Virtual wildlife tourism: an ideal form of ecotourism?

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ABSTRACT
Wildlife populations are plummeting worldwide and captivity, of at least some, species is increasingly being challenged from an ethical perspective. When captivity serves human entertainment, poor treatment as well as unequal power-relationships are problematic. Particularly for wildlife ecotourism then, we ask: is the future virtual? Taking a posthumanist approach, this conceptual manuscript considers whether presenting technologically created images to tourists can equitably foreground non-human rights, welfare, and agency. We highlight examples of tourism involving wildlife in virtual settings to explore possible advantages and disadvantages of this type of experience for human and non-human stakeholders. This enables us to explore how the virtual experience fits with the concept of ecotourism. The argument is made that the ideals of wildlife ecotourism can best, and perhaps only, be met virtually – but only if we use images of non-human animals who are represented with dignity and respect.

Introduction

Humans' entertainment-oriented interest in wildlife tourism makes it very challenging to arrive at a type of encounter that is ethically defensible (Burns & Benz-Schwarzburg, 2021; Burns, 2015). Thomsen et al.'s (2021) suggestion that wildlife ecotourism should avoid consumptive activities causing non-human animal (for brevity's sake, henceforth 'animals') death or abuse is a step in the right direction; however, this seems to follow a rather narrow idea of abuse as obvious physical harm. Consideration of ethics and harm raises the question of whether activities that confine wildlife and force it to perform for tourist entertainment can be truly considered as ecotourism in all cases, even if the activity does not constitute a case of animal death or physical abuse in welfare-terms.

Ideas of rights and welfare broadly divide the field of animal ethics (e.g. Regan, 2001, 2004; Singer, 1975, 2005). Based on the notion of intrinsic, or inherent, value in individual animals, animal rights advocates afford animals the same rights as humans and

consider animal species equally deserving of moral consideration and respect (Fennell, 2015, p. 29). In contrast, animal welfare ethics accepts prioritisation of human interests over those of non-human animals (Garner, 1993) provided that the quality of life of the animal is taken into account (Bekoff & Nystrom, 2004). On this basis,

> since an animal rights perspective might argue that we should not hold wildlife captive under any circumstances, or undertake any activities in non-captive settings that disturb the animals, an argument might be advanced that wildlife tourism, as an essentially hedonistic human activity, should not exist in any form. (Burns, 2017, p. 215)

However, in virtual wildlife tourism (VWT) wildlife is not captive nor is it disturbed in a non-captive setting. In this sense, it offers a radical change to traditional wildlife tourism.

Mistreatment of animals in tourism exists because tourists, for a range of reasons, tolerate it (Burns, 2022). If we cannot always change tourists' attitudes and behaviours to overcome this problem, then perhaps we can change tourism by presenting animals virtually. Regardless of whether the tourist cares about, or is cognisant of, the conditions concerning animal welfare, welfare is still assured in VWT. Or is it?

Here, we discuss animal tourism in contexts where wildlife is the focus. We explore the relationship between ecotourism and wildlife tourism – embedded in the concept of wildlife ecotourism. We start with the premise that wildlife ecotourism may be no better than other forms of wildlife tourism in the sense that even ventures that originate from good intentions can result in unintentional negative consequences (Burns, 2022). Thus, when conceptualizing ecotourism, we need to ensure that no such unintentional harm is caused.

Susen (2021, p. 2) defines posthumanism as a 'systematic attempt to challenge humanist assumptions underlying the construction of "the human"'. This way of thinking challenges the divide between humans and other animals that situates humans as superior, and in doing so reminds us that animals have a different way of being in the world that should not be exploited (Wolfe, 2010). By taking a posthumanist approach, this conceptual paper allows us to examine how new forms of wildlife tourism can be ecotourism against a broadened non-harm framework. Specifically, we discuss whether virtual and augmented reality settings can equitably foreground animal welfare and animal agency and can address concerns about harm to wildlife sufficient to be correctly labelled as ecotourism.

From wildlife tourism to wildlife ecotourism

Wildlife tourism, as the wording suggests, refers to tourism that involves wild animals. Those animals may be in captive settings such as zoos or free-ranging such as in national parks. They may be deliberately targeted as the central tourism attraction or accidentally sighted. The tourism may be consumptive, resulting in the deliberate death of the animal through activities such as hunting and fishing, or non-consumptive (Burns, 2017). The very wide range of ways humans engage with wildlife in tourism results in differing impacts on them (some of which are outlined in Burns, 2022), many of which are exploitative of the animals by being centred on meeting the desires of the humans (Burns & Benz-Schwarzburg, 2021).

The concept of wildlife tourism and its definition have a lengthy history in academic literature (e.g. Higginbottom, 2004; Shackley, 1996). More recently, at least in terms of

nomenclature, the notion of wildlife tourism has been coupled with ecotourism. Where one may previously have been described as a subset of the other (e.g. Burns et al., 2011; Reynolds & Braithwaite, 2001), the term wildlife ecotourism has now arisen. From this, it could be assumed that the people who engage in wildlife ecotourism are ecotourists. To understand this concept, and the people involved, it is important to first understand the ideals of ecotourism.

The many definitions of ecotourism 'all adhere to at least a principle of making tourism support an array of social and environmental goals' (Stronza et al., 2022, p. 372). These goals stem from a widely cited definition adopted by the International Eco-tourism Society: 'responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education' (TIES, 2021). The definition, although mentioning the environment before people, is anthropo-centric and does not specifically mention animals or wildlife. We are left to assume their inclusion, if at all, is as part of the environment. In this conception of ecotourism, human, rather than animal, rights, welfare and agency are foregrounded. We know that the modern Western attitude toward nature has a deeply anthropocentric bias (Washington, 2018, p. 57) and, by virtue of their placement as part of the environment, this is extended to wildlife. Thus, in traditional definitions of ecotourism, we see little room for posthu-manism ideology that seeks to erase the human-animal divide (Cohen, 2019).

Ecotourism (ideally, an environmentally friendly, or sound, form of tourism) is viewed as highly compatible with conservation objectives, particularly in terms of conservation education, despite a wealth of academic literature demonstrating that it often has negative or negligible conservation effects (see Stronza et al. (2019) for a review of this literature). The positive view is based on the premise that the visitor to the natural world, the ecotourist, gains an appreciation and understanding of nature which can in turn increase their financial and political support for conservation (Fennell, 2020). The nature, and natural world, that is central to ecotourism incorporates wildlife and their habitat in captive and non-captive settings.

Continuing the assumption that ecotourism definitions incorporate considerations of wildlife under the label of environment, benefits potentially flow to wildlife from financial gains and the positive influence on visitor conservation values that ecotourism ideally fosters. For example, Thapa et al. (2017, p. 171) identified 'a significant relation-ship between wildlife ecotourism and tiger conservation' in Nepal and Larm et al.'s (2018) survey of visitors in Sweden revealed positive conservation contributions from Arctic fox tourism. However, moral concern about the use of animals in an industry that should be focussed on their protection is increasing (Taylor et al., 2020), prompting our call for wildlife ecotourism to follow some additional ethical aspirations, most pro-minently a broadened non-harm ideal that is central to posthumanism.

What makes wildlife tourism a form of ecotourism? One definition distinguishes wild-life ecotourism from other forms of wildlife tourism by claiming the former only incor-porates practices that involve non-consumptive activities; that is, those that do not involve animal death or abuse (Thomsen et al., 2021). Death and abuse, as they occur for example in trophy hunting, are thus obviously considered forms of problematic harm, an assumption that aligns with welfare ethics (Garner, 1993) as well as stronger ethical accounts (Ghasemi, 2021). It is a warranted and strong starting point to refuse both, deliberate animal death and deliberate animal abuse, for ecotourism. But

defining the scope of harm possibly done to animals in ecotourism in purely welfare-oriented terms might also be too simplistic. We see some reasons for assuming so.

Firstly, wildlife tourism can result in animal death that is not deliberate. Pathogen transfer from humans to mountain gorillas (Hanes et al., 2018) and great apes (Dunay et al., 2018) is a contemporary example of this. Wildlife tourism can also involve abuse that is perhaps not seen or known about by the tourist. Visitors to elephant tourism venues in Thailand, for example, ride elephants and watch them perform tricks, such as painting and playing soccer, which requires them to perform unnatural behaviours. This requires training, and most elephants are trained using negative reinforcement techniques. For example, during the traditional *phajaan* ceremony, the young elephant is restrained in a small crush, experiencing pain, and food and water deprivation for multiple days, a process which is repeated until the elephant is submissive to its mahout (Kontogeorgopoulos, 2019). Training occurs before the elephants are displayed for tourists, yet abusive control often occurs in front of them. Increasing concern about this is evident on Tripadvisor, for example, where negative reviews about venues document incidents in which handlers were seen physically mistreating the elephants (Flower et al., forthcoming).

Secondly, if we narrowly define abuse as obvious physical harm in welfare terms, then we ignore other potential forms of harm. These could be the kinds of harm that cause psychological damage, such as impairing the socio-emotional development of animals, which in turn indirectly impairs physical welfare because animals lacking certain social skills, for example, may act aggressively towards conspecifics. We can see such harm occur in the case of captive elephants demonstrating symptoms of Post-Traumatic Stress Disorder (Rizzolo & Bradshaw, 2016). Other possible forms of harm may have no observable effect on subjective, experiential well-being but still constitute an objective wrong done to the animals, such as violations of their dignity (Hacker-Wright, 2007; Cataldi, 2002). In addition, the harm done to the human-animal relationship could arise whenever tourists adopt a perception of animals and their relation with them that is ethically problematic, for example, because this perception is utterly anthropocentric or contrasts with conservation aims (see Burns, 2015 for the perception of animals as objects in tourism and Moorhouse et al., 2017 on how otherwise pro-wildlife travellers often leave their ethics at home). All these sorts of harm may be harder to define and harder to immediately recognise and quantify, but require consideration if wildlife ecotourism is to be ethically defensible.

Concern for harm that is not physical or welfare centred is especially relevant when it comes to the role of captive animals in wildlife tourism. Here, we find many instances of animal use that have a welfare aspect but might go beyond welfare. While training an animal with abusive methods like punishment is clearly a welfare issue, performing such trained behaviour often seems to the tourists as harmless and funny. But there are ethically problematic components beyond welfare in the performances of polar bears singing into microphones or costumed monkeys riding bicycles for tourism entertainment.

Thus, the question arises of whether any activity that confines wildlife and forces it to perform for tourist entertainment can be truly considered as ecotourism. Taking a post-humanist approach to examining how wildlife tourism can be ecotourism, encourages us to move beyond the base of tourism solely for human pleasure. It encourages us to move

consideration of the animal and the human-animal relationship to a central place and to explore what, if any, forms of tourism might be best from both perspectives. Virtual wildlife tourism is an interesting case study for such a posthumanist approach because it removes the live animal and replaces it with a technologically created representation. Thus, the case can show to what extent ethical concerns remain, even if individual welfare level is no longer a problem.

Virtual ecotourism

Bristow (1999, p. 219) may have been the first to question whether virtual tourism is 'the ultimate ecotourism?'. Writing when the Internet was a new phenomenon, he proposed that the ability to gather pre-trip knowledge about destinations by 'online surfing' was important for ecotourism. Ideally, the provision of inexpensive access to a previously unimaginable wealth of information could empower visitors to natural areas to be more responsible. However, his scepticism about the acceptance and uptake of this technology led him to suggest that 'until the technology can provide the full range of sensory experiences … it will not replace actual field experiences' (1999, p. 224). Vastly different virtual experiences have proliferated since then and Bristow's conclusion, that 'the day that all this can be experienced virtually will come' (1999, p. 224), has proved prophetic. Indeed, this new age of technological disruption is already changing how we consume touristic experiences (Fennell, 2021).

The virtual in ecotourism has changed significantly since Bristow's (1999) paper in which his pondering on the impact of virtual experiences on ecotourism centred mainly on the possible effects of the emerging Internet. Ours is necessarily quite different. The COVID-19 pandemic increased the online exposure of many wildlife tourism sites, with zoos for example turning to virtual tours to market their wares to future visitors and to provide a visual, though distanced, the experience of real animals. The virtual and augmented reality tourism we explore however is unreal – the presentation of wildlife as images, designed to entertain, that does not include the use of animals that are alive and real. The virtual explored here is that offered by virtual or augmented reality. Virtual reality (VR) involves a headset or goggles to 'transport' the user to another place, based on a real location or an imagined world. Augmented reality (AR) is a type of VR that incorporates virtual elements with those of the physical world and, in doing so offers 'new ways of experiencing destinations and attractions without the need for tourists to engage directly with others' (Markwell, 2020). Throughout this paper, we will continue to discuss both VR and AR under the label of virtual tourism.

Our question then is: by removing the direct engagement with real animals, do we create an experience for both the people and the wildlife that is less ethically problematic and aligns better with the ideals of ecotourism? Given the broad range of welfare criticism on the use of animals in all kinds of wildlife tourism, and given the non-harm ideal of wildlife ecotourism specifically, virtual tourism seems a step forward: indeed, it seems the crucial step to avoid physical abuse as real animals are no longer involved. However, to explore what virtual experiences can offer for wildlife ecotourism, further investigation is required into whether other harms, such as denial of agency, are involved.

Virtual wildlife tourism

In our exploration of virtual wildlife tourism (VWT), we are not talking about films of real animals used as marketing tools to entice people to travel to destinations to experience real animals. We are also not talking about live streams of animals in zoos or non-captive settings. These too have existed for some time and are still there for us to explore using technological interfaces. Wiltshire's Salisbury Cathedral in the UK, for example, hosts an annual live stream of its resident nesting Peregrine Falcons (www.salisburycathedral.org.uk/visit-what-see/peregrine-falcons-live-stream) and the Mpala Research Centre in Kenya hosts a livecam at a nearby waterhole (https://explore.org/livecams/african-wildlife/african-river-wildlife-camera). Both these have been operating for almost ten years, but the number of sites like them proliferated with the start of the COVID-19 pandemic when fewer people could travel but the desire to connect with nature clearly remained. While live streams through webcams have become common place, new innovations are increasingly added to the way we view wildlife from our screens. habitatXR, for example, has produced award-winning VR and AR experiences in their mission to 'reconnect people to nature using immersive technology' (Habitat, 2021 http://www.habitatxr.com). Based in Africa, their series about long animal journeys (e.g. wildebeest and falcons), *Exodus: The Great Migration*, claims to be the world's first narrative VR wildlife documentary.

Use of hidden cameras in live streams that do not disturb the natural behaviour of the animals has become increasingly common in wildlife photography. However, this still relies on the use of animals for human pleasure. Whilst not obviously disturbing the animals, an argument could be made that the animals' privacy is violated by spying on them in a manner that would be considered ethically unacceptable if it were to occur with humans as the subjects (Pepper, 2020). A privacy violation is typically considered morally wrong even if the person is unaware that they have been spied upon, such as when hidden cameras are set up to observe others without their consent. Thus, whether the animals know about the intrusion is thus not the key question. They can still be harmed. Pepper (2020, pp. 1–2) argues, based on research, that non-human animals share with humans a 'strong interests in solitude, intimacy and concealment'. When visually exposed they lose control over how they present themselves, as well as their space and their things, to others (Pepper, 2020). The argument, therefore, goes beyond the mere welfare impact of observation on the animals. Visual exposure is a problem because it robs someone of their privacy and, as such, is a means of control. In general, the link between gaze, power, and objectification of animals seems problematic and has been extensively discussed in animal ethics (Acampora, 2005; Beardsworth & Bryman, 2001; Gruen, 2014; Honneth, 2008; Malamud, 2016; Nussbaum, 1995). Here too then, even in virtual form, a type of harm potentially exists in privacy violation.

In our quest for an ethically sound form of wildlife ecotourism that embraces posthumanism, we focus on tourism attractions that do not include live animals. We explore whether VWT, offering activities in which the animal is not real and therefore is not killed for display nor abused, is a better fit with the concept of wildlife ecotourism. A market for virtual tourism exists for persons with accessibility restrictions to non-virtual experiences (Fennell, 2021); however, this type of tourism may also have (necessary) wider appeal because of the global reduction in wildlife populations during the

current 6th mass extinction phase (Steffen et al., 2011). Population sizes of mammals, birds, amphibians, reptiles, and fish decreased by an average of 69% between 1970 and 2016 (WWF, 2022), and there is little to suggest this trajectory will change direction. In the future, our only option may be to experience wildlife virtually.

So, what types of experiences are we talking about? To date, tourism experiences involving non-real wildlife are few in number, but appear to be growing. The German Circus Roncalli, for example, recently experimented with holographic images of animals to replace real ones (Burns & Benz-Schwarzburg, 2021). Here, the tourists still enter a real circus tent and see performances by real people but the performances by some animals – elephants, horses, and goldfish – are holograms. For display in the marine park entertainment industry, 'real-time animatronic' dolphins are being developed to substitute for captive ones (Edge Innovations, 2022). A 'pop-up' zoo without animals, using only AR images, trialled in Korea (KoreaBizWire, 2020) and holographic dinosaur adventures are offered in shopping malls in Australia (Holoverse, 2022). These all require the viewer to travel to a destination for the experience. Others come to you. Planet Zoo (Frontier, 2022), for example, is an online platform that allows the gamer to create their own zoo on a computer in their home and Base Hologram (2022) purports to offer 'the first dinosaur travelling exhibit ever.'

These virtual experiences are largely unchartered grounds from an ethical perspective, and we run the risk that technological development and market interests overtake ethical discussion. In light of the likely increase of virtual encounters with animals, we clearly need to further explore their ethical challenges. We propose the application of a posthumanist framework for evaluating possible kinds of harm in VWT. Such an evaluation can substantially improve our understanding of the scope of harms we face in these contexts and thus help to specify whether VWT matches the aspirations of ecotourism.

Introducing a posthumanist approach to the discussion of virtual wildlife tourism

The story of the human-animal relationship is a story of separating humans from animals. It is built on the formula that the human is 'an animal + X': an animal with rationality, that uses its hands, possesses language and lives in a politically organized community (Aristotle), an animal that has a soul (Descartes), or autonomy (Kant), that has a concept of death (Hölderlin), can adapt to everything (Dostojewski), is extraordinarily flexible (Nietzsche), has an eccentric positioning in the world (Plessner) or that has a world at all (Heidegger) (Wild, 2008, p. 26). By referring to such, usually highly intellectualized, capacities, the notion of 'the human' secures exceptional ontological value for humans through those capacities that animals supposedly lack. But more than fifty years of cognitive ethology have provided in-depth insight into the minds and fascinating capacities of many animal species. It seems we can no longer easily rely on 'the human' as an autonomous, rational being that is so different from other animals that we are allowed to do things to 'them' we would never do to our own kind (Benz-Schwarzburg, 2020).

Posthumanism, as exemplified by the writings of Cary Wolfe (2010), Donna Haraway (2008) and Jacques Derrida (2002), is a philosophical approach that fundamentally questions the human-animal divide and 'should be taken as 'after humanism' rather than the-

ism form of a substantive being called "the posthuman"' (Pollock, 2011, p. 235). Although Haraway's multispecies ethnography has been criticised for its apolitical stance (see Kopina, 2018), these works are important because some philosophical attempts to understand the posthuman as transhuman – in an attitude of techno-ecstasy – lead to an intensification of humanism as well as to major concerns by animal ethicists (Ferrari, 2015). Posthumanists like Wolfe aim to support other ethicists criticisms of anthropocentrism and their claim for a stronger moral status of animals. However, for that they find it necessary to deconstruct the human/animal distinction from the outset and to avoid a (re)construction of 'a world where humans are [again] special and on top' (Pollock, 2011, p. 240). They also object to any argumentation in favour of animal equality or animal rights through traditional humanist categories like rationality (Pollock, 2011, p. 238). This puts a heavy burden on posthumanism and the concepts it is searching for. We need to find a way of thinking about animals, of bringing them into the picture that is centrally interested in the animals and in their ways of life, their feelings, desires, needs, thoughts, and interests. Can VWT do this?

For our analysis, we understand posthumanism in its core as an endeavour to turn to the animal being and her perspective. Animals are not *like* us and they are not *for* us. Immediately this ethical perspective contrasts, perhaps irrevocably, with the practice of tourism that is based on meeting human desires and consequently wildlife tourism which is predicated on presenting animals to us. Posthumanism reminds us that animals have different ways of being in the world that deserve to be respected and not exploited. A posthumanist approach, thus, is predominantly one that does not situate humans in a superior position over other animals, and instead 'challenges the ontological and ethical divide between humans and non-humans that is a linchpin of philosophical humanism' (Wolfe, 2010, p. 8). We take it that any instance of human domination over animals is ultimately only conceivable within the horizon of such a distinction between human and animal.

From this basic understanding of the core of posthumanism, it follows that animals should be respected in what constitutes their own, not our human centred, idea of agency. As subjects with their own standing, feelings, interests, desires, and alike they should not be perceived of and treated as mere objects or commodities. Processes of domination, of objectification and commodification, degrade animals in comparison to humans. They render animals into something less than a human subject, and are thus utterly anthropocentric, but also rob them of a subjecthood of their own. If we understand posthumanism in animal ethics as an endeavour to dissolve oppression-based human-animal relationships and to adhere to the animal as a being with her own valuable subjecthood (no matter how differently that might be from our human subjecthood) and agency, we can use this approach to assess VWT and the actual interactions between tourists and animals.

Our evaluation then boils down to exploring whether animals in VWT are presented or represented as the kind of subjects they are or in ways that serve human interests in tourism, mainly the interest in entertainment. Any instance of exploitation and domination, of degradation, objectification and commodification will ring an alarm bell. We see this investigation as a starting point for an ethical evaluation of VWT and deliberately keep philosophical vocabulary basic.

Evaluation of virtual wildlife tourism through a posthumanist lens

Here, we turn to a brief discussion highlighting some of the possible advantages and disadvantages, from a posthumanist perspective, of VWT. For the wildlife, there are many clear advantages of tourism that represent them being virtual. In VWT, no real animals are held captive, they are no longer 'forced to live in places and under conditions that do not meet their innate needs' (Burns, 2022, p. 321), and thus welfare issues associated with this type of setting are removed. Similarly, in VWT, captive animals are no longer labourers forced to entertain humans (Dashper, 2020). In virtual settings then, welfare issues associated with captivity appear to vanish.

Aside from benefits for wildlife in captive settings, there are also benefits in non-captive settings from moving to an industry that contains more virtual experiences. In a VWT setting, humans do not venture into wildlife habitat, and this has several implications. Most notably, human intrusion is not damaging that habitat and the wildlife is not at risk of death or physical harm, for example, from being hit by tourist vehicles (Tablado & D'Amico, 2017). Much has been written about the environmental impacts of tourism and the consequential degradation, and even loss, of critical wildlife habitats (Newsome, 2021; Shannon et al., 2017). As well as disruption to habitat, the presence of humans disturbs the natural behaviour of wildlife. Research conducted by biologists reveals, for example, that habituation of animals to human presence increases their likelihood of being caught by hunters, preyed on by other species, and not maintaining overall fitness in a population (Beale & Monaghan, 2004; Frid & Dill, 2002). With VWT, these negative impacts are averted. Additionally, if humans do not come into contact with real animals there is no chance of zooanthroponoses (reverse zoonoses), in which humans transfer disease to animals, occurring.

Regulation around wildlife tourism has been problematic. As no global body exists with responsibility for this role, legal control usually lies at national and local levels where policies, if they exist, vary widely (Moorhouse et al., 2017). Not involving real animals removes many of the complexities of policy issues regarding this type of industry, such as what conditions are appropriate for the confinement of animals in tourism contexts.

All cases of classical wildlife ecotourism are not uniformly problematic. As described in the discussion about ideal ecotourism, tourism based on encounters with real wildlife has the potential to create beneficial effects for the animals and their habitat by contributing to environmental protection and conservation. It can be a vehicle to increase awareness of environmental values and serve as a tool to finance the protection of natural areas. If VWT can achieve the same positive outcomes, if the virtual experience still 'enables people to learn about the species and thus, ideally, fosters a desire to protect it' (Burns, 2022, p. 322), then an indirect advantage remains. We use 'if' here deliberately because these outcomes require investigation.

There may be advantages to enabling tourist-wildlife contact in wildlife rehabilitation centres, for example, that could exist alongside VWT, provided the encounter fulfils some conditions:

(1) Captivity has to be in the clear and immediate interest of the animals. For example, in the case **of rescued animals that would not survive if released.**

(2) The aim of displaying the animals has to lie in conservation. The centres carry the burden of proof for this and hold responsibility for carefully designing the display of the animals, so that it actually and demonstrably raises and increases the visitors' awareness for conservation. They also need to know that entertainment-orientated display and anthropomorphised animals contradict conservation messages and can distort visitor's conservation awareness or increase consumptive views (Rizzolo, 2021; Schroepfer et al., 2011).

(3) The way the animals are displayed or performed for visitors must preserve animal dignity and be in line with the animals' own agency, interests, and needs. This not only rules out undignifying shows but also questions shows in general as performance for tourist entertainment orientates on the visitors' aesthetical and consumptive preferences, not on the animals'. While we might have, ethically speaking, a duty to care for rescued but un-releasable wildlife, a right to use them in specific ways for the purposes of others does not automatically follow. The fact that ecotourism facilities currently gain funding for conservation by displaying and showcasing animals does not render this strategy into a just one. A descriptive reality does not tell us anything about a normative justification other than that we need to look for alternatives. VWT might be one part of the puzzle.

As we face further wildlife extinctions, with virtual portrayal perhaps the only future for encounters with these species, we need to know whether it will satisfy the tourist. A posthumanist approach centralises the experience of the animal, rather than the human, which is why we discussed possible benefits for the wildlife first. However, for the tourism to remain viable and in turn offer benefits for the wildlife, then we need to also consider what it offers for humans.

Perhaps most obviously, humans cannot be directly physically harmed by animals in VWT. Although rare, humans are attacked by wildlife in both captive settings (Coyne, 2019; Hosey & Melfi, 2015) and non-captive settings (e.g. Burns & Howard, 2003). In VWT these incidents, such as injuries to keepers and handlers, as well as more indirect negative consequences, would be avoided. For example, just as humans can transfer diseases to animals, so too animals can transfer diseases to humans through zoonoses.

In VWT experiences, the tourist can be guaranteed a sighting of the animal they want to encounter. In non-captive wildlife settings, and even some captive ones, they usually cannot. Tourists desires to see animals can create additional expense for the operator, for example, if a whale watching boat fails to find the guaranteed free-ranging whale and has to run the tour a second time. There are other ways that VWT can be cheaper for the operator. While potentially expensive to establish, for a circus of hologram animals or an aquarium containing robotic dolphins, the cost of care, training, feeding, insurance, and so on are significantly reduced – if not mitigated altogether.

Some impacts remain to be seen. We know that a close encounter with the animal is a primary objective for many ecotourists (Tully & Carr, 2020). VWT can offer, and guarantee, close encounters that are not possible with real animals. Dinosaur holograms, that bring to 'life' extinct animals, are an example of this (Holoverse, 2022). Humans may prefer encounters with 'real' animals, and exposure through VWT may result in increased demand for 'the real thing'. But perhaps we would accept the alternative, as we currently do with dinosaurs, if it was the only option, or if we perceived it as the

best option. Fennell's (2022) recent study of preferences for a live swim-with-dolphin experience or an animatronic one has made a start in understanding this. Most importantly, whether a 'fake' animal is perceived as 'real', 'authentic', or 'wild' will probably not be the only crucial question. Research into the ontological status of captive animals has long revealed that they occupy a space between nature and culture, even classifying them as 'biotic artefacts' (Lee, 2005) or 'transbiological entities' (Szczygielska, 2013). How we encounter virtual or animatronic beings and whether we are equally, or more, attracted to them than to their real counterparts will also depend on our ethical stance. This will, for example, be shaped by our awareness of the power of technological alternatives, our knowledge about the situation of animals in captivity, and our ability to empathize with them (Fennell, 2022, p. 13).

Curtin (2009) argues that encounters with wildlife can positively influence psychological well-being in humans: the '"feel-good" aspect embodied in an encounter' (Burns, 2022, p. 322). If that human well-being comes from their sense of satisfaction with the encounter, with the entertainment they were exposed to, then there is potential for this benefit to still be derived from VWT where the wildlife can entertain without being treated inhumanely to make them do so. Obviously, this is new ground and further studies need to be conducted.

Additional kinds of harm

Objectification and commodification harm the status of animal subjects and turn them into objects; for example, by denying them agency (Burns & Benz-Schwarzburg, 2021). It seems that in VWT, the animals are still in this position. They are represented as something that exists for our pleasure and entertainment, despite the fact that no real animal is being objectified. Instead, an objectifying image or representation is offered. Many traditional ecotourism encounters are made possible because of an unequal power relationship between humans and animals (Burns, 2022; Tully & Carr, 2020). Although VWT is not dependent on the mistreatment of real animals, what is being represented in it still matters. For example, although we asserted earlier that in VWT settings animals no longer labour for our entertainment, they can be represented, virtually, as doing so and this can constitute a type of harm.

Burns and Benz-Schwarzburg (2021) discuss, and raise welfare concerns about, the representations arising from the presentation of living animals in wildlife tourism encounters. In VWT, representation still happens, although the presentation is based on images. What the visitor sees is a specific representation of the wild, one that leads them to adopt specific perceptions or attitudes towards animals. Among them will be a perception of how they, as humans, relate to the animals presented in the images. Just as patting a live tiger (Cohen, 2012, 2013) gives the illusion that the tiger is docile and tame (Winter, 2020), and perhaps even enjoys the encounter, the same effect can be achieved with the representation of a non-real/virtual animal. Imagine an augmented reality game, where the tourist dons a headset that takes them, virtually, to a jungle setting where a tiger emerges from the undergrowth and lays down beside them. They can reach out a hand to stroke the animals' fur, they can hear it breathing and see its chest rise and fall in sync with its heartbeat. While we are already imagining, step back into the Roncalli circus tent and see a very realistic hologram of an African elephant

performing in the ring. It trumpets loudly and, taking its weight on both front legs, lifts its back legs off the ground in a handstand. What do such representations of animals tell the tourist about the animal and about their relationship to it?

By taking the image, and using it as we please, the represented animal has no agency. It is, again, a disenfranchised commodity for humans to use in an encounter that does not fit with posthumanist ideology. The encounter is again anthropocentric, the image promoting to the tourist their right to dominate animals and their right to gaze at them for their own pleasure. The artificiality that can dominate VWT (and permit the patting of a virtual tiger or the watching of an elephant performs a handstand) can damage the human-animal relationship by presenting something that is not, or at least should not, be possible in real life. In the VWT experiences described, neither a real tiger nor a real elephant was harmed to allow this encounter to happen. However, in both the animals' agency is removed and replaced by an unnatural and submissive performance, and an argument could be made that this is cause for concern. Harm is being done through the violation of the animals' dignity, through misrepresentation of their true self, and through situating them in a relationship with humans where they are perceived as happy and willingly to entertain us. The artificiality of the setting might lead visitors to assume that no harm is being done by conceptualizing the human-animal relationship this way. Thus, such representations not merely reiterate but even trivialize and thus reinforce the power relationship between humans and non-human animals.

Conclusion

We commenced with the question of whether it is possible to achieve the dual benefits of protecting animals and entertaining humans under the label of wildlife ecotourism and proposed that this might be better achieved when tourism is delivered virtually. With this in mind, we outlined some of the possible advantages and disadvantages of VWT for both animals and humans, paying particular attention to animal welfare, but also to possible harm beyond welfare, such as representation and dignity.

As we have seen, presenting animals virtually removes many welfare concerns connected with the captivity, maintenance, and training of wild animals, as well as those that arise for free-ranging wildlife when humans venture into their habitat and intrude on their lives. It also offers advantages for the ecotourists. As poor treatment of animals for the purpose of human entertainment becomes less acceptable (Burns, 2022, p. 324), VWT could be offered as guilt-free tourism: where the tourist no longer has to concern themselves with the conditions in which the wildlife live, or whether their presence is causing harm. However, in VWT, we are still presenting the animal as a commodity for the person and cannot guarantee understanding from the perspective of the animal. Without care for representation, VWT can still present animals as there for our use and not foster care and respect for their natural way of being, or provision them with any rights or agency.

Thus, although we could conclude that the ideals of wildlife ecotourism can best, and perhaps only, be met by the use of non-real animals, caution is needed. Ultimately, VWT seems to fit with a concept of ecotourism that centres on welfare ethics and has the potential to fit with the ethical position of posthumanism better than other forms of wildlife tourism. As a form of ecotourism, VWT should 'foster in humans a greater appreciation

of animals … increase awareness of species and their conservation status … promote pro-environmental attitudes (Powell & Ham, 2008) and create incentives to help conserve habitat and protect animals' (Burns, 2022, p. 324). If VWT is truly a form of wildlife eco-tourism, then conservation ideology should be at its very heart (Burns, 2022, p. 323), thus the link between it and the effective promotion of conservation values and respect for wildlife requires further research.

We can postulate that tourists may have to accept VWT, in a future with limited wild-life species remaining in non-captive settings and captive settings increasingly shunned and pandemics preventing travel. But whether virtual settings can effectively influence values, increase respect and be a tool to bridge the human-animal divide remains to be seen. Clearly, VWT must do more than avoiding welfare harm to bridge that gap. Caution is warranted in order to not create new, artificially crafted opportunities to engage in ethically problematic encounters that, for example, permit the patting of a virtual tiger or the watching of an elephant perform a handstand. Such representations damage the human-animal relationship. The harm being done manifests in a violation of the animals' dignity and a demonstration of human power over animals who are there to be watched, to be touched, to entertain us. This reiterates and reinforces the problematic power relationship that allowed humans to dominant wildlife in non-virtual forms of wildlife tourism. Using a posthumanist lens, VWT may ultimately fit better than traditional forms of wildlife tourism with ecotourism values and ideas, but the representation of wildlife in these settings needs to be approached with careful consideration.

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