment

*Tamar Meisels*

doi: 10.12681/cjp.35267

Copyright © 2023, Tamar Meisels

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0.

**To cite this article:**

Meisels, T. (2023). Environmental Ethics of War: Jus ad Bellum, Jus in Bello, and the Natural Environment. *Conatus - Journal of Philosophy*, *8*(2), 399–429. https://doi.org/10.12681/cjp.35267

https://epublishing.ekt.gr | **e-Publisher:** EKT | **Downloaded at:** 29/01/2026 14:39:27

T. Meisels · *Conatus* 8, no. 2 (2023): 399-429
doi: https://doi.org/10.12681/cjp.35267

# Environmental Ethics of War: Jus ad Bellum, Jus in Bello, and the Natural Environment

**Tamar Meisels**
*Tel Aviv University, Israel*
*E-mail address*: meisels@tauex.tau.ac.il
*ORCID iD:* https://orcid.org/0000-0003-0240-9443

**Abstract**

*The conduct of hostilities is very bad for the environment, yet relatively little attention has been focused on environmental military ethics by just war theorists and revisionist philosophers of war. Contemporary ecological concerns pose significant challenges to jus in bello. I begin by briefly surveying existing literature on environmental justice during wartime. While these jus in bello environmental issues have been addressed only sparsely by just war theorists, environmental jus ad bellum has rarely been tackled within JWT or the morality of war. In line with the theme of this special issue, I focus my discussion of war and the natural environment primarily on the jus ad bellum level. I set out with the presumption against the use of force, and its possible exceptions. The principal question raised is whether environmental harm can trigger a new justification for war. Beyond just cause, I consider what might be a proportionate response to "environmental aggression," or negligent harm to nature. The use of force is clearly justified in response to military attacks, against the natural environment or otherwise. Where harm to nature or its inhabitants are not caused by military aggression, just war theory criteria point in favor of responding via measures short of war. Finally, I suggest that responding by means that are not themselves harmful to nature serves to fulfill the further jus ad bellum criterion of "right intention."*

**Keywords:** *just war theory; morality of war; environmental philosophy; military ethics; LOAC*

## I. Introduction

Recent decades have witnessed unprecedented environmental deterioration, with climate change and extreme weather events, such as floods and droughts, posing significant challenges. The scientific consensus points to Mankind as the main culprit, as well as the sole cause capable of moral agency. The unprecedented increase in human population alongside a variety of polluting enterprises – industry, technology, and urban development – harm wilderness areas contributing to extinction of biological species and threatening their present and future generations.

Of all human activities, however, warfare particulalry has a significant and enduring effect on the natural environment, with militaries carrying exceptionally large carbon footprints, both in war and in peacetime.[1] In keeping with limited existing data, "collectively the world's militaries are estimated to be the largest single polluter on Earth, accounting for as much as 20 percent of all global environmental degradation."[2]

Combat itself adversely effects wildlife through use of mines, bombs, and chemicals, often in already bio-sensitive habitats. Training and preparing for war, fighting and recovery from it, all inevitably affect natural systems with largely negative impacts. Maintaining standing armies: exercising and mobilizing forces contribute to carbon emissions. Military industries cause extensive pollution; warfare disrupts ecosystems, harms wilderness areas, and jeopardizes biodiversity. [3]

At the *jus ad bellum level*, as per the focus of this volume, conflict over natural resources (scarce or abundant) are a common cause for civil war – the most prevalent type of warfare since 1945 – and their conduct *in bello*, often within biodiversity hotspots, fairs particularly badly for the environment and its inhabitants.[4] Moreover, studies also

---

[1] Gary E. Machlis and Thor Hanson, "Warfare Ecology," *BioScience* 58, no. 8 (2008): 729; Mark Woods, "The Nature of War and Peace: Just War Thinking, Environmental Ethics, and Environmental Justice," in *Rethinking the Just War Tradition*, eds. Michael W. Brough, John W. Lango, and Harry van der Linden, 17-34 (Albany: State University of New York Press, 2007), 19-20, and 29-30.

[2] Woods, 20.

[3] Thor Hanson, "Biodiversity Conservation and Armed Conflict: A Warfare Ecology Perspective," *Annals of the New York Academy of Sciences* 1429, no. 1 (2018): 50, and throughout; Machlis and Hanson, throughout.

[4] Laurent R. Hourcle, "Environmental Law of War," *Vermont Law Review* 25, no. 3 (2001): 653, 661, and 679-680; Adam Roberts, "The Law of War and Environmental Damage," in *The Environmental Consequences of War*, eds. Jay E. Austin and Carl E. Bruch, 47-86 (Cambridge: Cambridge University Press, 2000), 75-77; Machlis and Hanson, 731; Josh Milburn

consider the effects of environmental degradation on the occurrence of armed conflict.[5] Climate change-conflict links have been debated within the academic literature over the past decade, indicating, i.a. that an incresing number of wars are being driven by environmental destruction, by climate change and by resource scarcity.[6] Anthropogenic climate change has been described as a "threat multiplier" for political instability, with the draught and subsequent migration preceding civil war in Syria as a controversial example.[7] As global climate change progresses and areas of the world become uninhabitable, living space and scarce natural resources are likely to increase, placing pressure on the current *jus ad bellum* regime.[8]

In line with the theme of this special issue, I focus on the presumption against the use of force, and its possible exceptions. The principal question raised by my paper is whether environmental harm can form a new justification for war, presumably in the context of war's *prima facie* unjustifiability. My answer is not definitive. The use of force is clearly justified in response to military aggression against the natural

---

and Sara Van Goozen, "Counting Animals in War: First Steps Towards an Inclusive Just-War Theory," *Social Theory & Practice* 47, no. 4 (2021): 657-659; Joseph P. Dudley, Joshua R. Ginsberg, Andrew J. Plumptre, John A. Hart, and Liliana C. Campos, "Effects of War and Civil Strife on Wildlife and Wildlife Habitats," *Conservation Biology* 16, no. 2 (2002): 319-329, and 323-324.

[5] Thomas F. Homer-Dixon, "On the Threshold: Environmental Changes as Causes of Acute Conflict," *International Security* 16, no. 2 (1991): 76-116; Thomas F. Homer-Dixon, "Environmental Scarcities and Violent Conflict: Evidence from Cases," *International Security* 19, no. 1 (1994): 5-40; Dudley, Ginsberg, Plumptre, Hart, and Campos, 324.

[6] Vally Koubi, "Climate Change and Conflict," *Annual Review of Political Science* 22 (2019): 343-360; Laurie Johnston, "The Boisi Center Interview: Laurie Johnston," *The Boisi Center Interviews* 120, March 17, 2016, 1.

[7] E.g., Peter H. Gleick, "Water, Drought, Climate Change, and Conflict in Syria," *Weather, Climate, and Society* 6, no. 3 (2014): 331-340; Jan Selby, Omar S. Dahi, Christiane Fröhlich, and Mike Hulme, "Climate Change and the Syrian Civil War Revisited," *Political Geography* 60 (2017): 232-244; Ulker Duygu, Orhan Ergüven, and Cem Gazioğlu, "Socio-economic Impacts in a Changing Climate: Case Study Syria," *International Journal of Environment and Geoinformatics* 5, no. 1 (2018): 84-93; Tobias Ide, "Climate War in the Middle East? Drought, the Syrian Civil War and the State of Climate-conflict Research," *Current Climate Change Reports* 4, no. 4 (2018): 347-354; Bastien Alex and Adrien Estève, "Defense Stakeholders and Climate Change: A Chronicle of a New Strategic Constraint in France and the United States," *Revue Internationale et Strategique* 109, no. 1 (2018): 99; cite Civil wars in Chad and Darfur as further cases in point; Machlis and Hanson, 729; Craig Martin, "Atmospheric Intervention? The Climate Change Crisis and the *jus ad bellum* Regime," *Columbia Journal of Environmental Law* 45, no. 2 (2020): 344-345.

[8] Marcus Hedahl, Scott Clark, and Michael Beggins, "The Changing Nature of the Just War Tradition: How Our Changing Environment Ought to Change the Foundations of Just War Theory," *Public Integrity* 19, no. 5 (2017): 429-443, and 433-435; Martin, throughout.

environment, as with any other armed attack. Where harm to nature or its inhabitants are not caused by military attack, Just War Theory (JWT) criteria point in favor of responding via measures short of war.

Aside from *jus ad bellum* criteria – specifically just cause and *ad bellum* proportionality – contemporary ecological concerns pose significant challenges to *jus in bello*, or military ethics.[9] The following two sections briefly survey existing literature on environmental justice during war. The subsequent sections, four and five, focus on potential ecological justifications for war as well as on the proportionality of any such recourse to arms on behalf of the environment. While the former (*jus in bello*) issues have been addressed only sparsely by just war theorists, the latter (environmental *jus ad bellum*) has rarely been tackled within JWT or the morality of war.

## II. Environmental military ethics

War has always been destructive to its environment, nevertheless, the issue of protecting nature *per se* from the deleterious effects of warfare surfaced only in the late 20th century, due mostly to the unprecedented environmental devastation caused by the Vietnam War and the first Gulf War. Since that time, increasing evidence of environmental damage caused by war has drawn academic attention, much of which remains empirical as well as scattered across distinct disciplines, ranging from political science and IR to ecology, law, and military history.[10]

As opposed to ethics, there is a veritable gold mine of legal literature on environmental regulation during armed conflict and in its aftermath. "International law has not been silent on the environmental effects of military activity,"[11] and neither have legal scholars.[12] The just

[9] Hedahl, Clark, and Beggins, 432-436.

[10] Machlis and Hanson, 729.

[11] Merrit P. Drucker, "The Military Commander's Responsibility for the Environment," *Environmental Ethics* 11, no. 2 (1989): 143.

[12] The list is extensive, e.g.: Carl E. Bruch, "All's Not Fair in (Civil) War: Criminal Liability for Environmental Damage in Internal Armed Conflict," *Vermont Law Review* 25, no. 3 (2001): 695-752; Yoram Dinstein, *The Conduct of Hostilities Under the Law of International Armed Conflict* (Cambridge: Cambridge University Press, 2004), 176-197; Michael D. Deiderich, "Law of War and Ecology – A Proposal for a Workable Approach to Protecting the Environment through the Law of War," *Military Law Review* 136 (1992): 137-160; Judith Gardam, *Necessity, Proportionality, and the Use of Forces by States* (Cambridge: Cambridge University Press, 2004), 132-133, and 177-178; Leslie C. Green, *The Contemporary Law of Armed Conflict* (Manchester: Manchester University Press, 2018), 152-153, 155, 162-163, 183, 221, and 374; Hourcle, 653-693; Peter J. Richards and Michael N. Schmitt, "Mars Meets Mother Nature: Protecting the Environment During Armed Conflict," *Stetson Law Review* 28 (1999): 1047-

war tradition has always been intertwined with legal thinking ("natural law") and the subsequent emergence of international laws of war.[13] In the area of wartime environmental protection, the law appears to precede moral scholarship, and may serve to advance it. As Jeremy Waldron suggests regarding civilian immunity: where law forces normative regulation in the face of practical necessity before deep moral reflection has developed, law is a school for moral philosophy.[14]

The most directly relevant environmental restrictions in wartime, applicable to international armed conflicts, appear in the following legal documents, all of which remain primarily human-centered and utilitarian in their perspective.

- The 1959 Antarctic Treaty bans military tests and nuclear activity in the region, partly for ecological reasons.[15]
- The 1977 Environmental Modification Techniques Convention (ENMOD) bars using the environment itself (i.e., changing or manipulating natural processes) as a weapon.[16]
- Protocol I, addition to the Geneva Convention (GPI) 1977 – Article 35 (3) proscribes methods and means of warfare intended or expected to "cause widespread, long-term, and severe damage to the natural environment." Article 55 (1) repeats this, and adds

1092; Adam Roberts, "Environmental Issues in International Armed Conflict: The Experience of the 1991 Gulf War," *International Law Studies* 69 (1996): 222-227; Roberts, "The Law of War and Environmental Damage," 47-86; Michael N. Schmitt, "Green War: An Assessment of the Environmental Law of International Armed Conflict," *Yale Journal of International Law* 22 (1997): 1-109; Michael N. Schmitt, "The Environmental Law of War: An Invitation to Critical Reexamination," *USAFA Journal of Legal Studies* 6 (1996): 237-271; Aaron Schwabach, "Environmental Damage Resulting from the NATO Military Action against Yugoslavia," *Columbia Journal of Environmental Law* 25 (2000): 117-140; Aaron Schwabach, "Ecocide and Genocide in Iraq: International Law, the Marsh Arabs and Environmental Damage in Non-international Conflicts," *TJSL Public Law Research Paper* 03-08 (2003): 1-37.

[13] Gregory M. Reichberg and Henrik Syse, "Protecting the Natural Environment in Wartime: Ethical Considerations from the Just War Tradition," *Journal of Peace Research* 37, no 4. (2000): 450; Jeremy Waldron, *Torture, Terror, and Trade-Offs: Philosophy for the White House* (Oxford: Oxford University Press, 2010), 88.

[14] Waldron, 87: "[...] Law often colonizes an area of normative inquiry first, before serious moral inquiry, as we know it begins. Often, we learn how to moralize by learning how to ask and answer legalistic questions: I strongly believe that law is a school of moral philosophy. Historically, this has been particularly true of the laws and customs of armed conflict."

[15] Antarctic Treaty (4 October 1991). *Protocol on Environmental Protection*. Articles 2 and 3. Entry into Force: 14 January 1998.

[16] Environmental Modification Convention (18 May 1977). *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques*. Entry into Force: 5 October 1978.

a further prohibition against damages to the natural environment that "prejudice the health or survival of the [human] population."[17]

- 1980 Protocol III to the UN Convention, Article 2 (4) prohibits targeting forests and other plant cover with incendiary weapons, except when such natural elements are used to hide or camouflage combatants or are themselves otherwise military targets.[18]
- Finally, the Rome Statute of the International Criminal Court, following the language of protocol I, brands as a war crime: "widespread, long-term, and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated."[19]

Moreover, leading militaries and international organizations now pay at least cursory attention to environmental issues in their military handbooks and directives.[20]

By stark contrast to the legal and empirical literature, the voluminous writing on JWT in the last few decades has taken less notice of environmental military ethics. Falling far behind their legal counterparts, moral-philosophical attention to environmental ramifications of military activity has been scant, rendering "environmental considerations... peripheral in analyses of the ethics of war."[21] We have yet to hear from leading contemporary philosophers in the ethics/morality of war – either traditionalist or revisionists – on the environmental aspect of war. Notable philosophical exceptions are few-and-far between, and their authors

---

[17] Geneva Conventions. *Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts* (Protocol I) (8 June 1977). Articles 35 (3), 55 (1). Entry into Force: 7 December 1978.

[18] Conventions on Prohibitions or Restrictions on the Use of Certain Weapons which may be deemed to be Excessively Injurious or to have Indiscriminate Effects (Protocol III) (10 October 1980). Article 2(4). Entry into Force: 2 December 1983. [Less directly relevant, Protocol II to the same convention prohibits/restricts the use of landmines, booby-traps and some other explosive devices.] See also Bruch, 710-711, on applicability to NIAC.

[19] *Rome Statute of the International Criminal Court* (19 July 1998). Article 8 (2) (b) (iv). Entry into Force: 1 July 2002.

[20] James A. Burger, "Environmental Aspects of Non-International Conflicts: The Experience in Former-Yugoslavia," *International Law Studies* 69 (1996): 333-345 [Special Issue: Protection of the Environment During Armed Conflict, eds. Richard J. Grunawalt, John E. King, and Ronald S. McClain] *in passim*, re the U.S., the UN, and NATO; Theodor Meron, "Comment: Protection of the Environment During Non-International Armed Conflict," *International Law Studies* 69 (1996): 353-358 [Special Issue: Protection of the Environment During Armed Conflict, eds. Richard J. Grunawalt, John E. King, and Ronald S. McClain], 357-358; on environmental directives in military manuals see also Schmitt, 243-244.

[21] Hedahl, Clark, and Beggins, 431.

may-well-be regarded as pioneers in their field.[22] Some of these contributions take a highly specific approach, others offer a more general analysis.

Merrit Drucker (1989), for example, discusses the perspective of a military commander's professional responsibility for the natural environment in both peace and wartime, arguing from environmental ethics that *military necessity* cannot justify any extent of environmental devastation. Most interestingly, Drucker aspires to attribute non-combatant status to the environment itself and its non-human natural inhabitants.[23] Focusing on environmental protection, such as immunity for nature in wartime, however, risks losing sight of humanitarian concerns for the lives of soldiers and civilians.[24]

Drawing on Drucker's analysis, Gregory Reichberg and Henrik Syse (2000) are the first contemporary just war theorists to explicitly suggest incorporating environmental considerations into the moral assessment of war and its conduct. Focusing specifically on Thomas Aquinas' formulation of the just war requirements and natural law, alongside Aquinas' view of human-nature relationship in terms of responsibility and stewardship, authors suggest that the just war tradition "provides an ethical vocabulary for assessing the impact of war on our natural environment," from within this influential Thomist framework.[25]

Combining some of these previous insights, Mark Woods (2007) recommends introducing environmental ethics into the just war tradition and considers how this might be done.[26] Like Drucker, Woods denies that military necessity always trumps environmental considerations and poses a vital practical ethics question: to what extent, if any, can we require armies and military commanders to risk their mission and men, in order to avoid environmental harm[27] Rejecting traditional *jus ad bellum-jus in bello* independence, Woods' environmental standards suggest that a war likely to involve significant attacks on nature would be *ipso facto* unjust,

---

[22] Drucker; Hedahl, Clark, and Beggins; Milburn and Van Goozen; Reichberg and Syse; Woods; Laurie Johnston, "Just War and Environmental Destruction," in *Can War be Just in the 21st Century? Ethicists Engage the Tradition*, eds. Tobias Winright and Laurie Johnston (Maryknoll, NY: Orbis Books), Chapter 7; Adrien Estève, "Reflecting on the Protection of the Natural Environment in Times of War: The Contribution of the Just War Tradition," *Raisons politiques* 77, no. 1 (2020): 55-65.

[23] Drucker, 146-147.

[24] Richards and Schmitt, 1088-1091, especially 1090; Roberts, "The Law of War," 268; Roberts, "Environmental Issues," 81; Deiderich, 156-157.

[25] Reichberg and Syse, 449, 457-458, and 466.

[26] Woods.

[27] Ibid., 17-18, and 25.

regardless of cause, and would necessarily fail *ad bellum* criteria such as proportionality and competent authority.[28]

Marcus Hedahl, Scott Clark, and Michael Beggins (2017) of the US Navy, argue that environmental change must affect the theoretical framework of the just war tradition at its very core, explicating this at both its *ad bellum* and *in bello* levels, as well as *post* and *para bellum*.[29] (I return to their discussion of *jus ad bellum* in the following section). Meanwhile, in theology, Laurie Johnston (2015) offers a religious account, based on the Christian virtues of humility and solidarity.[30] Reflecting on the classics, Adrien Estève (2020) points to consequentialist-utilitarian arguments within the just war tradition for protecting the natural environment in times of war, complementing them with reasoning from virtue ethics.[31] Most recently, Josh Milburn and Sara Van Goozen (2021) focus exclusively on animal rights in connection with the wartime requirements of necessity and proportionality, arguing plausibly that we ought to consider wartime harm to individual animals when assessing the justice of military action.[32]

This invaluable collection of original analyses constitutes the state-of-the-art in the ethical-philosophical discussion about war and the environment, leaving room for further thought on environmental *jus in bello*, from both a Walzarian and Revisionist accounts of justice in war.[33] One very basic example of this is the fundamental question of establishing the moral and legal status of the natural environment *in bello*.

## III. Environmental noncombatant immunity

Drucker's early suggestion of extending noncombatant immunity to the environment rests on nature's unquestionably great value, inherently and/or for the well-being of humankind, establishing a moral reason to preserve it. Consequently, Drucker argues, the same arguments that support wartime civilian immunity and the protection of cultural artifacts apply to the environment, to wit: nature is non-threatening (echoing

[28] Woods, 26-29; cf. Reichberg and Syse.

[29] Hedahl, Clark, and Beggins.

[30] Johnston, "Just War Theory and Environmental Destruction."

[31] Estève.

[32] Milburn and Van Goozen, 657, and throughout with reference on page 660 to Cecile Fabre, *Cosmopolitan War* (Oxford: Oxford University Press, 2012).

[33] I refer here to the well-known split as of the early 2000's of the body of knowledge known as the "Just War Tradition" into two broad camps: Traditional "Just War" Theory vs. Revisionist "morality of war."

Walzer's explanation of civilian immunity), nor is it in the business of war;[34] it did not choose to be involved; moreover, it provides sustenance and nurture, rendering it akin to medical and religious personnel.[35]

Affording full-fledged non-combatant immunity to the environment with all the rights that designation implies is, however, difficult to maintain. One problem with this approach, Michael Deiderich points out, "is that wars are fought largely in the natural environment, and that a commander would not be expected to sacrifice a soldier to save a tree."[36] Another concern raised by Hedahl, Clark, and Beggins is that wartime civilians have absolute rights against direct attack and military use:

> It would appear to strain credulity to believe that the environment has a right against ever being used as a means to an end. One should not be forced to conclude that digging trenches and thereby using the environment as a means would be wrong, even though using a competent adult who is not involved in hostilities in a similar way might well be.[37]

Notwithstanding, Drucker's basic reasoning is compelling because it encompasses all perspectives and attempts to avoid radical conclusions.[38] Although the argument for environmental immunity is fully sustainable only on a deontological morality that attributes inherent worth to the environment, it is, more modestly, analogous to the protection accorded by existing international humanitarian law (IHL) – anthropocentric-utilitarian "humanitarian" law – to works of art and other cultural assets.[39]

Rejecting the analysis of nature as a genuine "noncombatant," Hedahl, Clark, and Beggins point out that the environment is nonetheless not a combatant, thereby retaining a *prima facie* presumption against violent attack.[40] Reminding us that the moral default, even in wartime, is against the use of force, the authors argue more plausibly that military violence against nature should require robust justification. They propose that, "impacts to the environment must be appropriately considered in any double-ef-

---

[34] Michael Walzer, *Just and Unjust Wars* (New York: Basic Books, 1977), 144-145.

[35] Drucker, 136-137, and 146-147; see also Woods, 23.

[36] Deiderich, 156-157; see also Woods, 25.

[37] Hedahl, Clark, and Beggins, 437.

[38] Ibid., 151.

[39] Drucker, 139-140, and 149-150.

[40] Hedahl, Clark, and Beggins, 437.

fect calculation," emphasizing their significance in determining proportionality *in bello*.[41]

One advantageous feature of this last proposal to incorporate nature in proportionality calculous is that it represents a moment of union between conflicting perspectives on human-nature relations. There is a well-known debate within environmental ethics over whether to approach the natural environment as having intrinsic value, or merely instrumental value for human beings, though to the extent that we are part of nature, this may be something of a false dichotomy.[42] The environmentally devastating effects of the Russian war in the Ukraine, for example, indicate that much of what is bad for nature is harmful to human beings well. In the case in hand, both a human centered approach (anthropocentrism) as well as various non-anthropocentric approaches to environmental ethics (notably biocentrism and eco-centrism) would endorse attributing weighty consideration to environmental damage within wartime proportionality, but not on the less tenable proposal to equate the status of nature with the absoluteness attaching to civilian human rights. Accommodating a range of ethical perspectives – anthropocentric/non-anthropocentric – identifies points of "overlapping consent" that enable realistically sustainable widely agreed on advances in protecting the environment at war.[43]

The equally familiar traditionalist vs. revisionist divide within the ethics of war suggests similar benefits of value-agnosticism and attaining overlapping consensus on environmental protection between different world views. Drucker argued for environmental immunity because the environment is non-threatening, echoing Walzer's explanation of civilian immunity.[44] Considering the revisionist perspective adds an extra layer of wartime environmental protection to the Walzarian reasoning that regards those who are unthreatening as immune from attack. Revi-

---

[41] Ibid.

[42] Johnston, "The Boisi Center Interviews," 3; Reichberg and Syse, 455-456, similarly regard this division as a "false dilemma," 455.

[43] The idea of attaining overlapping consensus on environmental protection in wartime was introduced by Reichberg and Syse, 452-453, in an appeal to reach outside their specifically Thomist based argument. Reichberg and Syse's "value agnosticism" re environmental values, effectively appealing to a wide audience, is explained and adopted by Mark Woods, 24, as it is here. The reference is of course to John Rawls who famously coined the term "overlapping consensus" to denote the ability to generate a widespread agreement among free and equal citizens with contradicting comprehensive doctrines on the principles of justice. This means that similar conclusions can be derived from different, even contrasting, philosophical and moral doctrines, generating wide agreement from vastly different points of view; John Rawls, *Political Liberalism* (New York: Columbia University Press, 1993), lecture 5.

[44] Drucker, 146; Walzer, 144-145.

sionist philosophers of war notoriously reject the traditional distinction between threatening combatants and (ostensibly) non-threatening civilians, arguing that the correct criterion of liability to attack in war is not posing a direct threat, but rather moral responsibility for an objectively unjustified, wrongful, threat.[45] Needless to say, nature is not responsible for wartime injustice, any more than it poses a threat, nor is it an agent capable of full moral standing. Incorporating this revised criterion of liability serves once again to strengthen our presumption against aggression towards entities that are not combatants, but not the far-reaching proposition that would grant the environment full non-combatant status and immunities, on a par with human rights.

Moreover, both theories of the Just War are complimented by acknowledging that civilian immunity rests on a basic principle of just combat that proscribes attacking defenseless.[46] This justification for civilian immunity is particularly pertinent to the environment, which is patently defenseless and vulnerable, as are its individual non-human inhabitants.[47] The vulnerability-based justification for protecting sentient beings in wartime crosses animal rights and environmental ethics with both traditional Just War Theory and Revisionism, lending the argument greater credence. Maintaining consensus with anthropocentrism, in both environmental and military ethics, reminds us to weigh the welfare of nature and its non-human inhabitants against military goals and human life, and avoid incredulous wartime conclusions that would result from attributing equality to all life forms, or absolute non-combatant immunity to the environment.

## IV. Jus ad bellum: Just cause

Because International Law of Armed Conflict (ILOAC) focuses primarily on the conduct of hostilities, with ethics of war lagging slowly behind, questions about environmentally just and unjust wars remain relatively neglected by Just War Theory.[48] Legal and moral questions

[45] Jeff McMahan, "The Ethics of Killing in War," *Ethics* 114, no 4 (2004): 722-723; Jeff McMahan, *Killing in War* (Oxford: Oxford University Press, 2009), 32-38, and 204-205.

[46] Henry Shue, "Torture," *Philosophy and Public Affairs* 7, no. 2 (1978): 125, and 129; Henry Shue, "Do We Need a 'Morality of War?'" in *Just and Unjust Warriors*, eds. David Rodin and Henry Shue, 87-111 (New York: Oxford University Press, 2008), 87; Seth Lazar, "Necessity, Vulnerability, and Noncombatant Immunity," unpublished manuscript (2010), cited with permission from the author; Tamar Meisels, "In Defense of the Defenseless: The Morality of the Laws of War," *Political Studies* 60 (2012): 919-935; Tamar Meisels, *Contemporary Just War: Theory and Practice* (London and New York: Routledge, Taylor & Francis Group, 2017), 31-48.

[47] Milburn and Van Goozen.

[48] Some of the previous exceptions discuss *jus ad bellum* criteria as well: Hedahl, Clark, and Beggins, especially 432-435; Reichberg and Syse, 460-462; Woods, 25-30.

arise in connection with various *jus ad bellum* principles. Beginning with just cause, can environmental harm provide a *casus belli*, at what point, under what conditions and on whose authorization?[49] Are there any analogues with humanitarian intervention?[50] How does the environment figure into the proportionality of the war itself (as distinct from the *jus in bello* requirement) to minimize collateral damage.[51] Could preventive or preemptive environmental war be justified (again, in which cases)?[52] For the purposes of this short essay, I confine myself to the primary question of justifying the initial resort to arms on environmental grounds, as well as the proportionality of a forceful response to ecological harm.

To start with, war must have a just cause, typically resisting aggression (national self-defense) and perhaps also humanitarian intervention to avert grave atrocities; traditionally, aggression is "the crime of war."[53] In the post WWII era, the prohibition against the use of force among States as well-as the exceptions to it (self-defense and UN Security Council authorization) are well-established within the UN Charter system.[54] Effectively, contemporary international law and Just War Theory now recognizes only one just cause for waging war unilaterally: self or other defense against aggression understood as the occurrence of an armed attack "(with the possible exception of the prevention of large-scale violations of human rights, such as genocide)."[55] Reichberg, and Syse explain:

---

[49] Reichberg and Syse, 460-462; Hedahl, Clark, and Beggins, 433-434, and 435-436; Woods, 26-28; Eckersley, throughout; Martin, throughout.

[50] On military intervention to protect the environment: Robyn Eckersley, "Ecological Intervention: Prospects and Limits," *Ethics and International Affairs* 21, no. 3 (2007): 293-316; and in law, see Martin.

[51] Hedahl, Clark, and Beggins, 434-435 on "proportionality of ends;" Woods, 26-27 on "Macro-Proportionality."

[52] Adam Betz, "Preventive Environmental Wars," *Journal of Military Ethics* 18, no. 3 (2019): 223-247.

[53] Walzer, 21. On humanitarian intervention, 101-108; Thomas Hurka, "Proportionality in the Morality of War," *Philosophy and Public Affairs* 33, no. 1 (2005): 35; Seth Lazar, "Just War Theory: Revisionists Versus Traditionalists," *Annual Review of Political Science* 20 (2017): 41; Hugo Grotius: Wars are criminal when waged without just cause. See Grotius, BK 2, "Defense of Person and Property."

[54] The United Nations Charter, Chapter I Article 2 (4) and Chapter VII, Article 51.

[55] Walzer, 53-54; Jeff McMahan, "Just Cause for War," *Ethics and International Affairs* 19, no. 3 (2005): 1, and 7; For the nuanced differences between national self-defense against aggression as a vehicle of protecting its members basic rights to life and liberty, as well-as their common-life, as opposed to the revisionist-individualist critique, see Lazar, "Just War Theory," 41-42.

> Since war is prima facie an evil, participation in it requires moral and legal justification. Thus, according to the moral logic of "just cause," war-making will be deemed rightful or just solely when it arises as a response to grave wrong-doing committed by the other side.[56]

On a revisionist-individualist version of the Theory, "a just cause for war is a wrong that is of a type that can make those responsible for it morally liable to military attack as a means of preventing or rectifying it."[57] On both versions – revisionists and traditionalists – as well as international law – the ultimate objective is protecting basic human rights, whether via-national self-defense or more reductively to individual self-defense. [58]

Environmental destruction is often part-and-parcel of an ongoing aggressive attack on state sovereignty and its members' basic rights. Russian aggression towards Ukraine supplies ample examples of assaults on the natural environment that also threaten life and liberty.[59] This is aggression simpliciter. Airborne incendiary devices launched from the Gaza Strip into Southern Israel – burning fields and forests, wreaking long-term ecological damage – present far lower intensity cases of contemporary environmental aggression.[60] As no Israelis have been killed or injured in these attacks to date, the level of aggression and appropriate response remain debatable issues. Nonetheless these are military incursions that cross borders and cause widespread environmental harm on Israeli territory, straightforwardly violating sover-

---

[56] Reichberg and Syse, 461.

[57] McMahan, "Just Cause for War," abstract.

[58] Lazar, "Just War Theory," 41-42.

[59] See, e.g., among many reports: Deepak Rawtani, Gunjan Gupta, Nitasha Khatri, Piyush K. Rao, and Chaudhery Mustansar Hussain, "Environmental Damages due to War in Ukraine: A Perspective," *Science of The Total Environment* 850 (2022): 157932; I. Avdoshyn, M. Velychko, O. Kyryliuk, and M. Kryvych, "Russian Military Agression Against Ukraine Through the Prism of Hazard of Hostile Military and Anthropogenic Influence on Environment," *One Health and Nutrition Problems of Ukraine* 51, no. 2 (2019): 5-11.

[60] Joanna Zych, "The Use of Weaponised Kites and Balloons in the Israeli-Palestinian Conflict," *Security and Defense Quarterly* 27, no. 5 (2019): 76, and throughout; TOI Staff, "In Worst Blaze to Date, Gaza Fire Kites Destroy Vast Parts of Nature Reserve," *The Times of Israel*, June 2, 2018, https://www.timesofisrael.com/palestinian-fire-kites-destroy-much-of-nature-reserve-along-gaza-border/. In brief: since 2018, arson attacks launched from Gaza to Israel, via airborne incendiary and explosive devices – mainly kites and balloons – have burned fields, forests, nature reserves, destroying beehives, wildlife, and natural habitats, wreaking ecological havoc with long terms environmental ramifications

eignty and individual rights to personal safety and private property.[61] In both cases, attacks against land and property, whatever their degree, fit comfortably within traditional Just War Theory.[62]

Noting the rich history of attributing significance to environmental impacts within just war deliberations, Hedahl, Clark, and Beggins point out that Vitoria included damaging the environment (e.g., by burning vineyards or olive gardens) among the just causes for war.[63] Moreover, Grotius compared the severity of poisoning the land to poisoning a person, both warranting the right to defend, recover and punish, within or between political communities respectively.[64] Attributing care for the natural environment *per se* to Hugo Grotius is a bit of a stretch; nonetheless, as "the father of International law" it is noteworthy that he regarded violence towards land as a *casus belli*.

Setting out with this tradition, it is not unthinkable to argue morally and legally, as does Robyn Eckersley, that major environmental emergencies with transboundary spillover effects that threaten public safety, e.g., "Chernobyl style" threats of nuclear explosion, would justify military action. This is the strongest and most minimalist argument for ecological intervention because "[...] incursions of pollution or hazardous substances into the territory of neighboring states are analogous to an 'armed attack' with chemical, biological, or nuclear weapons; they enter or threaten to enter the territory of the victim state without its consent and with equally grave consequences."[65]

A second case is where severe ecological harm, or "ecocide," accompanies grave human rights violations, on a par with genocide or crimes against humanity. Here, Eckersley continues, justifying military action rides on the back of humanitarian intervention – "eco-humanitarian intervention" – and is subject to all the controversies and challenges surrounding the emerging norm of Responsibility to Protect,

---

[61] Pietro Stefanini, "Incendiary Kites and Balloons: Anti-colonial Resistance in Palestine's Great March of Return," *Partecipazione e Conflitto – The Open Journal of Sociopolitical Studies* 14, no. 2 (2021): 664, and 670; Hilly Moodrick-Even Khen, "From Knives to Kites: Developments and Dilemmas around the Use of Force in the Israeli-Palestinian Conflict since 'Protective Edge,'" *Journal of International Humanitarian Legal Studies* 10 (2019): 329.

[62] The crime of aggression is not limited to bodily harm or killing. Walzer, 52, and 62.

[63] Hedahl, Clark, and Beggins, 430, with reference to Vitoria, see Francisco de Vitoria, "On the Law of War," in *Political Writings*, eds. Anthony Pagden and Jeremy Lawrence, 293-328 (Cambridge: Cambridge University Press, 1991), 324, note 49.

[64] Hedahl, Clark, and Beggins, 430; Hugo Grotius, *On the Law of War and Peace* (Cambridge: Cambridge University Press, 2012), BK2.

[65] Robyn Eckersley, "Ecological Intervention: Prospects and Limits," *Ethics and International Affairs* 21, no. 3 (2007): 295-301, and 300.

and then some.[66] Nevertheless, the possibility of "eco-humanitarian intervention" is debatable within existing moral and legal justifications for war, however controversial.

The most interesting question remains whether environmental concerns could ever constitute a wrong that gives rise to "just cause," even if a state's territory has not been invaded and where no basic rights have been directly infringed?

Eckersley considers extending the idea of Responsibility to Protect (R2P) to non-human species and biodiversity, i.e., military intervention to prevent "ecocide" or "crimes against nature" in themselves, even where consequences are confined to the culprit state causing harm to its own environment. If we view human-nature relations in terms of trustor-trustee, or custodianship, it follows that destruction of species and eco-systems is a clear dereliction of duty.[67] Deliberate and willful acts that cause grave environmental damage (e.g., Iraq setting fire to Kuwait's oil fields) or extermination of species (e.g., threat of poachers annihilating Mountain Guerrillas) might then be regarded as war crimes in the first instance, or comparable to conscience-shocking "crimes against humanity" in the second, triggering "just cause" for international military intervention (subject to the remaining just war requirements).[68]

For present purposes, I leave aside the question of justifying military action purely on behalf of other species or nature alone without resorting to human interests. Maintaining impartiality – "value agnosticism" or "overlapping consensus" – with respect to environmental ethics (anthropocentric/non-anthropocentrism, etc.).[69] it seems unnecessary to get bogged down in asking whether ecological damage *in and of itself* – harm to animals, habitats, eco-systems – can constitute just cause for war, irrespective of harm to humans. While military rescue of non-human species and extending R2P to biological diversity is not inconceivable, it is not very likely either. Moreover, in most real-world cases, the extreme type of environmental harm that could even potentially justify war, would most probably be bad for humans as well, at least indirectly.[70]

---

[66] Ibid., 301-304.

[67] Reichberg and Syse, 457-458 (following Aquinas) on "stewardship;" Eckersley, 310, attributes this trusteeship approach to contemporary treaty law.

[68] Eckersley, 293, 296, 305, especially 310-311. Re climate change, see also Martin, 378-383 on analogies with humanitarian intervention and R2P.

[69] Cf. Woods, 24, referring to Reichberg and Syse, especially 452-453.

[70] This is not to assume complete harmony of interests between human beings and nature. It is

Discussing world heritage sites that lie within the territorial boundaries of sovereign states, Cecile Fabre supplies a timely example recalling the 2019 fires in the Amazon rainforests:

> These are regular occurrences, which inflict untold damage on homes, animal species, and the planet's ecosystems. Anger at what many regard as the Brazilian authorities' unconscionably reckless approach to deforestation has focused on its environmental impact for present and future generations.[71]

In such cases, Fabre suggests, outsiders have a claim to the preservation, and if necessary restoration, of "humankind's common heritage."[72] Following UNESCO's world heritage list, these include not only universally valuable manmade landmarks, such as Notre Dame de Paris, but also natural landscapes, rivers, mountains, and lakes, like the Smokey Mountains in the US or Lake Baikal in Russia, noting that some landmarks are valuable not only as heritage but also for instrumental reasons.[73]

The Amazon rainforest is (arguably) said to produce twenty percent of the Earth's atmospheric oxygen. Consequently, the fires became something of an international crisis, with Brazil's laxed policy prompting the aforementioned-anger, and fierce response from world leaders (memorably, French President Emmanuel Macron) culminating in a threat by G7 countries to withdraw from trade negotiations with Brazil. In response, President Jair Bolsonaro accused the G7 leaders of intervening in Brazil's internal affairs. Despite repeated pleas from the international community and non-governmental organisations, Brazil

---

easy to envision cases of annihilation of species, harm to organisms, natural habitats etc., even "ecocide" that does not affect humans in any considerable way. Given however that "war is hell," as General Sherman asserted, and Walzer (32) reminds us, I do not entertain the possibility of waging war to save "a tree, a forest, or even an ecosystem" (Hedahl, Clark, and Beggins, 431), though I am aware that others might, e.g., Eckersley, "Ecological intervention." I assume there are enough cases of overlapping environmental concerns for humans and the non-human world, to challenge existing JWT conception of just cause, without considering resort to arms for nature's own sake.

[71] Cécile Fabre, "Territorial Sovereignty and Humankind's Common Heritage," *Journal of Social Philosophy* 52, no. 1 (2021): 20.

[72] Ibid., especially 20-21 on the Amazon. By "heritage," she has in mind "[...] that which we inherit from our ancestors, which we value here and now and which we seek to transmit to our successors for reasons which have nothing to do with its extractive value," 17; on common heritage and humankind's common concern, see also Eckersley, 307-310.

[73] Fabre, "Territorial Sovereignty," 19.

refused to revise its environmental policies with possible dire ramifications in terms of deforestation and climate change. This is of course just one example of the international community's persistent failure to guarantee compliance on environmental issues (e.g., climate change mitigation, ecological protection, biodiversity conservation, etc.)[74]

Whether or not one accepts the argument for "Humankind's Common Heritage" in toto, the example of wildfires in the Brazilian Amazon rainforest and resultant deforestation presents a uniquely good case study for reflecting on the permissibility of resorting to force to avert grave ecological destruction, when all else has failed. In the case in hand, Fabre reminds us:

> The Central Amazon Conservation Complex, [...] located in seven states, is protected by the World Heritage at the bar of two of UNESCO's 10 criteria for inclusion: it represents "significant on-going ecological and biological processes in the evolution and development of terrestrial, freshwater, coastal and marine ecosystems and communities of plants and animals" (criterion ix); it contains "the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation (criterion x)."[75]

In keeping with the G7 threat, Fabre maintains that the protection of outsiders' interests in such sites of ecological or cultural significance is an *enforceable* duty of justice, suggesting the appropriateness of economic sanctions, expulsion from international organizations, reduction in foreign aid and so on, in cases just like this one.[76] Could extreme dereliction of duty to maintain vital ecological sites also justify force as a last resort?

Not unrelated to the notion of common heritage (albeit in connection with *jus in bello*) Reichberg and Syse allude to the natural law traditional whereby all property is originally and ultimately common to humankind, while private property is fully justified as expedient:

---

[74] Martin, on present and predictable failure to mobilize international compliance with climate change obligations *in passim*; especially re deforestation of the Amazon, and President Bolsonaro's behavior: 334 n. 10, 336-337, 346, 365, 370, and 403.

[75] Fabre, "Territorial Sovereignty," 20-21.

[76] Ibid., 22.

> Thus, the destruction of, say, farmland, rain forests, or oil resources constitutes not only a violation of the property rights of those who live in or own that area now; it is also a way of destroying property which in a sense is common to all of mankind, including future generation [...]. This entails a moral prohibition against large-scale devastation of territory, even within one's own national jurisdiction.[77]

Considering the increasing gravity of contemporary environmental concerns, notably climate change, the idea of an ecological just cause arising from such devastation even in one's own territory, or of resisting "environmental aggression," is far from fanciful. In the Amazonian case, and most others, environmental destruction is manifestly bad for human beings, not only nature per-se – at least in the long run – perhaps violating our common property or legacy, as well as harmful to non-human animals and inanimate components of nature.

The threat to be averted notwithstanding, establishing a "green just cause," even from a purely anthropocentric stance would not at present fit easily with any known version of Just War Theory, and would require considerable (perhaps desirable) adjustment of existing tenets on either its traditional or revisionist accounts, as well as international law. Causing environmental damage does not necessarily entail the use of military means of the type that would ordinarily generate just cause for war in response to an armed attack. In the Brazilian example, "just cause" would be distinct from self-defense on both traditionalist and revisionist versions because outsiders' basic rights are not necessarily undermined or impaired by failure to preserve a site such as the Amazon – at least not directly or immediately – nor was any nation-state invaded by an act constituting outright "aggression" in any traditional or legal sense.[78]

At the same time, bearing in mind increasing anthropogenic environmental destruction and climate change, it is not impossible to envision a future transgression that would violate the human right to a safe environment, both individually and communally, hampering another nation's ability to "determine their own levels of environmental quality" as well-as individual health and well-being.[79] This might constitute "aggression" even if no boarder is crossed, potentially justify-

[77] Reichberg and Syse, 463. In connection with the requirement of discrimination.

[78] Fabre, "Territorial Sovereignty," 18.

[79] Cf. Eckersley, 300. Interpretation of "territorial integrity or political independence" in Article 2 (4) of the UN Charter.

ing recourse to force in response if-and-when all else fails. In revisionist terms, grave ecological negligence or harm to the non-human world could constitute a wrong of sufficient severity to render responsible individuals in the perpetrator state liable to defensive attack, if attacking them could correct, or considerably mitigate, the environmental wrong in question.[80]

Optimally perhaps, any military response to environmental wrongdoing would be an international endeavor, rather than a vigilante job, subject to suspicions of ulterior motives. Possibly, as Craig Martin predicts re climate change, combating environmental rogues would begin with claims on the UN Security Council to authorize military action in advance under a widened understanding of its role in maintaining international peace and security before generating new "just causes" for unilateral action, though how likely or desirable any of this is remains extremely questionable.[81] Martin argues persuasively that we ought to resist any such readjustments that would be counter-productive in terms of climate change and international rule of law.[82] Moreover, justifying environmental war where no actual or imminent armed attack is present, is unlikely to fulfil the following *jus ad bellum* principle of proportionality.

## V. Jus ad bellum: Proportionality

Even if "just cause" could be adjusted to accommodate nonmilitary environmental wrongs, the further *ad bellum* criterion of proportionality would still be difficult to satisfy in cases of purely ecological harm. As for armed environmental aggression, no state can tolerate violent attacks on its territory and natural resources, alongside the property and ecological losses that accompany both. In keeping with proportionality what unilateral military measures, if any, might states employ to fend off environmental assaults?

All versions of the just war traditions include an *ad bellum* proportionality condition that applies to the war as a whole, requiring that its destructiveness must not be excessive in relation to the relevant good it will achieve.[83] This was Vitoria's understanding, echoed in countless contemporary discussions of proportionality.[84] Thomas Hurka explains,

[80] Cf. McMahan, "Just Cause."

[81] Martin, 374-378, and 409.

[82] Ibid., 400-417.

[83] Hurka, 35.

[84] Stephen P. Lee, *Ethics and War: An Introduction* (Cambridge: Cambridge University Press,

*ad bellum* proportionality requires balancing the good that the war is designed to bring about, as against the harms it is intended to avert.[85] It involves weighing the costs and benefits of war overall, though how exactly these are to be estimated or compared remains very vague.[86]

What seems clear is that proportionality in *jus ad bellum* is inevitably tied to just cause: an aggressive war cannot have any relevant benefits to balance against the harm it inflicts. Without just cause, there are no sufficient harms that warrant armed resistance. Only a war fought for a good reason, typically wars of self-defense, can pass the *ad bellum* proportionality test.[87] When wars are fought for the right reasons, the benefits side of the proportionality calculus includes their initial just cause – typically resisting aggression.

This invariable link between justice of cause and proportionality comes to the fore when considering new *casus belli*, namely environmental harm. Ecological "just cause" poses a special type of complication for the proportionality calculous. While environmental concerns may broaden the scope of just cause, the inevitable environmental devastation caused by warfare makes proportionality more difficult to satisfy. Irrespective of whether the ecological transgression requiring redress was conveyed via armed attack or not: Warfare undertaken for environmental protection will foreseeably cause further damage to the natural environment that may well outweigh its gains.[88] Moreover,

---

2012), 85-86, cites Vitoria's understanding of (in bello*)* proportionality as "the obligation to see that greater evils do not arise out of the war than the war would avert," Vitoria, 303-308; 315; see also, McMahan, *Killing in War*, 18; Asa Kasher, "Operation Cast Lead and the Ethics of Just War," *AZURE* 5769, no. 37 (2009): 53, who describes the balance in very similar terms, referring to it as "Macro-Proportionality," http://www.azure.org.il/article.php?id=502&page=all; David Rodin, *War and Self-Defense* (Oxford: Oxford University Press, 2003), 114.

[85] Hurka, 38 (relevant goods and evils).

[86] Hurka, ibid.; John Forge, "Proportionality, Just War Theory and Weapons Innovation," *Science and Engineering Ethics* 15 (2009): 26, and 28; Lee, 85-93, and especially 214.

[87] Lee, 214; Hurka, 37.

[88] Hedahl, Clark, and Beggins, 429, and 433-435. The authors foresee an increase in resource wars – just and unjust – over water etc. due to overpopulation and climate change. At the same time "the increasing impact to the environment of war will simultaneously make wide proportionality considerations more difficult to meet" (Hedahl, Clark, and Beggins, 432). Their welcome suggestion is to include environmental effects into *wide proportionality/proportionality of ends* (ad bellum) calculations, as well as granting proportionality a more prominent role within *jus ad bellum*; On the potential increases in causes for war due to environmental degradation, see again, Homer-Dixon, "Environmental Scarcities and Violent Conflict," and "On the Threshold;" Betz, "Preventive Environmental Wars," especially 231-233; Fabre, *Cosmopolitan War*, 98; Woods, 28, makes a point similar to Hedahl, Clark, and Beggins: "The main concern of the environmental ethics of war and peace is to regulate military activities to minimize or prevent environmental harms, and it seems problematic to justify further military activities –

full-scale military response to non-military harms, or even armed attacks that are largely non-lethal to humans, would likely be viewed as excessive by both public and legal opinion.

One practical way to meet these challenges is by resorting to more limited belligerent tactics in response to environmental wrongs without incurring the extent of devastation that would outweigh the benefits of military action. This includes force short of war that falls below the breadth and intensity of traditional warfare, *jus ad vim,* such as pinpointed air strikes with drones as well as non-kinetic tactics.[89]

Like most contemporary just war thinking, the discussion of *jus ad vim* begins with Michael Walzer's *Just and Unjust Wars*, specifically with the preface to its 4th edition. There, Walzer distinguishes traditional *jus ad bellum,* governing the resort to actual war (full-scale attacks, invasions) from the just use of force short of war, dubbed *jus ad vim*. As Walzer explains, the measures governed by *jus ad vim* involve the use (or threat) of force – embargos or the enforcement of no-fly zones, limited airstrikes with drones, etc. – and consequently count as acts of war under international law. Nonetheless, "it is common sense to recognize that they are very different from war."[90]

Full scale conflict always involves grave risks and hazards, unpredictable and all-to-often catastrophic consequences, and the full-fledged "hellishness of war" described throughout *Just and Unjust Wars* and enhanced if we count non-human casualties alongside harm to the natural surroundings. Bearing in mind the link between just cause and proportionality as well as the high environmental costs of military action, resorting to full-scale war to fend off ecological hazards, even if they give rise to "just cause," is unlikely to satisfy the *ad bellum* proportionality requirement to cause more benefit than harm.

By contrast, *jus ad vim* measures are limited in their scope and intensity, requiring far lesser force and harm to their surroundings, as well as less risk to their perpetrators. This is certainly the case with em-

---

and the mostly negative environmental impacts that come packaged with such activities – to protect the environment."

[89] Walzer, xv-xvii [Preface to the 4th edition]; on non-kinetic tactics, see Michael L. Gross and Tamar Meisels, eds., *Soft War: The Ethics of Unarmed Conflict* (New York: Cambridge University Press, 2017). Betz, especially 238-241, relies on Meisels and Gross' introduction to suggest both *jus ad vim* and *soft war* to combat climate change offenders; however, his only scenario for applying these measures is a highly hypothetical "[...] world of near-universal compliance with abatement obligations and would be directed at the few remaining environmental wrongdoers" (241) rendering these tactics ultimately unjustified in the real world, at least for the time being.

[90] Walzer, ibid., xvi. *jus ad vim.*

bargos and no-fly-zones.[91] As for drones, Laurie Johnston points out, they "[...] have less of a carbon footprint because they are less resource intensive. They use less fuel than manned aircraft."[92] Moreover, echoing McMahan's criterion of liability, Adam Betz points out re targeted killing, "A major advantage of these tactics [...] is the fact that they can be more readily directed at liable parties."[93]

Opposing any relaxation of the prohibition on the use of force to accommodate "atmospheric intervention" against egregious climate change offenders (e.g. Brazil), Martin nonetheless recognizes that the type of force potentially relevant in such cases would be "limited surgical strikes against precisely the infrastructure related to the noncompliant conduct [...] pertinent historical examples would be the Israeli surgical air strikes against the Iraqi nuclear facility at Osirak in 1981, or again its strike against the Syrian nuclear facility in 2007."[94]

One risk of such strikes is that they could deteriorate into international armed conflict.[95] Another pertinent disadvantage of "atmospheric intervention," following Martin, concerns the *jus in bello* and IHL core principle of distinction and civilian immunity:

> It is difficult to conceive of how such an intervention could be launched without violating fundamental principles of the *jus in bello* [...] the entire premise of atmospheric intervention is that the use of force would be targeted at infrastructure or facilities directly related to the contribution of GHGs, it is highly unlikely that such targets could be legitimately characterized as anything other than civilian objects.[96]

Legally, as well as on traditional Just War Theory, airstrikes with drones or any other weapon, may only be deployed against military targets. When dealing with environmental harms, as in the Amazon example, aiming at combatants may not be relevant. A revisionist account, on the other hand, might conceivably justify targeting culpable civilians responsible for grave environmental negligence, if killing them (or de-

[91] Ibid.

[92] Johnston, *Boisi Center Interview* (2016), 2.

[93] Betz, 241.

[94] Martin, 404.

[95] Ibid.

[96] Ibid., 409-410.

stroying related civilian infrastructure) were likely to halt, or seriously diminish, ongoing ecological harm.[97] More palatable to traditionalists and lawyers, alternative measures short of war also include non-kinetic, *Soft War*, tactics (e.g. economic restriction and cyber-attacks) as well as other high-tech options to halt or repel environmental harms without targeting civilians and civilian objects or falling foul of any proportionality requirement.[98]

Tactics covered by *jus ad vim* are, by definition, forceful measures albeit short of war, often involving kinetic force notably the use of drones for targeted killing. Consequently, as Walzer notes, *jus ad vim* acts are clearly governed by international laws of war and appropriate for combatting military targets and objectives. The concept of soft war in contrast, encompasses mostly non-kinetic tactics – e.g., economic and media/information warfare, boycotts, "lawfare," etc. – that do not usually involve a resort to arms and therefore do not count legally as acts of war at all. Consequently, directing these tactics at noncompliant civilians does not violate noncombatant immunity, on any account of JWT or international law.

Limiting countermeasures to the use of force short of war and/or "soft war" tactics, depending on circumstances, should avoid the pitfall of generating more ecological damage that would outweigh the environmental benefits of response. Confronting the incendiary objects from Gaza, for instance, Israel has used a mixture of "smart weapons," such as precision rifles, optical tracking systems and laser blades to detect and deflate airborne balloons, claw and down flammable kites etc., as well as imposing economic sanctions and blockades, with very partial success in halting and preventing attacks.[99] In this case, military measures, such as surgical drone strikes against weapons facilities and targeted killings of responsible militants (i.e. Hamas operatives) may ultimately prove more appropriate and effective against arson attacks, though all this remains controversial.

More generally, resorting to a mixture of *jus ad vim* and/or soft war tactics to combat environmental injustice is probably-our best shot in terms of efficacy and proportionality, from both human and non-human centred ethical perspectives. From a traditional and legal

[97] Cf. McMahan, "Just Cause."

[98] See Gross and Meisels; similarly, recall in connection with the Amazon rainforests, Fabre, 22, notes economic sanctions, expulsion from international organizations, reduction in foreign aid as appropriate responses.

[99] Stefanini, 673; Zych, 80-81; Amos Yadlin "On Deterrence, Equations, Arrangements, and Strategy," *INSS Insight* 1078 (2018): 3.

stance, non-kinetic alternatives and soft power will be more appropriate against civilians and civilian infrastructure, however culpable they may be for the environmental wrongs in question. Moreover, soft war tactics do not run the risk of counter-productiveness in terms of causing further environmental harm. Last resort and proportionality as well as common sense also require exhausting measures such as punitive economic sanctions of increasing severity, ideally authorized by the Security Council, as well as collective diplomatic pressures, before contemplating forceful measures, particularly where no prior belligerent attack has taken place.[100]

When outright environmental aggression is perpetrated by an attacking army (as in the Russian case) or terrorist organizations (as in the case of Hamas), kinetic *jus ad vim* tactics against combatants and other military targets are legitimate, assuming reasonable chance of success, at a low cost to their operatives and to the natural surroundings they purport to protect. For revisionist philosophers of war, this conclusion holds also for targeting civilian culpable aggressors and applicable infrastructure, if attacking them is likely to reduce the injustice they cause while avoiding excessive costs to nature as well as to non-liable combatants and civilians on the just side.

## VI. Concluding remarks

War is very bad for the environment, and modern war is even worse. Despite contemporary awareness of environmental concerns, this aspect of warfare has not received sufficient consideration from philosophers of the just war – traditionalists and revisionists. Several noteworthy exceptions were addressed throughout; more extensive legal attention was noted. In this case, it seems, ethics must follow in the footsteps of the law.

Because most everyone typically believes their war to be just, the law focuses inevitably on rules mitigating the conduct of hostilities, rather than on objective justice of cause. Consequently, within this sub-field – environmental justice of war – pioneered primarily by lawyers, *jus ad bellum* has been explored even less than environmental ethics in war.

Contemplating military action to combat environmental transgressions, just cause and proportionality deserve initial consideration. First, war's *prima facie* evil requires paying critical attention to any newly

[100] Cf. Martin, 376-377, on the precedent of economic sanctions against North Korea and Iran re nuclear proliferation.

alleged causes for war. Nevertheless, ecological harm may sometimes constitute just cause, at the intersection between human and non-human interests even in the absence of bodily harm. The simplest cases of "environmental aggression" that sit comfortably within the just war tradition are those in which borders are crossed and environmental destruction involves territorial invasion and destruction of property.

More controversially, in view of the ongoing environmental crisis, it is conceivable that a future just cause may arise from deliberate or negligent harm to the natural environment, even if no direct violence towards land or people has been perpetrated. This is where the fires in the Amazon rainforest came in. Examples like this one also raise questions of legitimate authority (e.g., the unlikely event of Security Council authorising environmental military action by a coalition of states) that was not discussed here. I am not the first to note that the "The five permanent members of the U.N. Security Council are all among the most responsible for climate change."[101]

As for *ad bellum* proportionality discussed at length: where military response is apt and necessary, countermeasures must not wreak more environmental harm than they purport to combat. In view of this, I argued that both *jus ad vim* and so called "soft war" offer a better alternative for combating environmental wrongs than outright war. Both forceful measures short of war and soft-war tactics are more likely to fulfil the requirement of *ad bellum* proportionality than large scale armed conflict.[102]

Soft tactics would begin with "media warfare" – publicity and information, public pressure – as well as so called "lawfare" – international legal action against perpetrators of environmental harm. It would proceed to political-diplomatic measures and pressures, and possibly "ecological peacekeeping" followed closely by economic restrictions and trade sanctions, "green conditions" attached to loans, aid, and sales, and rising to cyber-attacks.[103] These tactics, within limits, may be employed against civilians as well as combatants on all accounts. Once non-kinetic measures have been exhausted, both environmental and humanitarian concerns re proportionality point in favor of limited force, short of war – *jus ad vim* – against primary military culprits and their infrastructure.[104]

---

[101] Martin, 409.

[102] Cf. again Betz, 238-241.

[103] See Gross and Meisels, throughout; on the emerging notion of "ecological peacekeepers," and "green conditionality" see Eckersley, 294, 302, and 312.

[104] Cf. Martin, on limited airstrikes, though he does not argue for them.

Finally, satisfying proportionality in the case of an environmental just cause, also goes towards fulfilling the further *jus ad bellum* criterion of "right intention." Beyond just cause and proportionality, among other things, warfare must be conducted with the right intentions i.e., those embedded in the war's just cause. Environmental war, not unlike humanitarian intervention, runs the risk of being used as a pretext for furthering other interests. In the event of an environmental wrong triggering the just cause requirement, it is incumbent on those combatting it to demonstrate their sincerity by fighting in a way that avoids causing more environmental devastation than prevented. Otherwise, they risk becoming aggressors themselves.[105]

## References

Alex, Bastien, and Adrien Estève. "Defense Stakeholders and Climate Change: A Chronicle of a New Strategic Constraint in France and The United States." *Revue Internationale et Strategique* 109, no. 1 (2018): 93-103.

Antarctic Treaty, 4 October 1991. *Protocol on Environmental Protection*. Articles 2-3. Entry into Force: 14 January 1998.

Avdoshyn, I., M. Velychko, O. Kyryliuk, and M. Kryvych. "Russian Military Aggression Against Ukraine Through the Prism of Hazard of Hostile Military and Anthropogenic Influence on Environment." *One Health and Nutrition Problems of Ukraine* 51, no. 2 (2019): 5-11.

Betz, Adam. "Preventive Environmental Wars." *Journal of Military Ethics* 18, no. 3 (2019): 223-247.

Bruch, Carl E. "All's not Fair in (Civil) War: Criminal Liability for Environmental Damage in Internal Armed Conflict." *Vermont Law Review* 25, no. 3 (2001): 695-752.

Burger, James A. "Environmental Aspects of Non-International Conflicts: The Experience in Former-Yugoslavia." *International Law Studies* 69 (1996): 333-345.

Conventions on Prohibitions or Restrictions on the Use of Certain Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects (Protocol III) (10 October 1980). Article 2(4). Entry into Force: 2 December 1983.

[105] Cf. Reichberg and Syse, 459. Without "Right Intention:" Victims of unjust aggression can swiftly become aggressors themselves."

Deiderich, Michael D. "Law of War and Ecology – A Proposal for a Workable Approach to Protecting the Environment through the Law of War." *Military Law Review* 136 (1992): 137-160.

Dinstein, Yoram. *The Conduct of Hostilities Under the Law of International Armed Conflict*. Cambridge: Cambridge University Press, 2016.

Drucker, Merrit P. "The Military Commander's Responsibility for the Environment." *Environmental Ethics* 11, no. 2 (1989): 135-152.

Dudley, Joseph P., Joshua R. Ginsberg, Andrew J. Plumptre, John A. Hart, and Liliana C. Campos. "Effects of War and Civil Strife on Wildlife and Wildlife Habitats." *Conservation Biology* 16, no. 2 (2002): 319-329.

Eckersley, Robyn. "Ecological Intervention: Prospects and Limits." *Ethics and International Affairs* 21, no. 3 (2007): 293-316.

Environmental Modification Convention (18 May 1977). *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques*. Entry into Force: 5 October 1978.

Estève, Adrien. "Reflecting on the Protection of the Natural Environment in Times of War: The Contribution of the Just War Tradition." *Raisons Politiques* 77, no 1. (2020): 55-65.

Fabre, Cécile. "Territorial Sovereignty and Humankind's Common Heritage." *Journal of Social Philosophy* 52, no. 1 (2021): 17-23.

Fabre, Cécile. *Cosmopolitan War*. Oxford: Oxford University Press, 2012.

Forge, John. "Proportionality, Just War Theory and Weapons Innovation." *Science and Engineering Ethics* 15 (2009): 25-38.

Gardam, Judith. *Necessity, Proportionality, and the Use of Force by States*. Cambridge: Cambridge University Press, 2004.

Geneva Conventions. *Protocol Additional to the Geneva Conventions of 12 August 1949 and relating to the Protection of Victims of International Armed Conflicts* (Protocol I) (8 June 1977). Articles 35 (3), 55 (1). Entry into Force: 7 December 1978.

Gleick, Peter H. "Water, Drought, Climate Change, and Conflict in Syria." *Weather, Climate, and Society* 6, no. 3 (2014): 331-340.

Green, Leslie C. *The Contemporary Law of Armed Conflict*. Manchester: Manchester University Press, 2008.

Gross, Michael L., and Tamar Meisels, eds. *Soft War: The Ethics of Unarmed Conflict*. New York: Cambridge University Press, 2017.

Grotius, Hugo. *On the Law of War and Peace*. Cambridge: Cambridge University Press, 2012.

Hanson, Thor. "Biodiversity Conservation and Armed Conflict: A Warfare Ecology Perspective." *Annals of the New York Academy of Sciences* 1429, no. 1 (2018): 50-65.

Hedahl, Marcus, Scott Clark, and Michael Beggins. "The Changing Nature of the Just War Tradition: How Our Changing Environment Ought to Change the Foundations of Just War Theory." *Public Integrity* 19, no. 5 (2017): 429-443.

Homer-Dixon, Thomas F. "Environmental Scarcities and Violent Conflict: Evidence from Cases." *International Security* 19, no. 1 (1994): 5-40.

Homer-Dixon, Thomas F. "On the Threshold: Environmental Changes as Causes of Acute Conflict." *International Security* 16, no. 2 (1991): 76-116.

Hourcle, Laurent R. "Environmental Law of War." *Vermont Law Review* 25, no. 3 (2001): 653-693.

Hurka, Thomas. "Proportionality in the Morality of War." *Philosophy and Public Affairs* 33, no. 1 (2005): 34-66.

ICRC. "How Nature is Protected During Armed Conflict – The Laws of War." https://www.youtube.com/watch?v=vTJCk41Qowo.

Ide, Tobias. "Climate War in the Middle East? Drought, the Syrian Civil War, and the State of Climate-conflict Research." *Current Climate Change Reports* 4, no. 4 (2018): 347-354.

IPCC. *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems*. 2019.

Johnston, Laurie. "Just War Theory and Environmental Destruction." In *Can War be Just in the 21st Century? Ethicists Engage the Tradition*, edited by Tobias Winwright and Laurie Johnston. Maryknoll, NY: Orbis, 2015.

Johnston, Laurie. "The Boisi Center Interview: Laurie Johnston." *The Boisi Center Interviews* 120, March 17, 2016.

Kasher, Asa. "Operation Cast Lead and the Ethics of Just War." *AZURE* 5769, no. 37 (2009): 43-75.

Koubi, Vally. "Climate Change and Conflict." *Annual Review of Political Science* 22, (2019) 343-360.

Lazar, Seth. "Just War Theory: Revisionists Versus Traditionalists." *Annual Review of Political Science* 20, no. 1 (2017): 37-54.

Lazar, Seth. "Necessity, Vulnerability, and Noncombatant Immunity." 2010. Unpublished Manuscript. Cited with permission from the author.

Lee, Stephen P. *Ethics and War: An Introduction*. Cambridge: Cambridge University Press, 2012.

Machlis, Gary E., and Thor Hanson. "Warfare Ecology." *BioScience* 58, no. 8 (2008): 729-736.

Martin, Craig. "Atmospheric Intervention? The Climate Change Crisis and the Jus ad Bellum Regime." *Columbia Journal of Environmental Law* 45, no. 2 (2020): 332-417.

McMahan, Jeff. "Just Cause for War." *Ethics and International Affairs* 19, no. 3 (2005): 1-21.

McMahan, Jeff. "The Ethics of Killing in War." *Ethics* 114, no. 4 (2004): 693-733.

McMahan, Jeff. *Killing in War*. Oxford: Oxford University Press, 2009.

Meisels, Tamar. "In Defense of the Defenseless: The Morality of the Laws of War." *Political Studies* 60, no. 4 (2012): 919-935.

Meisels, Tamar. *Contemporary Just War: Theory and Practice*. London and New York: Routledge, Taylor & Francis Group, 2017.

Meron, Theodor. "Comment: Protection of the Environment During Non-International Armed Conflict." *International Law Studies* 69 (1996): 353-358.

Milburn, Josh, and Sara Van Goozen. "Counting Animals in War: First Steps Towards an Inclusive Just-War Theory." *Social Theory and Practice* 47, no. 4 (2021): 657-685.

Moodrick-Even Khen, Hilly. "From Knives to Kites: Developments and Dilemmas around the Use of Force in the Israeli-Palestinian Conflict since 'Protective Edge.'" *Journal of International Humanitarian Legal Studies* 10, no. 2 (2019): 303-336.

Rawls, John. *Political Liberalism*. New York: Columbia University Press, 2005.

Rawtani, Deepak, Gunjan Gupta, Nitasha Khatri, Piyush K. Rao, and Chaudhery Mustansar Hussain. "Environmental Damages Due to War in Ukraine: A Perspective." *Science of The Total Environment* 850 (2022): 157932.

Reichberg, Gregory M., and Henrik Syse. "Protecting the Natural Environment in Wartime: Ethical Considerations from the Just War Tradition." *Journal of Peace Research* 37, no. 4 (2000): 449-468.

Richards, Peter J., and Michael N. Schmitt. "Mars Meets Mother Nature: Protecting the Environment During Armed Conflict." *Stetson Law Review* 28, no. 4 (1999): 1047-1900.

Roberts, Adam. "Environmental Issues in International Armed Conflict: The Experience of the 1991 Gulf War." *International Law Studies* 69 (1996): 222-277.

Roberts, Adam. "The Law of War and Environmental Damage." In *The Environmental Consequences of War*, edited by Jay E. Austin and Carl E. Bruch, 47-86. Cambridge: Cambridge University Press, 2000.

Rodin, David. *War and Self-Defense*. Oxford: Oxford University Press, 2003.

Rome Statute of the International Criminal Court (19 July 1998). Article 8(2)(b)(iv). Entry into Force: 1 July 2002.

Schmitt, Michael N. "Green War: An Assessment of the Environmental Law of International Armed Conflict." *Yale Journal of International Law* 22, no. 1 (1997): 1-109.

Schmitt, Michael N. "The Environmental Law of War: An Invitation to Critical Reexamination." *USAFA Journal of Legal Studies* 6 (1996): 237-271.

Schwabach, Aaron. "Ecocide and Genocide in Iraq: International Law, the Marsh Arabs and Environmental Damage in Non-international Conflicts." *TJSL Public Law Research Paper* 03-08 (2003): 1-37.

Schwabach, Aaron. "Environmental Damage Resulting from the NATO Military Action against Yugoslavia." *Columbia Journal of Environmental Law* 25, no. 1 (2000): 117-140.

Selby, Jan, Omar S. Dahi, Christiane Fröhlich, and Mike Hulme. "Climate Change and the Syrian Civil War Revisited." *Political Geography* 60 (2017): 232-244.

Shue, Henry. "Do We Need a 'Morality of War?'" In *Just and Unjust Warriors*, edited by David Rodin and Henry Shue, 87-111. New York: Oxford University Press, 2008.

Shue, Henry. "Torture." *Philosophy and Public Affairs* 7, no. 2 (1978): 124-143.

Stefanini, Pietro. "Incendiary Kites and Balloons: Anti-colonial Resistance in Palestine's Great March of Return." *Partecipazione e Conflitto - The Open Journal of Sociopolitical Studies* 14, no. 2 (2021): 663-660.

TOI Staff. "In Worst Blaze to Date, Gaza Fire Kites Destroy Vast Parts of Nature Reserve." *The Times of Israel*, June 2, 2018. https://www.timesofisrael.com/palestinian-fire-kites-destroy-much-of-nature-reserve-along-gaza-border/.

Ülker, Duygu, Orhan Ergüven, and Cem Gazioğlu. "Socio-economic Impacts in a Changing Climate: Case Study Syria." *International Journal of Environment and Geoinformatics* 5, no. 1 (2018): 84-93.

Vitoria, Francisco de. *Political Writings*, edited by Anthony Pagden and Jeremy Lawrance. Cambridge: Cambridge University Press, 1991.

Waldron, Jeremy. *Torture, Terror, and Trade-Offs: Philosophy for the White House*. Oxford: Oxford University Press, 2010.

Walzer, Michael. *Just and Unjust Wars: A Moral Argument with Historical Illustrations*. New York: Basic Books, 1977.

Winwright, Tobias, and Laurie Johnston, eds. *Can War Be Just in the 21st Century? Ethicists Engage the Tradition*. Maryknoll, NY: Orbis, 2015

Woods, Mark. "The Nature of War and Peace: Just War Thinking, Environmental Ethics, and Environmental Justice." In *Rethinking the Just War Tradition*, edited by Michael W. Brough, John W. Lango, and Harry van der Linden, 17-34. Albany: State University of New York Press, 2007.

Yadlin, Amos. "On Deterrence, Equations, Arrangements, and Strategy." *Institute for National Security Studies Insight* 1078 (2018). http://www.jstor.org/stable/resrep19437.

Zych, Joanna. "The Use of Weaponised Kites and Balloons in the Israeli-Palestinian Conflict." *Security and Defense Quarterly* 27, no. 5 (2019): 71-83.