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Counting animals in war: First steps towards an inclusive just-war theory

Josh Milburn and Sara Van Goozen

Abstract

War is harmful to animals, but few have considered how such harm should affect assessments of the justice of military actions. In this paper, we propose a way in which concern for animals can be included within the just-war framework, with a focus on *necessity* and *proportionality*. We argue that counting animals in war will not make just-war theory excessively demanding, but it will make just-war theory more humane. By showing how animals can be included in our proportionality and necessity assessments, we provide a crucial first step towards developing an animal-inclusive account of just-war theory.

Keywords

Animal rights; animal ethics; just-war theory; warfare; proportionality; necessity.

1: Introduction

Although soldiers no longer ride into battle on horseback, war is very bad for animals. Like the horses, some animals are used in military activities, such as the dogs used to help guard bases or to sniff out mines. Some animals are used in military research and development (R&D) and training, such as the pigs used to test weaponry and train medics.¹ An awareness

¹ For how animals are, were, and could be used in warfare, see the contributions to Salter, Nocella, and Bentley 2013 and Hediger 2012.

of the implications of war for animals is growing among animal activists and the general public—though academics rarely consider the impact of war on animals (Salter 2013: 24–25).

Another group of animals impacted by warfare are its incidental victims. Writing during the Bosnian War in October 1992, John F. Burns reports that only a single animal remained alive in Sarajevo’s zoo after the city had been under siege for four months:

The scene in the animal house is wrenching. A putrid odor pervades the concrete building, and cage after cage is littered with the carcasses of lions, tigers, leopards and pumas. From the skeletal remains of some and the whole carcasses of others, it is clear that some died sooner than others, and that their surviving mates fed on the bodies before they, too, succumbed to hunger. ... In the cage where there were once four bears, the sole survivor prowls amid the jawbones and rib cages and tufted skins of the others. The big cats and bears and wolves lasted longer than the giraffe, the ponies and the buffaloes, which were in paddocks exposed to Serbian positions when the siege set in. By midsummer, they were dead, shot out of pity, perhaps, or maybe for target practice. (Burns 1992; cf. Kinder 2012)

The harms of war to caged or domesticated animals, however, are surely dwarfed by the harms to free-living (hereafter, *wild*) animals. Guy Smallman, in *The War You Don’t See*, recalls being the first Westerner to arrive after a US bombing in Afghanistan. He said that “The first thing that struck me when I was going in there was the silence. The Afghan countryside is usually a symphony of birdsong. And it was absolutely *dead quiet*...” (quoted in Salter 2013: 25, emphasis Salter’s).

Though emotive, these anecdotes do nothing to reveal the scale of the impact of war on animals. One can find some indication of this in the empirical literature in conservation

biology and (so-called) warfare ecology. However, this work offers only a partial image, for at least three reasons. First, data about the impact of warfare can be hard to come by or is incomplete; conflict zones present a range of serious challenges for the researcher, while conflict-related data can be shrouded in secrecy and misinformation. Second, conservationists and ecologists are generally concerned with the success of species and ecosystems, and not the success of individual animals. Though these can go hand-in-hand, they do not always do so. And third, conservationists and ecologists focus on particular kinds of animals. The impact of conflict on populations of charismatic megafauna is at least partially documented, but the impact on animals of less revered species and on domesticated animals may go little mentioned.

The empirical data suggests that warfare and military activity can have both positive and negative impacts on wild animals, but that, overall, the negative far outweigh the positive (Daskin and Pringle 2018; Dudley et al. 2002; Gaynor et al. 2016; Hanson 2018). In a 2016 review, twenty four pathways by which armed conflict impacts wildlife were identified. Of these, five were positive, nineteen negative; and ten were “tactical” (six military, four auxiliary), with fourteen “non-tactical.” Let us take the negative military tactical impacts as examples. Wildlife are impacted by mines, bombs, and chemicals, as were Rwanda’s gorillas and Angola’s elephants during and in the wake of these countries’ respective civil wars; by the use of environmental destruction as a war tactic, as were the animals living in areas defoliated by American forces in Vietnam or Turkish forces in Tunceli Province; by the fact that protected areas are used as a staging ground (including Mozambique’s Gorongosa National Park and El Salvador’s forests); and by an increase in arms availability: Ethiopia’s civil war, for example, led to a proliferation of firearms and, consequently, a militarisation of hunting (Gaynor et al. 2016: 534–535).

Reviews of this literature call attention to documented negative conservation consequences for favoured species—typically large mammals—in conflict zones (e.g., Dudley et al. 2002: 322–323; Hanson 2018: 54). For instance, there is the decline of elephants in Uganda and the DRC, and the increase of poaching of primates in the DRC and in Rwanda in response to these various countries’ civil wars (Dudley et al. 2002: 322). Particularly troubling for conservationists is the fact that conflict zones very frequently coincide with so-called biodiversity hotspots; some 80% of major armed conflicts in the second half of the last century took place in hotspots, even though these make up only 2.3% of the Earth’s land surface (Hanson et al. 2009). Hotspots are typically rich in vertebrate life, and conflict can seriously adversely affect these animals. A study of African protected areas found that the occurrence of armed conflict was the strongest predictor of a drop in large-mammal population sizes between 1946 and 2010 (Daskin and Pringle 2018). Though, to repeat, population size is not the primary concern for animal ethicists—who are concerned with the fates of particular individual animals—this empirical work points to the depth and breadth of the negative impact of war on nonhuman beings.

The scholarship on warfare and animals in (critical) animal studies and on ecology/conservation of animals in warfare has had relatively little impact on scholars of just-war theory. Despite the occasional nod towards ecological damage as something that needs to be taken seriously in assessments of the justice of military action (e.g., Clifford 2012; Drucker 1989; Eckersley 2007), harms to animals go basically unmentioned. For example, *Stones and Lives*—a 2018 conference exploring “non-human value in war”—asked

how we ought to compare harms to human beings to damage to objects (or the environment), how we ought to distribute resources between protecting humans and protecting objects, whether one may intentionally harm humans for the sake of

protecting non-human values, how we ought to restore heritage in the aftermath of conflict, and how we ought to compensate for damage to heritage sites.²

Here, then, we see theorists seeking to explore the impact of war beyond humanity. But these theorists choose to focus on landscapes, artefacts, and the environment—not animals. Similarly, the twenty eight principles drawn up by the UN’s International Law Commission about environmental protection in war do not even include the word *animal* (International Law Commission 2019; cf. Durant and Brito 2019). For both militaries and just-war theorists, animals “are ‘collateral damage’ in the most invisible sense of that euphemism” (Andrzejewski 2013: 74). To our knowledge, no one has argued that theorists ought to consider harm to animals when weighing the justice of military actions. Animals are completely absent from the work of many major contemporary just-war theorists, such as Michael Walzer and Jeff McMahan,³ and only mentioned in passing by others. For example, the possibility of counting animals in war is acknowledged in a prescient footnote from Cécile Fabre:

My cosmopolitan account of the just war is human-centric. Perhaps that is an arbitrary restriction—perhaps we should include non-human animals in our global community. This might in turn have far-reaching implications for our understanding of the just war. In particular, we would need to work out whether ... to include the bads accruing to non-human animals as a result of the war in our proportionality calculus ... My intuitions on those questions are far too rough at this point to be worth setting out here

² See <http://stockholmcentre.org/event/workshop-proportionality-and-non-human-value/>.

³ This is particularly surprising, given that animal ethics and just-war theory are mainstays of analytic moral and political philosophy—and even more so given that they share some leading figures. For example, McMahan has written works of great importance in both literatures, but has never addressed them together.

—hence the restricted scope in that respect of the present inquiry. (Fabre 2012: 7, fn. 9)

In this paper, we will take up the question proposed by Fabre regarding the inclusion of animals. Our focus will be on the requirements of *proportionality* and *necessity*. Both of these requirements apply to *jus ad bellum* (considerations relating to the just resort to war) and *jus in bello* (considerations relating to right conduct in war). Proportionality requires that the harm caused by a war, or a particular action within a war, must be proportionate to the good it achieves. Necessity requires that there must be no less harmful (feasible) means of achieving the same good ends than the proposed war or particular action within a war.

Of course, proportionality and necessity are only two of the requirements to be considered when assessing the justice of military action. In order to develop a full account of an animal-inclusive just-war theory, we would also need to consider the other just-war requirements, such as *just cause* (acceptable justifications for going to war), *legitimate authority* (who may wage war), *discrimination* (who may be targeted in war), and so on. Taken together, these just-war criteria establish a) when resort to war may be justified, b) who may legitimately wage war, c) who may be harmed (deliberately or otherwise) in war, and d) what kinds and how much harm may be caused, intentionally or unintentionally, in pursuit of victory.

Some work has already been done to address the inclusion of animals in relation to those first three concerns. So for example, the question of whether war on behalf of animals could be justified, and who would be able to legitimately fight such a war, has been alluded to by several animal ethicists (Bernstein 2004; Best 2006; Cochrane and Cooke 2016; Cochrane 2018, chap. 5; Hadley 2009)—though it is a topic, we think, avoided by many out

of a desire to stay away from controversial questions about violence on behalf of animals.⁴ Karsten Nowrot (2015, cf. Alger and Alger 2012), meanwhile, explores the issue of animal “combatants,” suggesting that animals should be part of the moral discussion relating to who may be (deliberately) harmed in war. The final issue, however—the question of what kinds of, and how much, harm to animals may permissibly be caused in pursuit of victory—has received little (if any) attention. Yet wars cause very significant foreseen-but-unintended harm to animals. As such, addressing this has a degree of urgency, providing us with genuine opportunities to alleviate real-world death and suffering of animals. Given that animals are rarely the intended targets of harm in war, and war on behalf of animals has never been a serious possibility, addressing the unintended-but-foreseen harm caused to animals should be the first concern of anyone interested in making just-war theory more inclusive. The necessity and proportionality requirements are the just-war requirements that directly address how much harm may be caused in war, and so it is these requirements that we will address in this paper. As we will show, including animals in considerations of necessity and proportionality offers a practical way of considering animals in real-world warfare without making just-war theory wholly impractical.

In light of this paper’s aim, we will also make the further restriction of focusing on including animals in our assessment of *specific* wars and military activities. The very existence of standing armies raises important questions of proportionality and harms to animals—with regards to, for instance, militaries’ carbon footprint, and soldiers’ consumption of animals. While we welcome critiques of the use of animals in the “military-animal industrial complex” (Salter 2013)—and support practical steps to make the military more humane⁵—this is a separate question to the one we are presently addressing. Questions

⁴ The Oxford Centre for Animal Ethics and its journal—*The Journal of Animal Ethics*—explicitly oppose violence on behalf of animals. The organisation’s fellows are not permitted to advocate for it, and comments in favour of it are banned from the journal.

⁵ For instance, Finland has taken steps towards plant-based meals for soldiers (Rosendahl 2018). This was motivated by environmental concerns, but indicates what could be done.

of proportionality and necessity of particular activities, therefore, do not need to become entangled with these other issues. The argument will proceed as follows. §2 introduces the requirements of *jus ad bellum* and *jus in bello*, and explains the proportionality and necessity requirements. §3 presents our proposal for including harm to animals in proportionality and necessity assessments, and §§4–5 discuss and reject the worry that harm to animals should not be included in proportionality and necessity calculations as it would make just war too demanding. While animal-sensitive accounts of proportionality and necessity will not be overly demanding, they will have a practical impact. This will be shown in §6, which considers our proposal’s implications with three case studies.

2: Proportionality and necessity *ad bellum* and *in bello*

Just-war theory comprises at least two sets of criteria.⁶ The *jus ad bellum* criteria specify when resort to war is justified, and the *jus in bello* criteria specify just behaviour in war. The most widely recognised *ad bellum* criteria include the requirements of 1) just cause, 2) legitimate authority, 3) right intention, 4) reasonable prospects of success, 5) last resort, and 6) proportionality (Johnson 1999; Walzer 2006). The *in bello* requirements are typically considered to be 1) discrimination, 2) necessity, and 3) proportionality (Hurka 2005; Walzer 2006).

Offering detailed explanations of each criterion will take us too far from our present enquiry, but a brief comment will be useful. As noted above, taken together, the *jus ad bellum* and *jus in bello* criteria provide us with answers to the questions of when war might be justified (the requirements of just cause, right intention, and reasonable prospect of success), who may wage war (the requirement of legitimate authority), who may be deliberately harmed in war (the requirement of discrimination), and how much harm may be

⁶We set aside any criteria concerning *jus post bellum* (“justice after war”).

caused in war (the requirements of proportionality, necessity, and last resort—which is the *ad bellum* version of the necessity requirement).

In order for a war to be fully just, it needs to satisfy all the requirements.⁷ On the other hand, according to both international law and what is sometimes referred to as “orthodox” just-war theory, individual combatants and commanders only need to concern themselves with considerations of *jus in bello*. In other words, unjust and just combatants alike can *fight* justly so long as they adhere to the principles of *jus in bello*.⁸ Our argument concerns proportionality and necessity both *ad bellum* and *in bello*. These requirements are the ones that most explicitly require us to consider the unintended-but-foreseen effects of war:⁹ *Ad bellum*, proportionality and necessity (the latter of which is, to repeat, captured in the idea of “last resort”) address the (expected) overall harm caused by a war—*in bello*, they address the (expected) harm caused by particular military actions. We consider necessity and proportionality both *ad bellum* and *in bello* because the operation of the criteria is not sharply different when considered *in* war than when considered *prior to* war. The same factors (expected good effects, expected negative effects, probability of effects occurring, etc.) need to be considered in both situations—and our examples will concern both *ad bellum* and *in bello* decision-making.

⁷ For example, a war that meets the *ad bellum* requirements but is not conducted according to the principles of *jus in bello* is not a just war. Neither is a war that initially meets the *ad bellum* requirements, but changes over time: for instance, a war initially intended to repel an invasion could turn into a war of conquest.

⁸ For the canonical expression of “orthodox” just-war theory, see Walzer (2006). However, in contemporary scholarship, a split between orthodox and *revisionist* just-war theory has developed. Revisionists tend to argue that—since they are fighting to achieve an unjust cause—it is impossible for an unjust combatant’s actions to meet the *in bello* proportionality and necessity requirements, because their actions do not have good consequences (see, e.g., McMahan 2009; Fabre 2012). Moreover, they tend to reject the claim that it is permissible for unjust combatants to kill just combatants, since the latter are morally innocent to the extent that they are fighting in (collective) self-defence. On the revisionist approach, then, it would seem practically impossible for unjust combatants to fight in accordance with *jus in bello*. In this paper, we do not take a side in this debate. Revisionist and orthodox just-war theory, we suggest, can—and should—consider the effect of (just or unjust) combatants’ actions on animals. For those with revisionist leanings, whenever we discuss *in bello* examples below, assume that the war was *ad bellum* just.

⁹ Jeff McMahan and others distinguish between *narrow* and *wide* proportionality (McMahan 2009). Narrow proportionality concerns harm done to those liable to suffer harm, such as culpable aggressors, whereas wide proportionality concerns harm done to those not liable to suffer harm, such as innocent bystanders. Although issues of narrow proportionality do arise in war—it is possible to inflict disproportionate harm on soldiers—since combatants are generally liable to be targeted, it is primarily wide proportionality that should be considered when assessing the justice of military action. Similar can be said about necessity, *mutatis mutandis*.

Before we can proceed, we need to be clear about what these requirements entail—which is not straightforward. Take, first, proportionality. Both *ad bellum* and *in bello*, proportionality requires that the harmful consequences of a military action do not outweigh the harm averted. But there is disagreement as to whether this means that harmful consequences must be *less than* good consequences, *not exceed* good consequences, or *not be much greater than* good consequences (Hurka 2005). The key question here is about weighting. Do we weigh (likely) good effects the same as (likely) bad effects, or could we give good effects more weight? The latter means that (action in) war could still be proportionate when causing more harm than good.

There is also the question of which effects count. As Thomas Hurka argues, a view of proportionality that counts *all* good effects of a war is implausible. Rather, the relevant good effects are only those arising from the avoidance of the harms that give a war its just cause. Incidental good effects (e.g., boosting the economy) do not count (Hurka 2005: 40–45). On the other hand, *all* bad effects caused by the war should be considered in our proportionality calculation (Hurka 2005: 45–46). But although the relevant bad effects are not restricted in terms of content, the introduction of another agent’s wrongful choice in the causal chain may reduce the weight we should give the bad effect in our calculations (Hurka 2005: 47). In addition, it may be the case that different weights are ascribed to harms to friendlies and enemies, including non-combatants.¹⁰

¹⁰ For instance, Hurka (2005) suggests that it is permissible to somewhat discount foreseen harm to enemy non-combatants compared to harm to friendly or neutral non-combatants. This means that when faced with the choice between foreseeably harming 100 friendly non-combatants and foreseeably harming 200 enemy non-combatants, it is permissible to pursue the latter course of action (see also Abbate 2014; Kamm 2005; Bazargan-Forward 2018). However, there is no widespread agreement on to what extent, if at all, enemy non-combatant lives can be discounted (for the argument that there is no such general permission to discount harm to enemy non-combatants, see, for instance, McMahan 2010 and Van Goozen 2018). It is generally held that harm to *combatants* can be discounted compared to harm to non-combatants (enemy or friendly); however, even here there is some disagreement. For instance, in the case of a “supreme emergency”, Walzer (2006) suggests it might be permissible to override the principle of distinction and target civilians directly. This may be understood as the claim that in such situations it is permissible to absolutely prioritise friendly lives, whether they are non-combatants or combatants.

Let us now turn to necessity, which is generally considered to require that we select the least harmful method of achieving our aim (e.g., the resolution of the conflict through military victory). Thus, *ad bellum*, a war is unnecessary if other, less harmful but nonetheless feasible, means to resolve the conflict have not been tried (in other words, if the war is not the *last resort*). *In bello*, an action is unnecessary if less harmful (but feasible) tactics have not been tried. Daniel Statman offers a fairly conventional definition, which serves for present purposes:

[the] necessity condition concerns the relation between some defensive act, D, and all alternative defensive acts D1, D2... Dn. It requires that D be less harmful than all these alternative acts... Whatever [a threat's] nature and magnitude, [the victim] is required to take the least harmful measure to block it. (2011: 436–437)¹¹

So, both necessity and proportionality require us to consider possible harmful consequences. The key difference between them is the point of comparison. For proportionality, we compare our proposed course of action to doing nothing; for necessity, we compare our proposed course of action to alternative courses of action. Thus, any particular action can be necessary but not proportionate, and *vice versa*. However—given that both require us to consider the (intended and unintended) harmful consequences of our actions—including harm to animals in our judgments concerning either one of necessity or proportionality will affect our understanding of the other.

Determining whether military action meets the proportionality and necessity requirements is, thus, not straightforward, both because of the difficulty of the calculations

¹¹ However, some argue for a more nuanced version, which enables us to consider factors such as the likelihood of success of the different options, as well as whether some or all of the prospective victims of harm are liable to (some) harm (e.g., Lazar 2012; McMahan 2018). What none of these more nuanced approaches deny, however, is that necessity requires us to compare different potential courses of action and select the one that is, by some standard or other, the least harmful—the *morally best* defensive option (McMahan 2018: 436–437).

involved, which necessarily deal with probabilities and uncertainty,¹² and because of theoretical disagreements about what they entail. Nevertheless, we hold that all just-war theorists, regardless of their specific views on necessity and proportionality, have reason to count animals in war. That said, let us now turn directly to their inclusion.

3: Counting animals' interests

Counting animals in war means, first, considering the interests that animals have and, second, taking them into account when weighing the costs of military activities. Such “activities” range from the declaration of war to individual soldiers’ missions. By an animal having an *interest* in *x*, we mean simply that denying the animal *x* will have an adverse impact upon her wellbeing—it will make things go worse for her. Though the language of animal interests has traditionally been associated with utilitarian approaches, some approaches will consider interests in order to calculate the *rights* that animals possess. These approaches have recently become very popular.¹³ We do not, however, *need* to talk about animal rights in order to consider animals’ interests in our judgements of proportionality and necessity.

All sentient animals (animals able to experience pleasure and pain) possess at least some interests, and these interests may be sufficiently strong to tip the scales in proportionality or necessity calculations. There are tricky questions to be asked about how to calculate what interests an animal has, and how strong they are, but—in the abstract—counting animals’ interests is no more mysterious than counting humans’ interests.

¹² Proportionality in the context of war is sometimes confused with a retributive or backward-looking proportionality principle (Hurka 2005: 59; McMahan 2017). Proportionality in war asks whether harm averted exceeds harm caused. In other words, the question is not whether A causes more harm than B has previously done, but whether A causes more harm than B would have done if A did not act. This means that assessments of proportionality are necessarily uncertain. *Mutatis mutandis*, the same applies to necessity.

¹³ Tony Milligan (2015) identifies them as a near-defining feature of the recent “political turn” in animal ethics. Alasdair Cochrane (2012) offers a particularly comprehensive account, and has begun to explore just-war theory and animals (Cochrane and Cooke 2016; Cochrane 2018: chap. 5). He has also observed that Sue Donaldson and Will Kymlicka have arguments that ultimately lead to the need for “a just war theory for animals” (Cochrane 2013: 139). Donaldson and Kymlicka (2011) offer the most influential recent account of animal rights. Though they are less explicit about this than others, their account is interest-based (see 2011: 264–265; 2013: 151), and they are the writers credited by Fabre (2012: 7) as pushing her to think about animals and warfare.

3.1: What interests do animals have?

We can identify four crucial interests possessed by sentient animals. The first is an interest in not suffering. There is a sense in which it may be simply true *a priori* that, all else equal, suffering is bad for wellbeing: if *anything* lessens one's wellbeing, we might think, suffering does. Granted, there are empirical questions about *which* beings suffer, about the stimuli that induce suffering in a being, and the extent to which these stimuli induce suffering (cf. Singer 2011: chap. 3). But we can be fairly sure that practically all sentient beings suffer when they burn in firebombed scrub, or bleed when limbs are blown off by mines, or starve in defoliated wastelands.

Some claim that animals have *less* of an interest in not suffering than human persons. Loren Lomasky, for example, suggests that pigs have weaker interests than human persons as the former may not have memories of pain that lead to unpleasant apprehensions of future pain, and may not see such pain as an episode in the life of a continuing self (2013: 188–189). Such an argument might well backfire, however, when one considers how this comprehension of oneself as an enduring entity can lessen the horror of suffering (Garner 2013: 126; Linzey 2009: 17–18). As Bernard Rollin observes, suffering beings with limited psychological complexity lack the ability to understand that pain can end, and cannot look back to a time before pain: “their entire universe is the pain, they can have no *hope!*” (2011: 431, emphasis Rollin's). Judith Jarvis Thomson puts it well when she says that

other things being equal it is worse to cause an animal pain than to cause an adult human being pain. An adult human being can, as it were, think his or her way around the pain to what lies beyond it in the future; an animal—like a human baby—cannot do this, so that there is nothing for the animal but the pain. (1990: 292–293)

For our purposes, however, we will assume that the interest that an animal has in avoiding pain is *as strong* as the interest possessed by a human in avoiding pain.

A second key interest is the other side of the first. Just as animals have an interest in avoiding negative experiences—like suffering—so they have an interest in having access to positive experiences. One, but not necessarily the only, such experience might be pleasure. Warfare, in addition to making animals suffer, may cut off their opportunities to experience positive things.

The second interest is particularly important because it provides the foundation of the third: an interest in continued life. It would be odd to allow that animals have an interest in avoiding suffering but *not* in avoiding death. This would suggest that, if we sought to protect animals' interests, the best thing to do would be to painlessly kill them all (Godlovitch 1971: 168; McMahan 2002: 201; McMahan 2008: 67). The straightforward way to show how continued life is good for an animal is to observe that continued life offers the chance for positive experience, and death is bad for the animal because it removes this chance. This is a *deprivation* account of the badness of death—death is bad because it deprives a being of good things—and accounts like it have been prevalent in animal-rights theory (e.g., Abbate 2019; DeGrazia 2002; Regan 2004).

There are at least three crucial senses in which a deprivation account may ground a weaker interest in continued life for most animals than for paradigmatic humans (Cochrane 2012: 66–67). Humans typically have a further interest in life because, first, they can reflect on future valuable experiences, bringing them present wellbeing; second, they have projects and goals they wish to fulfil; and, third, they have a stronger psychological continuity with their future selves than do animals.¹⁴ In short, we can refer to these differences by saying that

¹⁴ This final point relies upon a commitment to the Time-Relative Interest Account of the badness of death. This is the idea that “the badness of death is proportional to the strength of the victim’s time-relative interest in continuing to live. The strength of his time-relative interest in continuing to live is a function of both the net

many humans possess high degrees of *personhood*, while most sentient animals possess this, if at all, to a much lower degree.

To these considerations about the importance of personhood, we can add two empirical observations about the lives of animals. First, animals may be incapable of the most positive experiences open to many humans: The highs of aesthetic appreciation, deep interpersonal love and connection, and life-defining achievement are closed off to most (or all) animals. Second, animals frequently live lives of hardship. Tens of billions of animals live in intensive farms, for example. Such animals can expect short lives of stress and tedium punctuated by flashes of satisfaction and pain, ending in a violent death. Wild animals, too, can live very bad lives, afflicted by diseases, competition, starvation, and constant threats of predation (Horta 2010). On this deprivation account of the badness of death for animals, then, animals typically have a lower interest in continued life than do humans. But precisely how much lower is going to depend on myriad contextual and empirical factors.¹⁵

The fourth key interest, which derives from the others, is in access to those things necessary for subsistence. For wild animals, this can be framed as an interest in access to their territories. Animals require access to food, water, shelter, air, and/or space. These things afford them positive experiences, and, without them, the animals will suffer and die. As argued, suffering and death are contrary to the interests of animals, while positive experiences are in their interests. Derivatively, then, access to their territories is in the animals' interests (Cooke 2017; Hadley 2015). This is important, as many of the harms

amount of good his life would contain if he were not to die, and the extent to which he would be bound to himself in the future, if he were not to die, by the prudential unity relations" (McMahan 2002: 105–106). For more, see McMahan 2002: passim, esp. §§1.5.2, 2.2.2, and 3.1.1–3.1.2.

¹⁵ Similar is going to be true on *desire accounts*, which ground animals' interest (if any) in continued life on their desires (see, e.g., DeGrazia 2002: 59–61; Garner 2013: 128–130). Such accounts—which we are not going to develop here—may have different results for the development of an animal-sensitive just-war theory. Developing such an approach is a worthwhile endeavour for those sympathetic to desire accounts. There may be other accounts of death's badness for animals that hold that any interest-bearing being has an *equal* interest in not dying. We are not going to explore such positions here, but we do note that they are going to have some radical consequences when connected with an animal-sensitive account of just-war theory (compare §5.2). This may be a reason to think twice about endorsing them.

warfare imposes upon animals come not directly from injury caused by weapons, but from the impact that warfare has on the animals' environment (Andrzejewski 2013; Ramanathapillai 2013). Domesticated animals, too, need food, air, water, shelter, and so on to avoid suffering and death, but framing these interests in terms of access to territory likely goes wrong. However, domesticated animals are clearly faced with death and suffering—and loss of positive experiences—if their human caretakers are killed or flee due to war (Tyler 2013: 12-13). Just as an animal-sensitive account of just-war theory will consider the harms to wild animals resulting from the destruction of habitats, it will consider the harms to domesticated animals resulting from the removal of their caretakers.

3.2: *Why count animals' interests?*

This gives us the start of a fairly straightforward *how*, but it does not give us a *why*. Many readers will share the intuition towards which Fabre (2012: 7, quoted above [§1]) points—that we should include animals within our moral community, and thus just-war theory. However, we do not need to rely on a blunt appeal to intuition. If animals have interests and their interests count,¹⁶ we can motivate animals' inclusion in just-war theory using a form of argument familiar to animal ethicists.¹⁷

Consider a first case of possible military action in which serious side-effect harm is expected to accrue to a human civilian population. Our considered judgement in this case is that we have a duty to take steps to minimise this harm where possible—perhaps by taking different military action, or by taking no military action at all. Doing so would ensure, as far as possible, that the vital interests of these civilians, such as their interests in continued life, are met. Hence, just-war theory contains requirements of proportionality and necessity. But imagine a second case of possible military action in which serious side-effect harm is

¹⁶ We offer no argument to those who believe that all animals lack interests, or that animals' interests are irrelevant, and doubt that many readers will hold these views.

¹⁷ This particular framing borrows from John Hadley (2006: 446), who deploys it in a different context.

expected to accrue to an animal population. Like the civilians of the first case, animals face risk of early death, which is contrary to their interests. By extension, then, we have a duty to take steps to minimise this harm where possible. In both cases, interests will be adversely affected, and, in both cases, steps can be taken to minimise the setting-back of interests. Hence, we propose that it is appropriate to say that questions of proportionality and necessity apply to animals.

There may seem to be a fundamental difference between the first and the second case, however, in that the humans in the first case have greater interests in continued life than the animals in the second, as explained in §3.1. But we deny that the interests the animals possess are sufficiently weak that they should be ignored. To support this, we observe that there are certain humans with a similarly weaker interest in continued life, due to their lack of personhood. Thus, they lack those things that make the interests of the civilians (specifically, their interests in remaining alive) in the first case stronger than the interests of the animals (specifically, their interests in remaining alive) in the second case. Such humans include many severely cognitively impaired individuals. For the sake of argument, let us assume a third possible military action, which likely entails serious harm to a population of humans with severe cognitive impairment. Our considered judgement in this case is that we would have a duty to take steps to minimise such harm where possible, just as in the first case. Further, we take it that the majority of just-war theorists agree that humans with severe cognitive disabilities, like paradigmatic humans, must be considered in calculations of proportionality and necessity.

But if the victims in the third case must be considered, even when the interests concerned are weaker than those in the first case, the fact that the interests in the second case are weaker than those in the first is not a compelling argument for not considering them. Consistency demands that the interests in the second case are considered in proportionality

and necessity calculations. To affirm that these interests are too weak to consider would have unacceptable consequences for the third case.

Why hold that human and animal interests are comparable? On a conceptual level, it is difficult to see why we should hold that there is an in-principle difference between them without resorting to speciesism—the valorisation of members of a particular species, analogous to the way that racists valorise members of a particular race. In any case, there are some intuitively troubling consequences to such an approach. Imagine a worker at a remote research station about to receive a painful but ultimately undamaging electric shock from an exposed wire. The only way that an engineer can prevent this is to briefly shut off power by redirecting the supply through a flooded field, electrocuting and killing a herd of wild horses. Intuitively, the killing of these horses is deeply disproportionate. Due to the conceptual and intuitive problems with such a view, we contend that there is no prospect of reasonable disagreement about *whether* animal harm could outweigh human harm. Reasonable disagreement is going to be about *how* to weigh particular human and animal harms—and in the next section, we offer our particular proposal.

3.3: *The positive proposal*

It is worth separating two goals of this paper. The first is to argue that animals should be included in just-war theory. The second is to offer a positive proposal for that inclusion. It is worth acknowledging that one could, in principle, accept that animals should be included in just-war theory, but object to our particular proposal. Nonetheless, we believe our proposal a sensible response to close consideration of the normative salience of differences between humans and animals.

We hold that equal interests should be considered equally—and that *unequal* interests should be considered *unequally*. This means that a human’s interest in continued life should

normally outweigh an animal's interest in continued life—likely, *multiple* animals' interests in continued life—because the strength of a paradigmatic human's interest in continued life is greater than the strength of an animal's, as explored in §3.1. Note that this is not the same thing as saying that animals' interests count for less—*equal* interests, we believe, should not count for less. So, a human interest in not suffering should typically *not* outweigh an animal's interest in not suffering—and certainly not multiple animals' interests—assuming the same amount of suffering. This is because, as was explored in §3.1, we have no reason to believe that animals' interests in not suffering are weaker than humans'.

Thus, we hold that animal interests of equal strength to human interests should be treated as equally significant unless there is some morally salient difference between them. We have already suggested that animals' species membership is not a compelling reason to *completely ignore* their interests, and we now add that we hold that species membership is not a compelling reason to *partially discount* animals' interests relative to human interests. It is not our claim, for example, that when a human and an animal could both be negatively impacted by an action that the negative impact on the human is weightier *because she is a human*. It may, of course, be weightier because the negative impact on the human's welfare is greater than the negative impact on the animal's welfare—though that is a completely different claim.

Drawing upon the existing work on proportionality and necessity discussed in §2, however, we allow that there *may* be other relevant considerations. For example, depending on the particular vision of proportionality favoured, a military *might* fairly discount the interests of wild animals relative to the interests of some humans because said wild animals (unlike said humans) are not members of “their” community—just as they might fairly discount the interests of enemy citizens relative to the interests of their own citizens. Alternatively, a military *might* fairly discount the interests of enemy soldiers relative to the

interests of animals as the animals' interests (unlike those of enemy soldiers) are the interests of innocent non-combatants. All of this depends on the particular view of proportionality favoured—and, in the interests of parsimony, we here remain neutral on this point.

4: A demandingness objection to counting animals in war

As argued in §3, on a theoretical level, counting animals in war need not be difficult. However, as discussed in §2, determining proportionality and necessity is *already* complex. For instance, in order to determine the proportionality of a war, we need to consider a whole range of—more *and* less—likely negative effects, whose weights furthermore (may) need to be mediated according to others' intervening agency. By introducing a further factor into these calculations, one might object, we are making it more difficult to satisfy these requirements.¹⁸ This gives rise to a demandingness objection to counting animals in war: Inclusion makes fighting justly too difficult, and thus should be rejected.

To illustrate, consider a counterinsurgency scenario in which combatants are tasked with killing an insurgent in a remote compound. They have reliable intelligence that there are no (human) non-combatants present. On anthropocentric understandings of proportionality and necessity, it could be permissible to attack the compound using artillery or an air-strike. If the combatants are required to count animals, however, they would need to calculate the number of animals at the location. Insurgents may have guard or pack animals; they may keep farmed animals for food; or may simply be surrounded by wildlife. If the number of animals is likely to be large, proportionality and necessity would, it might be pressed, require that the combatants find a highly discriminative way to kill the insurgent, or refrain from attacking. If killing the insurgent is an important war aim, they will be drawn to the first option. However, killing the insurgent without harming the animals is likely to require the combatants to enter the compound on foot. As such attacks are risky, the combatants may

¹⁸ Though we do not want to attribute this view to her, Fabre's words quoted in §1 above may hint at this worry.

therefore be required to risk *their* lives, and the success of the mission, to avoid harming animals. An account of proportionality requiring this would be very demanding—perhaps, a critic might say, to the point of absurdity.¹⁹

This demandingness objection goes further. The demandingness is not merely *practical*, as explored above. It also has an *epistemic* element.²⁰ Counting animals in war requires a great deal of knowledge to which military personnel do not presently have access. This includes the number of animals present in particular areas, what will harm these animals, and the *extent* to which these animals may be harmed. Some of this, such as the psychological complexity of an animal, needed to calculate the harm of her death, may be disputed among experts. So, not only do military commanders *not have* this information, but it is not information that could be *easily acquired*—or so goes the objection.

Before we respond to these demandingness objections, we acknowledge that whether this demandingness is problematic is up for debate. Intersectional scholars of critical animal studies and critical peace studies, for example (e.g., Nocella, Salter, and Bentley 2013), might welcome the implication that combatants will be significantly restricted in what they can do and that many (or all) wars will be unjust. However, our aim is to show that this demandingness objection fails *not* because the demandingness should be embraced, but because incorporating sensitivity to harm to animals into just-war theory—though requiring changes—need not make just combat prohibitively difficult. In so doing, we will further expand what it means (and does *not* mean) to count animals in war.

5: Taking the sting out of the demandingness objection

¹⁹ If the combatants have drones, they could order a drone-strike, which might enable them to kill the insurgent without causing unnecessary harm to animals. This would, on the account we are proposing, be preferable, and probably the best solution to the dilemma. This may therefore be an argument for the use of drones—i.e., to make military actions more proportionate, in terms of harm to both non-combatant humans and animals. Compare §§6.2–6.3.

²⁰ We thank Gabriele Badano and an anonymous reviewer for this journal for encouraging us to think about this.

In this section, we will defend our view that counting animals in war will not result in military action invariably failing tests of proportionality and necessity. We do this on three grounds. First, the epistemic demandingness is a contingent matter, and one readily remedied by rethinking the kinds of expertise present in the military. Second, killing animals is frequently going to be comparatively less serious than killing humans. And, third, the activities most likely to be harmful to animals are already ruled out by standard approaches to just-war theory.

5.1: Military expertise and training

Counting animals in war may require us to rethink the people involved in decisions about military activities, and perhaps the expertise that military commanders are expected to have. International humanitarian law—according to the First Additional Protocol to the Geneva Conventions (1977: Art. 57)—already requires that soldiers take reasonable steps to limit collateral damage. This could include deploying specialist technology or consulting experts to determine (for example) whether civilians are present in an area. The same applies when it concerns harm to animals. Counting animals in war may require that ethologists, ecologists, and other specialists are consulted prior to acting. It may also mean that such specialists are present full-time, and/or that military personnel receive training in this area. It may require that military R&D involve (anthro)zoological research. For example, militaries will need to engage in research to develop heuristics to weigh different harms to animals in the field. Such heuristics, which likely require input from ethologists, philosophers, and so forth, will be explored in greater detail in §5.2. Even if counting animals in war will not prohibit military actions by making fighting justly overly demanding, it will call on us to rethink military practices—and not just in the field.

We further observe that the epistemic element of the demandingness objection to counting animals in war raises many concerns that are ultimately no different in kind from the problems faced in applying anthropocentric accounts of proportionality and necessity. As argued in §2, assessing proportionality and necessity is an inherently uncertain affair, as it deals in probabilities and estimates. Thus—if one is happy to allow that calculating proportionality and necessity is not *already* too epistemically demanding—we should not worry about the fact that counting animals in war involves dealing in uncertainties.

One might object that while the uncertainties involved in counting humans in war and counting animals in war are not different in *kind*, they are different in *degree*, and this to such an extent that the epistemic element of the demandingness objection still holds. After all, militaries are better at assessing the likely human harms of their activities than the likely animal harms. But this, again, is down to the kinds of people present in militaries and the kinds of expertise that military commanders possess. Ecologists possess the skills to assess and estimate the kinds and numbers of animals in potential combat locations; ethologists possess the skills to predict the impact of military activities on animals' ways of life; anthrozoologists possess the skills to predict the kind and numbers of animals kept by particular human groups. Indeed, they may already have the relevant knowledge—or could quickly acquire it if militaries provided funding for studies of this sort and started hiring zoologists to advise commanders and train officers. So while there is presently a difference of degree in the levels of epistemic demandingness between counting humans and counting animals in war, this is wholly contingent, and could be remedied if militaries took their duties towards animals seriously.

5.2: Comparing human and animal lives

Counting animals in war does not mean that the deaths of most animals carry as much weight as the deaths of paradigmatic humans.²¹ As argued in §3.1, paradigmatic humans have a stronger interest in continued life than do most animals. Consequently, it is not the case that a military action intended to save x human lives is, *ceteris paribus*, disproportionate if the action is foreseen to seriously threaten $x+1$ animals. Nor do we think that a military action to save x human lives is, *ceteris paribus*, necessarily disproportionate if the action is foreseen to seriously threaten $5x$ animals. But we do hold that human and animal lives are in-principle commensurable—that is, the strength of animals’ interests in continued life can be compared to the strength of humans’ interests in continued life—meaning that there is *some level* of threat to animal life that results in a military action to save x number of humans being disproportionate or (if some less harmful alternative is available) unnecessary. As noted in §5.1, heuristics could be developed to aid these calculations, with more practical rules-of-thumb derived from these for decisions in the field. The development of these heuristics is far from a solely philosophical endeavour, and so is beyond the scope of this paper. We can, however, offer an indication of what these heuristics will look like.

First, these heuristics will offer means to assess the lives of particular animals relative to those of paradigmatic humans. This could be complicated, if necessary according to the vision of proportionality and necessity favoured, by the different “value” of lives (combatant vs. non-combatant, friendly vs. enemy, etc.). This will offer, for example, the claim that x elephant lives outweigh one human life; that y pig lives outweigh one human life; and that z sparrow lives will outweigh one human life. Presumably, $x > y > z$ —but the numbers may be very large. We will not be drawn on assigning numbers. The heuristics will need to be

²¹ The same point has been made in explorations of the justice of war *on behalf of* animals (Cochrane and Cooke 2016; Cochrane 2018: chap. 5; Hadley 2009). Due to the comparative strength of the interests of humans and animals in continued life—Alasdair Cochrane and Steve Cooke argue—“it is hard to justify threatening the lives of humans for the sake of the lives of non-human animals” (2016: 116). There are exceptions: The proportionality criterion could be met by actions that present only a small threat to human lives but act to save animals with comparably large interests in continued life, or interventions to save an extremely large number of animals.

calculated with attention to the level of personhood of the animals in question and the amount of good that can be expected in their lives, as per the discussion in §3.2. As these are *heuristics*, matters will be kept relatively simple. For example, the heuristics are unlikely to provide a way to weigh the life of one cow against another cow; though the prospects of individual cows are what matter, separating one cow from another is too fine-grained for practical decision-making in warfare. Indeed, the heuristics would likely account for only a relatively small number of “tiers” of animals. Perhaps, for the purposes of the heuristic, a cow’s interest in continued life equals that of a goat, a deer, or a sheep (cf. Kagan 2019: 117-119, 293).

Second, they will offer means to estimate how many animals will be killed as a result of particular activities. Let us offer three examples: 1) The poisoning of a waterway could be assumed to produce x amount of animal death, where x is derived by multiplying the expected poison death rate of the particular poison used by an estimate of area poisoned. 2) Small-arms combat could be assumed to produce y amount of animal death, where y is a factor of, among other things, the number of combatants engaged in combat, the kinds of weapons used, and the familiarity of the present animals with humans (as this will impact whether the animals are likely to flee or remain in the area). This is thus a more complicated calculation, but, crucially, these are all variables that are relatively easy to determine if the right experts are consulted. 3) The creation of refugees could be assumed to produce z amount of animal death, where z is derived by multiplying the expected rate of abandonment (based on analysis of previous conflicts or related anthrozoological research) by the estimated number of domesticated animals in the population. Note that x , y , and z will differ depending on, for instance, the kind of space in which fighting is taking place. Small-arms combat on tundra is less harmful for animals than small-arms combat in dense jungle, because there are fewer animals present in the former. Similarly, numbers of animals abandoned are going to

depend strongly on the demographics of the refugee population. Subsequently, the results of these calculations would then need to be multiplied, where appropriate, by a factor based on the interest in continued life of the animals in question. The result could be a crude estimate of the “human-death equivalence.”²²

This need not be as complicated as it may sound. For example, the consideration of tundra vs. jungle is unlikely to be one that even relatively senior military commanders will ever need to make, and the deaths of less sophisticated animals (unless very large numbers are involved) might be something that could be ignored when stakes are high; the deaths of a small number of fish are not going to significantly impact the proportionality of a mission saving dozens of civilians. And, naturally enough, well-designed heuristics will make things simple for commanders, and even simpler rules-of-thumb could be derived for use in the field. (Recall that we are not offering the heuristics themselves, just indicating the sorts of things they will take into account.) While *designing* the heuristics will be challenging, using them should not be. And time can be taken to design usable and realistic rules.

The third element of the heuristics will concern suffering. Calculations for suffering will look similar to those used to judge animal death, but they will not need to be combined with information about the complexity of the animals in question—it is much easier for animal suffering to outweigh human suffering than it is for animal death to outweigh human death. Thus, these heuristics will strongly counsel against actions that will result in large

²² So, to take the first case, a hypothetical calculation might look something like this: Of a given river, we can know that there are approximately 100 fish per 500 metre stretch of river. There are also approximately fifty grazing mammals who drink from the river. We know of the poison we intend to use that it has roughly a 100% lethality for small animals, such as fish, and a 60% lethality for medium-sized animals, such as grazing mammals. Thus in poisoning an approximately 500 metre stretch of river, we can reasonably expect the deaths of 100 fish and thirty grazing mammals. We have said that we will not be drawn on assigning any numbers, but let us imagine, for the sake of argument, that the heuristic puts the harm of death for a typical fish is approximately 0.01 that of a paradigmatic human, and the harm of death of a typical grazing mammal is approximately 0.1 that of a typical human. (These numbers are inspired by the kinds of numbers used in Kagan 2019 for a different but loosely related purpose. Readers are invited to substitute other numbers or animals as appropriate, and we reiterate that it would not be the job of philosophers to assign these numbers in any case.) Based on these stipulated numbers, we can calculate that poisoning a 500 metre stretch of the river results in deaths roughly equivalent to $(100 \times 0.01) + (30 \times 0.1) = 4$ humans. Different numbers assigned to grazing mammal and fish lives, of course, would result in very different numbers. In the field, commanders could simply assume that poisoning 500m of river = four human deaths.

amounts of animal suffering, while not necessarily offering the same strong counsel against actions that will result in large amounts of animal death. As per the discussion in §3.2, this is appropriate.

5.3: Proportionality, necessity, and discrimination

As noted in §1, animals themselves are rarely the intended target of military interventions. Consequently, many of those military activities that are most likely to harm animals will be the kind of military activities that, at the same time, cause significant (side-effect) harm to human non-combatants. The just-war criterion of *discrimination* requires that combatants only attack military targets, and avoid attacks that are not aimed at a specific military target, cannot be aimed at a specific military target, or have effects that cannot be limited to military targets.²³ The kinds of military activities most likely to harm animals are thus *already* open to critique for being indiscriminate. Discriminate methods of warfare are better able to restrict harm to intended targets and limit spillover harms to human non-combatants *and* animals. For instance, chemical or biological warfare could affect very large numbers of people and animals, and, once begun, is very difficult to control. Carpet-bombing and nuclear weapons are highly indiscriminate, likely to directly harm humans and animals, combatants and non-combatants alike. Many booby-traps are unable to discriminate between humans and animals, just as they are unable to discriminate between combatants and non-combatants.²⁴ Thus, highly discriminate methods of warfare are to be preferred on both anthropocentric and

²³ This is also the legal definition of indiscriminate attacks: indiscriminate attacks are “of a nature to strike military objectives and civilians or civilian objects without distinction” (First Additional Protocol, 1977: Art. 51). In addition, as noted above, Article 57 of the First Additional Protocol also requires that foreseeable side-effect harm is limited as much as possible, even if the attack itself is not classed as indiscriminate. This second, precautionary requirement is also accepted by many just-war theorists. Michael Walzer (2006), for instance, argues in defence of a “Double Intention” requirement, which requires combatants to take measures to avoid foreseeable harm to non-combatants in addition to requiring them not to intend harm to non-combatants. For a counterargument to Walzer’s position, see Abbate 2014. For the view that Walzer’s position is not strict enough, see Schwenkenbecher 2014.

²⁴ In fact, in some of its only mentions of animals, international humanitarian law already prohibits the use of animals *as* booby traps. These prohibitions are intended to protect humans, but clearly protect animals as well (Nowrot 2015: 135–136).

animal-sensitive proportionality and necessity grounds, as they are better able to restrict harm to intended targets and limit spillover harms to human non-combatants *and* animals.

6: Case studies

We shall close by demonstrating that counting animals in war, despite not being overly demanding, will change the assessment of the proportionality and necessity of military activities. Crucially, this change will not always be a “raising of the bar” in the sense that military actions will be more difficult to justify. Counting animals in war can also suggest changes in tactics, or even make action *easier* to justify.

6.1: Case study 1: Forest

A military force is aware that poorly equipped insurgents hidden somewhere in an area of remote rainforest are moderately likely to attack to attack their base. The result of such an attack would likely be the deaths of the insurgents as well as risk of death and injury to a small number of the soldiers staffing the base. A similar outcome would likely result from mobilising the soldiers to pre-emptively attack the insurgents: the death of the insurgents, and risk of death and injury to a small number of soldiers. Assume that the military force has concluded that a series of bombardments, which would likely kill the insurgents and devastate the rainforest in the targeted area, would be a viable way to prevent such an attack without any risk to their own soldiers.²⁵

On an anthropocentric account of proportionality, the question would be one of weighing two possibilities. The first is the expected deaths of the insurgents and the expected indirect harms to humans caused by the devastation of remote rainforest—rainforests are globally important carbon sinks, meaning their destruction can make a serious contribution to

²⁵ Forests become targets in wars against guerrilla forces, with government militaries clearing forest ground or bombarding rebels in forests and thus seriously impacting ecosystems. Vivid examples are provided by the use of Agent Orange, napalm, and “Daisy Cutter” bombs in Vietnam (Ramanathapillai 2013: 105–106).

harmful global warming. This is what will come about if the soldiers decide to bomb the forest. The second is the moderate (because there may be no attack at all) risk of the deaths of the insurgents and very (there may be no attack) small risk of injury and death for the soldiers. This would be the result if they do nothing. Let us imagine that the harm of the second slightly outweighs the harm of the first: the risk to the soldiers is sufficient to impose near-certain death on the insurgents and impose indirect harm on other humans. This would mean that bombardment could be proportionate on anthropocentric accounts.

Once we count animals, however, the destruction becomes much harder to justify. In addition to the harms to humans—direct harm to insurgents, indirect harm to other humans—bombing will result in the immediate death and suffering of animals caught up in the destruction, as well as lingering death and suffering as a result of the destruction of habitat. (And animals, like humans, are harmed by climate change.) Thus, animals—likely large numbers of them—will have their most important interests thwarted. This thwarting of interests, we contend, would be enough to outweigh the human interests that favour bombardment. The question would cease to be a weighing of highly likely insurgent deaths and slight indirect human harm vs. moderately likely insurgent deaths and not very likely soldier death and suffering, on which the latter involves the slightly greater setting back of interests. It would become a comparison of highly likely insurgent deaths, slight indirect human and animal harm, *and very high levels of animal death, suffering, and habitat destruction* (if they bomb the insurgents) vs. moderately likely insurgent deaths and not very likely soldier death and suffering (if they wait for the insurgents to attack). Here, it seems, the former option contains the greater setting back of interests, even if many of those interests happen not to be human interests.

We thus conclude that while anthropocentric accounts of proportionality will likely permit bombing in *Forest*, animal-sensitive accounts will not. Instead, combatants will be

required to shoulder risks—either because they have to attack the insurgents on foot, or, more likely, they have to risk the insurgents attacking the base—in order to reduce the impact of their fighting on animals. What this demonstrates is that counting animals in war will sometimes result in the justificatory bar being raised, and otherwise acceptable tactics being ruled out.

6.2: Case study 2: Penguins

A military wishes to deter invasion of an island inhabited by humans and penguins.²⁶ Two realistic options present themselves, both equal when it comes to cost, effectiveness, and other relevant factors. One will see fortification of an area of coast, making landing impossible. The other will see that area of coast covered by mines, meaning that anyone landing there will be killed. Though human deaths are relatively unlikely if mines are used—assume clear signposting—risk of death is foreseen. Mines, however, will result in little-to-no harm to penguins. This is because these birds are too light to trigger the explosives, and so can freely walk across minefields. The option of fortifications, though not threatening any humans, will be catastrophic for penguins, as they will no longer be able to traverse areas between their breeding grounds and their hunting grounds. This will see penguins starving to death when unable to fish, and drowning when unable to land. There is thus a genuine conflict between human and animal interests: human interests favour fortification, penguin interests favour mines.

Anthropocentric accounts of necessity would favour fortification, as this is a form of deterrence that will not risk harm to humans. On our animal-sensitive account, however, a different outcome will be favoured. It *may* be *proportionate* to cause this level of penguin death and suffering to prevent an invasion of the island *if no other option exists*, but, for

²⁶ This example is inspired by the case of penguins on minefields on the Falkland Islands/Islas Malvinas. For discussion and a host of similar cases of animals living successfully in (de)militarised areas, see Pearl 2006.

fortifications to be *necessary*, the option has to be compared to other available forms of defence. As argued, the interests of animals—including penguins—in continued life is far lower than the interests of paradigmatic humans in continued life. Thus, it will take a comparatively high number of foreseen penguin deaths, *ceteris paribus*, to outweigh even one possible human death. Nonetheless, it could be that this number of penguins *are* foreseen to die, and thus the use of fortifications is unjustified. What is more, the deaths of these penguins will contain much suffering: their lives are disrupted, and they face death by starvation. While we have argued that animals' interests in continued life are typically lower than humans', we have not argued that animals' interests in avoiding suffering are lower than humans'. The harms faced by the penguins cannot be dismissed lightly.

We thus conclude that, while anthropocentric approaches to necessity will favour the use of fortifications in *Penguins*, animal-sensitive accounts will favour the use of mines. Consequently, counting animals in war will sometimes result in surprising—even, conventionally, questionable—tactics being justified over putatively innocuous approaches.

6.3: Case study 3: Gas

State A is contemplating a humanitarian intervention to stop State B from engaging in relatively indiscriminate gas-based attacks targeting B's rural populations. Given the military, political, and social situation in the country, humanitarian intervention risks protracted conflict between A and B's forces, likely spreading to include urban environments.

On standard accounts of proportionality, the question would be one of weighing the anticipated harms of the protracted conflict (mediated by the anticipated chance of such a conflict occurring) against the anticipated harms of the ongoing gas attacks. Let us imagine that—though it is a close-run thing—in this case, the anticipated harm to humans through protracted infantry clashes outweighs the anticipated harms caused by continued gas attacks.

Contrary to the expectations of our imagined critics, we contend that, in this case, including animals in accounts of proportionality may make military intervention *more* likely to be proportionate. We say this because the anticipated protracted clashes risk relatively little harm to animals. (Though animals may occasionally be caught in crossfire, small-arms combat is not something particularly harmful to them.) On the other hand, the actions that the humanitarians seek to avert—the use of gas in rural areas—will have a very high impact on animals, due to the attacks’ relatively indiscriminate nature. Rural populations are likely to live among and around many animals. These animals will be seriously adversely affected by the gas attacks. If we take harms to animals likely to be *caused* by warfare into account when calculating proportionality and necessity, we should also, all else equal, take harms to animals likely to be *averted* by war into account in these calculations.²⁷

While anthropocentric accounts of proportionality and necessity speak against it, we conclude that, in *Gas*, an animal-sensitive account will favour intervention. This demonstrates that counting animals in war can make war *easier* to justify.

7: Concluding remarks

In this paper, we have shown that, first, the proportionality and necessity requirements in just-war theory can be reformulated to consider harm to animals, and, second, that such a reformulation does not mean that the requirements become overly demanding. Animal-sensitive accounts of proportionality and necessity might sometimes require us to change our tactics, or reconsider some military actions that might be considered proportionate on a human-centred account of proportionality. On the other hand, counting animals in war might, in some situations, make it *easier* to justify military action.

²⁷ To reiterate what was said in §1, some animal ethicists have already explored the case for waging war to avert harms *solely* to animals—but we make no commitments on the subject here.

The enquiry offered by this paper opens the door to two further research areas. The first concerns just-war theory beyond necessity and proportionality. As noted in §1, a fully articulated animal-inclusive just-war theory will have to consider other areas of just-war theory, too. We have already noted, for instance, that some authors have considered whether harm to animals can constitute a *just cause* for war, and a further elaboration on this, and other *ad bellum* criteria, would be an important element of any animal-inclusive just-war theory. The second new research area concerns developing the practical applicability of our approach. We acknowledge that we have only tested the animal-inclusive approach in a small number of hypothetical cases. Further practical development would entail utilising the framework with close attention to the contingent details of real-world cases—aiming to provide concrete advice—or developing the kinds of heuristics and institutional proposals pointed towards in §§5.1–5.2. It should be clear, however, that such practical developments would require skills and knowledge that may not be possessed by philosophers. It would thus need to be a genuinely interdisciplinary project.

This paper—in many ways, the first of its kind—shows that there is rich potential for mutually enlightening exchange between just-war theory and animal ethics. Just-war theorists should not fear their theoretical apparatus being upturned by the careful consideration of the inclusion of animals, and animal ethicists need not fear that a consideration of just-war theory must lead to unpopular conclusions about violence in defence of animals. Animal ethicists should be ready to explore harms to animals in all contemporary environments, while just-war theorists should be ready to explore the questions raised by the continued expansion of our moral horizons.²⁸

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