



# No Room at the Zoo: Management Euthanasia and Animal Welfare

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## Abstract

The practice of ‘management euthanasia’, in which zoos kill otherwise healthy surplus animals, is a controversial one. The debate over the permissibility of the practice tends to divide along two different views in animal ethics—animal rights and animal welfare. Traditionally, those arguments against the practice have come from the animal rights camp, who see it as a violation of the rights of the animal involved. Arguments in favour come from the animal welfare perspective, who argue that as the animal does not suffer, there is no harm in the practice and it is justified by its potential benefits. Here, I argue that an expansion of the welfare view, encompassing longevity and opportunities for positive welfare, give stronger considerations against management euthanasia, which then require greater benefits to justify its use.

**Keywords** Zoo · Management euthanasia · Culling · Animal welfare · Animal rights

## Introduction

In February 2014, Copenhagen Zoo became the subject of a media frenzy when they euthanized a young male giraffe, subsequently using his body for a public autopsy and eventually as food for the carnivores. This was controversial because the euthanasia took place not due to illness, but because he was surplus to requirements. Since then, similar incidents have followed, with similar responses (e.g. Nicholls 2018; Parker 2017), and much debate both for and against the practice. Those against argued that it was ‘wrong and disturbing’ to kill a healthy animal and use the body in such a way (Maple 2014); while those in favour responded by pointing out that the killing was done humanely so the giraffe did not suffer, and that the limited

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resources of zoos created these difficult decisions in maintaining viable breeding populations (Rincon 2014). This debate is not new in the zoo industry, with the problem of management euthanasia, or ‘culling’, having been discussed for decades (e.g. Lindburg 1991; Lacy 1991). In this paper I will look at both sides of the discussion—coming from the animal ‘rights’ and ‘welfare’ positions respectively—before describing an alternative way of seeing the welfare position that might speak against the practice, and looking at some of the conditions under which it might be considered acceptable.

Within zoos, the practice described above—the killing of otherwise healthy surplus animals—is referred to as ‘management euthanasia’. Euthanasia in general refers to humane or painless killing (most commonly through lethal injection performed under anaesthesia); it is a term based in ancient Greek that roughly translates to ‘good death’. Euthanasia is typically associated with the practice of ending the life of an individual that is terminally ill or in chronic pain, so that the choice to end life can be considered an act of mercy or kindness and is also a ‘good’ death in this way.<sup>1</sup> What differentiates management euthanasia from this usual practice is that the animals involved are otherwise healthy. The decision is not made from consideration of their expected quality of life but instead, the animals euthanized are those considered surplus to the requirements of the institution: that is, those animals that are not on the overall management plan and which the institution lacks the resources to support. The practice of management euthanasia, though not often made public, is relatively common, with estimates that European zoos within the European Association of Zoos and Aquaria (EAZA) euthanize between three and five thousand animals each year (Barnes 2014). There are suggestions that this is also occurring within American zoos, though numbers are not available (Parker 2017).

Surplus animals can arise from a variety of causes. The simplest is uncontrolled breeding. If animals are allowed to breed without restriction, very soon the population will grow beyond a size that any particular institution has the resources to support. This sort of practice is rare in zoos, where populations are carefully managed for genetics and demographics. However, even in carefully controlled breeding programs, surplus can arise. In polygynous species, which are common in, for example, primates and hoofstock, an equal sex ratio at birth will lead to a surplus of adult males in the population. Maintenance of genetic diversity will require careful breeding of only those individuals which have under-represented genetics, and so any animals from already well-represented lines will be surplus to breeding requirements. So too for post-reproductive animals, those which have already made their breeding contribution to the next generation. Creation of viable self-sustaining captive populations requires careful use of all available spaces to house genetically and demographically valuable breeding animals, and using spaces to house surplus animals can threaten the viability of such programs (Penfold et al. 2014). Powell and Ardaiole (2016) list the common reasons for surplus—large litters, uncontrolled

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<sup>1</sup> Some writers, e.g. Regan (1983) consider that the second requirement—the death being in the interests of the individual—is also essential for a practice to be considered euthanasia rather than killing. Here I simply follow the common usage within animal industries of ‘euthanasia’ as referring to the manner of killing rather than its intention.

breeding, unexpectedly high offspring number or survival, requirement for ongoing breeding to preserve fertility, sex ratio and presence of post-reproductive individuals. It is inevitable that even the most carefully managed breeding programs will create some surplus animals, which the institution must then manage in some way.

Often, opponents to management euthanasia cite alternatives that zoos should be using instead of culling animals. There has been a lot of writing done on these potential alternatives and their benefits and drawbacks (e.g. Lindburg 1991; Lacy 1991; Lindburg and Lindburg 1995; Glatston 1998; Penfold et al. 2014; Asa 2016) and I will only summarise them here, to show that they are not always viable. For the purposes of the rest of this paper, I will assume that when we are talking about management euthanasia, it is for situations in which there are no good alternatives available. The first alternative management strategy is to try and prevent or minimise the creation of surplus in the first place. This involves both careful strategic planning on which animals to breed and when (Hutchins et al. 1995), and use of contraception to prevent unplanned breeding. Neither of these methods is perfect. As discussed above, even well-managed programs will create some surplus, and contraception options can often have negative physiological and behavioural effects (Glatston 1998; Penfold et al. 2014; Asa 2016). Animals (particularly females) kept on contraception for too long can have difficulties in breeding in the future, threatening the long-term viability of breeding programs (Penfold et al. 2014), and can be at risk for health problems such as cancers. Prevention of breeding, particularly through separation of the sexes, can lead to behavioural problems and the potential for decreased welfare through lack of opportunities to perform beneficial breeding behaviours (Penfold et al. 2014).

There are then, obvious problems with preventing the creation of surplus animals, both in lack of effectiveness and undesirable side-effects. Other alternatives then are aimed at other ways of managing these surplus animals once they do exist—housing within the institution, dispersal to other institutions, and release to the wild. Housing within the institution is usually possible, but as resources are limited, doing so will necessarily take resources away from other animals—taking up space that might be used for more valuable breeding animals, or resources that could be used to improve the housing and husbandry of other animals in the zoo. I will turn later to examination of these sorts of trade-offs, but suffice to say for now, that no zoo can continue to house all surplus animals over time without large potential costs to breeding programs and the welfare of other animals. Dispersal to other institutions holds similar problems. Within any region, accredited zoos are managed as a whole, with spaces allocated throughout the region for particular breeding programs. This means that although in the short term, other institutions may have space to take on surplus, eventually the same problems that arise for a single institution will arise for the region, as all zoos reach carrying capacity. Dispersal to non-accredited institutions is problematic as they often will not meet suitable welfare standards for the animals. Lindburg (1991) has suggested creation of large-scale ‘holding facilities’ to which a number of zoos could contribute, and use to house their surplus, but similar resource problems will arise, as the resources for these facilities will necessarily be taken from that which could be used for management of other

zoo animals within breeding programs. Release to the wild is not a viable option for most species. Even the most carefully-managed release programs are not often successful (Harrington et al. 2013). Captive-born animals do extremely poorly in the wild unless they undergo extensive training for release, which requires resources that are likely to be unavailable, and is usually unpleasant for the animals. For most species, there is also no suitable habitat available for release, that isn't under threat or already at carrying capacity and so fierce competition, fighting and predation are highly probable, and will lead to decreased welfare. Release of most animals would be condemning them to a much slower and more unpleasant death than that of management euthanasia.

In some cases, these potential alternatives can work to reduce creation of surplus, or manage surplus animals where they are created, but there will be many cases in which they are not possible or appropriate. Although almost all zoos will aim to use alternative options where possible, their use always requires trade-offs in other areas, such as decreased resources to put towards other animals, or breeding programs. There will still be situations where, all things considered, management euthanasia may be one of the better available options. The question of interest here should then be, when (if ever) is management euthanasia permissible, and under what conditions? The aim of this paper is not to definitively answer this question, as the answer is likely to be highly context-sensitive and reliant on the values at play in particular institutions. Instead, I aim to discuss some of the considerations that are likely to play a role in forming an answer—considerations of the rights and welfare of the particular animal, as well as other potential competing values that exist within zoos and animal management.

## Two Sides: The Rights and Welfare Views

Opinions about the practice of management euthanasia tend to differ depending on the underlying ethical framework at play. There are two major frameworks within animal ethics—the rights view and the welfare view<sup>2</sup> (Lindburg 1999). Although these two views agree about many of the issues to do with our treatment of animals, they differ in the underlying motivations and ideology. They also form the basis for the two sides of the debate on management euthanasia, with most of the arguments against the practice being grounded in the rights view, and the arguments in favour coming out of the welfare view. Here I will briefly describe each of these views, and what they say about the practice of management euthanasia.

The rights view sees our responsibilities towards animals as being grounded in their rights as sentient beings. As animals are individuals with their own lives, thoughts and feelings, this creates a moral duty in others not to interfere with these. One of the early developers of this view is Regan (1983), who sees the morally relevant feature of animals as being that they are “subject[s] of a life”, with their own individual set of beliefs and desires, their own well-being, which ground their individual rights. Rights can include welfare rights, those things which prevent

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<sup>2</sup> There are other potential ethical frameworks through which we can view our treatment of animals (see e.g. Gray 2017), but these are by far the two most common.

physical or emotional harm, as well as additional rights to such as “some form of protection of their lives and liberty, irrespective of the impact on their welfare” (Gray 2017, 91). This view comes out of deontological ethical theories, in which other individuals should be treated as ‘ends in themselves’ rather than ‘means’ towards our own goals, and it is not generally considered acceptable to infringe on the rights of an individual for some greater overall benefit (Alexander and Moore 2016). In respecting these rights, animal rights advocates typically oppose any use of animals for human ends. One prominent organisation which operates within this framework is People for the Ethical Treatment of Animals (PETA), who consistently fight for the abolition of human use of animals (Lindburg 1999).

The arguments against management euthanasia typically come out of the animal rights view. It seems clear that within this framework, if we should not use animals for human ends, then we definitely should not end their lives for human reasons, such as the allocation of resources. To do so would violate the right to life. This is one of the most fundamental rights as without life, it is impossible to enjoy other rights. Although there are situations in which rights can be overridden when the stakes are sufficiently high (such as protecting stronger or more important rights), this is not the case for management euthanasia. The potential benefits in terms of increasing the welfare of other animals, or of increasing the success of breeding programs, are not of the sort that could be considered to override the right to life of the euthanized animal. Under a rights view, the practice of euthanasia is only acceptable when it is aimed to directly benefit the animal itself, through ending suffering. This is what Regan (1983) terms ‘preference-respecting’ euthanasia; where in the case of animals, were the animal able to voice an opinion, it would choose this option for itself—typically in situations such as chronic or terminal illness. Because of this, it is considered morally permissible. Management euthanasia, by contrast, is a decision to kill a healthy animal whose preference would be to go on living, and for this reason is morally unacceptable. In the context of the question ‘when, if ever, is management euthanasia permissible, and under what conditions’, we can see that the answer from a rights perspective is therefore going to be ‘never’.

In contrast to the rights view, the welfare view sees the moral status of animals as grounded in their experience as sentient beings, those capable of experiencing pleasure and suffering. Our responsibilities towards them are then those of providing the best possible welfare to make their lives go as well as possible. Welfare here is usually understood in terms of subjective experience, over the lifetime of the animal. That is, an animal’s total welfare is equivalent to something like the weighted total of positive and negative mental states experienced (see e.g. Phillips 2009). Those experiences causing negative mental states, such as fear or pain, will decrease welfare, while those experiences causing positive mental states, such as joy or satisfaction, will increase welfare. Our treatment of animals should then aim to maximize welfare in terms of the quality of this experience. In practice, this is most often understood as the prevention of cruelty, so that no (or minimal) suffering will be inflicted on animals throughout their lives. Importantly, differing from the rights view, this does not exclude the human use of animals in areas such as science, farming, or recreation, as long as the animals are not harmed in so doing,

or if the harm is outweighed by a greater overall benefit. The welfare view emerges from utilitarian moral framework, in which an action is judged on the overall outcome for all those affected (in this case, in terms of welfare) (Lindburg 1999). This means that it is acceptable to perform actions which compromise the welfare of an individual as long as there is some larger overall benefit. One major proponent of this view has been Peter Singer (e.g. Singer 1995), who considers the prevention of suffering (and, to a lesser extent, the promotion of pleasure) as the ultimate moral good. The values of the welfare view can be seen in the actions of organisations like the RSPCA, which operates to protect the welfare of animals; focusing on ensuring their humane use rather than eliminating their use.

Due to these differences in the underlying moral framework, the welfare view then approaches the subject of management euthanasia quite differently than the rights view. In general, defenders of the practice, particularly those within zoological institutions, have been situated within the welfare view. Under the welfare view, management euthanasia is typically not considered to be problematic, as it does not harm the welfare of the animal. This is because, as long as the animal has previously been well cared for, with predominately positive experiences, and the euthanasia is competently performed, the animal will not experience any suffering and thus welfare is not compromised. As under the welfare perspective, the quality of subjective experience is what matters, a painless death does not create a welfare problem. This perspective, that death is not a welfare issue, is relatively common within the animal welfare view (Jensen 2017; Yeates 2010). Jensen (2017) considers this to be because ‘welfare’ is typically considered to mean ‘welfare at a time’. Yeates (2010) attributes it as a side-effect of a subjective conception of welfare, under which it is assumed that those things which matter to welfare are only those which an animal can subjectively experience. “In order for something to be good or bad for an animal, it has to be *experienced* as good or bad; and in order for this to be possible, the animal must be alive and conscious at the time ... It follows that since there is no experience of the state of being dead, the concept of welfare does not apply to that state” (Jensen 2017, 616). As death is necessarily the absence of such experiences, it can neither harm nor benefit the animal, and the only concern for welfare are the circumstances surrounding the death. In cases of management euthanasia, so long as the sum of experiences for the animal’s life has been positive (presuming it has been well cared for) and the act of euthanasia itself caused no suffering, the animal has had good welfare. Several writers defending the practice of management euthanasia use this line of argument: “culled individuals do not experience reduced welfare” (Powell and Ardaiole 2016, 197); “culled animals do not *experience* reduced welfare compared to living animals, unless they are culled inhumanely” (Penfold et al. 2014, 25). As management euthanasia does not compromise welfare, it can therefore be an acceptable tool to use when necessary; and given the underlying utilitarian framework, it can be justified whenever there is an overall benefit arising from its use (though these calculations must also take into account other possible negative effects, such as harm to public opinion regarding the zoo, or to the personal feelings of the keepers involved, as will be discussed further on).

Under a traditional welfare view then, the answer to our question ‘when (if ever) is management euthanasia permissible, and under what conditions?’ would be, ‘when there is some overall benefit to be had’. As the harm to the euthanized animal is minimal, this would mean that (other factors taken into account), in principle the practice may be permissible for even quite small benefits. However, it is still the case that many within the welfare view are also opposed to the practice. Although this is sometimes attributed to our own feelings and attachments to the animals (Lacy 1995), in the next section I will describe another possibility through an extension to the usual welfare view, which considers a greater harm to the animal from management euthanasia. This then changes the types of conditions under which we may find it acceptable; and I argue that we would need more compelling reasons in justification than previously thought, to outweigh the welfare harm.

### Extending the Welfare View

The view that death is not a welfare issue, is not satisfactory to many “who consider animal welfare to be an appropriate basis for decision-making in animal ethics but also consider that an animal’s death is ethically significant” (Yeates 2010, 229). Even under the welfare view, there is often a sense that killing is not harmless to welfare. “There are many who work at least partly within the animal welfare tradition who may consider the killing of a healthy animal to seem, at least in some cases, morally undesirable” (Yeates 2010, 230). This seems true in the management euthanasia debate—although defenders of the practice are typically operating under the welfare view, there are those within the view who opposed it (e.g. Maple 2014). To understand why, we need to expand the welfare view to allow for the welfare harm of death; which can be done through understanding that welfare is more than just ‘welfare-at-a-time’ as described above, but should also include exclusion of positive states (Yeates 2010) and lifetime welfare (Jensen 2017).

As described above, the aim of the welfare position is to maximise the welfare of captive animals, where welfare is understood as the subjective experience of an animal over its lifetime. This tends to focus on prevention of suffering, with the apparent underlying assumption that the maximal state of welfare is one in which there is no suffering. However, if we consider the nature of subjective experience, it should be clear that this can vary along both sides of the spectrum—into negative experience (suffering) and positive experience (pleasure)—and can change in magnitude along both these lines. Maximising welfare then does not just involve the prevention of suffering, but also the promotion of positive experiences. When we are considering whether the welfare of an animal has been negatively compromised, it is not enough to simply look at whether it has dropped below a neutral baseline level into the negative. We should instead set our comparative baseline higher—at some optimal positive state of flourishing, and look at how we may be failing to reach this. Under this view, we can compromise welfare not just through the infliction of suffering, but through the failure to provide positive opportunities. Something like this view is discussed by Regan (1983) who differentiates between ‘harms’ to welfare—those actions which directly create negative experiences—and

‘deprivations’—those actions (or lack of) which deprive an animal of opportunity for positive experiences. Here then, we can see a welfare problem arising for animals that are given insufficient opportunities for achieving positive welfare states, even when they do not experience any suffering.

It is important to keep in mind the second part of the welfare definition discussed earlier, that is subjective experience *over a lifetime*. This means welfare can be measured as something like the sum total of experiences over time (e.g. Phillips 2009, 8–9), rather than some sort of average of overall quality of experience.<sup>3</sup> All other things being equal, an animal with a longer lifespan is likely to have better welfare than one with a shorter life, as this life will contain more positive experiences. Jensen (2017) argues that something can be bad for the welfare of an animal if it makes the animal worse off than it would have been under some other possible scenario. In this case, longevity is an important consideration as a longer life will typically be better than a shorter one—“to say that death is bad for this person means that she would have had a better life, had she continued to live rather than die at this time” (Jensen 2017, 617). In fact, he argues that really all our welfare assessments of animals are based on comparisons with some other possible state—we want to know whether an animal is better or worse off in their current state than they may be under some proposed intervention, and this can apply also to premature death. The early termination of life is a harm to welfare through the *removal of future opportunities for positive welfare experiences*. This perspective also explains why medical euthanasia is typically not considered a welfare problem—because for these animals, the future is not expected to hold many, if any, opportunities for positive experiences and instead is expected to be overwhelmingly negative. In this case, we are actually benefitting welfare through the early termination of life and the reduction of negative experiences.

Yeates (2010) points out that most of our welfare evaluations involve a comparison between different states (for example, in terms of their duration and severity) and that any state can only be considered good or bad in comparison to another. Since we routinely compare states when one or the other is not present (as an animal can only ever be in a single state at a time), it is no problem to compare the presence of states with their absence (such as though death). Indeed, if we are not able to make such comparisons, it is difficult to make sense of the practice of humane euthanasia for veterinary reasons—this involves a comparison between the presence of the negative states that a sick or dying animal may experience, and the absence of these states that will occur with its death. “Non-existence means that all and any states of the animal that could otherwise have been present are actually absent ... the overall welfare of an existent animal can therefore be compared to the absence ... of that overall state, i.e., to its non-existence” (Yeates 2010, 236). These calculations can apply to the value of death in cases where we expect the potential future of an animal to be largely positive or negative—“if the presence of a life would have positive value overall then death is a harm; if it would have negative

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<sup>3</sup> For the latter view, see e.g. Penfold et al. (2014)—“Welfare reflects a combination of positive and negative mental, physical, and emotional states that are co-dependent and vary over time. Longevity of an animal does not translate into “better welfare”, as welfare is not a cumulative characteristic for the individual” (25).



value overall then death is a benefit” (Yeates 2010, 237). This then gives us a “a prima facie responsibility for an agent not to kill an animal that would otherwise have a life worth living” (Yeates 2010, 239).

One potential objection to this account is that it creates an epistemological problem (McMahan 2002)—that is, that we have no way of knowing what the future life of the animal could have been like, or whether it would have been one worth living. Although it may be true that we cannot know for certain what the future life of an animal may be like, we can make a reasonable assumption based on our knowledge of the animal, and the lives of others of the same species within the institution. McMahan (2002) points out that these “evaluations of death must have a probabilistic or statistical basis” (107), in which we look at what we could most likely expect for the future life of the individual.

Death then can be considered a welfare issue “insofar as it leads to the exclusion of relevant positive states” (Yeates 2010, 229) or “when the animal is deprived of good experiences or other good things in life” (Jensen 2017, 618). This gives us a position within the welfare view which speaks against the practice of management euthanasia. Where an animal might otherwise have been expected to have a life consisting of largely positive states, management euthanasia harms the welfare of that animal by depriving it of those future states. As there is some (potentially quite large) harm to the welfare of the animal through euthanasia in these cases, it will require a quite large benefit in trade-off to make the practice permissible. Although the answer to our question ‘when (if ever) is management euthanasia permissible, and under what conditions?’ may remain ‘when there is some overall benefit to be had’, under the extended welfare view, the magnitude of that benefit must be much larger to justify the practice.

## Considerations and Trade-Offs

I have shown that even under a welfare view, management euthanasia may be more problematic than has been thought, as it compromises welfare through the deprivation of possible future positive experiences. All other things being equal, an animal with a long life will have higher welfare than an animal with a shorter life and the practice of management euthanasia then creates a welfare deprivation, which will require stronger justification in order to be acceptable. In answering the question of when management euthanasia is permissible, and under what conditions, it is necessary to also consider the other positive and negative outcomes that may arise from the practice, either in a specific instance, or in general. “In addition to the complexity of the welfare evaluation on its own, a decision whether or not to kill an animal will be complicated further by other external factors, such as productivity, economics, and health of other animals ... these other factors might entail that, in some cases, the killing of an animal might be justified” (Yeates 2010, 238). We will then be able to do some sort of weighing of different factors to determine the best course of action in each case. In this section, I will look at some of the possible factors that may need to be considered in making such calculations—both under a monist perspective (considering only a single value—that of welfare maximization),

and a pluralist perspective (considering multiple competing values). It is not my intention here to try and provide some sort of strict weighting that could be used in making these calculations, but only to draw attention to the potential considerations that must be kept in mind when making such decisions. In the end, decisions will depend on the particular circumstances and values for a particular situation or institution.

### **Monist (Welfare)**

Norton (1995) draws a distinction between a monist system of value, under which we only consider one value, and a pluralist system, under which we must adjudicate between multiple competing values. Under both of these systems, there are potential circumstances which create additional considerations in deliberating on management euthanasia. I will look first at a monist view, under which maximization of welfare is the primary concern. We have already considered how the act of management euthanasia can decrease the welfare of the euthanized animal, in depriving it of the opportunity for future pleasures. Here, I will look at some potential welfare harms that may occur as a result of failing to implement management euthanasia, that may then weigh in the favour of the practice under these conditions. These relate both to the expected welfare of the euthanized animal, and welfare of other animals in the collection. There is certainly reason to think that there will be situations in which the expected welfare of surplus animals over time will not be overwhelmingly positive. Additionally, there will be situations in which the welfare of other animals will be negatively affected to such a degree that the overall welfare of the group may be decreased through prevention of management euthanasia.

As described earlier, management euthanasia is usually considered because of a lack of viable alternatives. That is, that the other possible options for the animal are not good ones, and may not lead to higher welfare in the long term. Consider keeping the animal within the institution. Leaving the animals in their existing enclosures, with the current social group, is often not beneficial. This can lead to overcrowding, potential disease transmission and social disturbance, such as fights between individuals. This was the case for Marius the giraffe, who was reportedly experiencing aggression from his father (Parker 2017). All of these are going to cause suffering and lower welfare. The most common alternative option is off-display housing, keeping the animals in another enclosure somewhere away from the public areas of the zoo. These enclosures are usually smaller and less well-furnished than the display exhibits, because resources tend to focus on those areas used by the public. They are also not often designed with particular species in mind, as they may be used for a variety of animals as needs arise, and so will not meet the needs of the animals as well as specialised display exhibits do. Animals housed in these enclosures will usually have decreased human contact, which is something they often find positive, and may also be housed away from conspecifics. All these factors can cause distress and decrease welfare.

The options for rehoming outside the zoo are also likely to be inadequate. As described, ending the animals to other accredited institutions is rarely possible, as

they will have usually already bred or acquired animals to meet their capacity. Instead, dispersal options are often limited to smaller non-accredited institutions, where welfare standards cannot be guaranteed. The lack of funding in such institutions means they are unlikely to meet the needs of the animals as well as they should. Release to the wild is also unlikely to be successful, and as described earlier, is highly likely to compromise the welfare of the animals involved.

These points show that there are many cases in which management euthanasia may be considered the best option for the animal, as rather than removing opportunities for future pleasure, it is removing the likelihood of future suffering. In these cases, it begins to seem closer to a case of preference-respecting euthanasia, where were the animal given the ability to voice a preference, it may prefer death to a life of ongoing deprivation. In addition to this, we should also consider welfare effects on other animals in the zoo. There will be cases where keeping the animal alive may cause a decrease in welfare in many other animals, decreasing overall welfare of the group. Within a large institution, although maximising the welfare of each animal is important, there needs to be a balance in which the total welfare of the animals across the zoo is as high as possible.<sup>4</sup> There will be some cases where management euthanasia is the option that will best achieve this.

There are two ways in which the presence of surplus animals is likely to decrease the welfare of other animals—the first is directly, through their immediate presence, and the second is indirectly, through diverting resources. As described above, holding too many animals in an enclosure can result in crowding, illness and social stresses such as aggression, which can affect all the animals in the group. There may also be a loss of breeding opportunities for the other animals. Zoos will breed to fill the space available, and surplus animals taking that space will restrict the breeding of others. Breeding creates many opportunities for positive welfare, in courtship, mating and parent–offspring bonds; opportunities that will be lost if breeding is prevented. “Breeding is a fundamental motivator of all animals. The life cycle of breeding, birthing and raising young is an engaging and satisfying behaviour for many animals” (Gray 2017, 80–81). The prevention of these behaviours could be described as an “arguable unkindness” (Parker 2017). However, there are those who doubt the real benefit of these opportunities: “The absence of breeding opportunity does not meet the definition of suffering or poor welfare. In nature, socially dominant animals do most of the breeding. Subordinate males are often found at the periphery of female herds led by mature matriarchs. This is true for hippos, elephants, buffalos and many other species. Do weaker males enjoy a lesser quality of life in nature? The case can be made that the mere opportunity to compete for access to females is a life-enriching experience” (Maple 2014, para. 6). More work may be needed to quantify the level of welfare cost experienced by animals prevented from breeding. In addition to this, maintaining additional surplus animals will use resources that could be used on increasing the welfare of animals more central to the collection. Resources such as money, and keeper time, can be used to

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<sup>4</sup> This is not necessarily the only consideration in welfare calculations—for example we might want to add something like: no animal should have their welfare drop below a certain baseline even if it maximises welfare overall.

improve the exhibits and husbandry of other animals. If the resulting resource deficit is large, it can result in a decrease in overall welfare. It may sometimes be the case that the euthanasia of a single animal may be a means of increasing overall welfare of animals across the institution.

One benefit that should not weigh against the welfare of the euthanized animal is that of the benefit to future potential animals that could be allowed to exist. Lacy (1995) makes this argument, that “culling one animal directly allows another to live” (189), through creating space that allows for further breeding. Now, it may be the case that this is valuable due to the increased value of the new animal to conservation breeding programs, and I will consider that sort of value in the next section. Here, the question is simply whether the positive welfare experience of a new animal that could then come into existence can be allowed to weigh against the welfare harm to the euthanized animal. McMahan (2002) addresses this question about the ‘replaceability’ of individuals; whether it should be considered permissible to kill one animal in order to create another which may have a better life. He concludes that this would only work if we considered that the welfare goods are ‘impersonal’—if they are unattached to particular individuals. However, he argues that the unity relations that exist between the past and future versions of an individual (understood as something like psychological continuity) mean that we have more reason to preserve the welfare of an existing individual than we do to simply create a new replacement. “We normally assume that, while it is bad for one of us to cease to exist, it is not in the same way good, or at least not to a comparable extent, for one (or more) of us to come into existence” (McMahan 2002, 26). The welfare harm to the animal that is killed cannot be offset through the potential welfare gain to some future animal that would not otherwise exist.

### **Pluralist (Other Values)**

Even if all we value is animal welfare, I have shown that there may be reasons in favour of management euthanasia in particular cases. However, there are also many other values that may come into play when making decisions of this type. Maximising the welfare of the animals in their care is a huge part of the aim of a zoological institution. However, there are also many other things a zoo may wish to achieve, which will not always be in line with absolute maximization of welfare. “Moral pluralism is the view that we value many things in different ways, and that these differing values are sometimes in conflict. Further, these values may be incommensurate, so that they cannot be weighed in a common metric” (Norton 1995, 104).

The first and probably most important value active in zoos is that of conservation and breeding programs. In general, zoos no longer take animals from the wild and so must breed genetically compatible animals with high precision in order to maintain a healthy gene pool in captivity and ensure the future of the captive populations. The existence of surplus animals can get in the way of this, as described above, when they prevent ongoing breeding. Spaces that are allocated to housing surplus animals will be directly detrimental to the breeding program. Additionally, where these programs are necessary for direct conservation, such as release, the problem is of

even greater importance. If the existence of a surplus animal interferes with an effective conservation program, this could be a strong consideration in favour of management euthanasia.

This clash of values, between the welfare of individual animals and the preservation of species or environments, is found throughout conservation biology (Norton 1995). On the one hand, we value individual animals and seek to maximise their welfare. On the other, we value flourishing ecosystems and the continued existence of species. Often, concentrating on one of these ends requires sacrifice in the other. Norton (1995) argues that our responsibilities will differ depending on context. In the wild context, outside of human interference, the value of wildness and ecosystem preservation is dominant, and we are willing to compromise individual welfare to achieve this. In the domestic context, where we have taken animals into our care, our responsibilities towards them individually become more important. The issue with zoos is they seem to straddle both contexts—the animals have certainly been taken into human care, with the attendant responsibilities, but also are there for the purposes of supporting conservation of their wild conspecifics, with some sacrifices possibly necessary to achieve this goal. There is unlikely to be a simple answer as to which of these values should take precedence in the zoo context, as it will depend on many other factors, such as the level of threat the wild population is under and the type of action the zoo is taking to assist (e.g. breeding for release, fundraising, public education). However, there will be some cases where it seems the demands of conservation will outweigh the welfare deprivations of management euthanasia.

Another important goal of zoos is public education and engagement. This is in service of conservation objectives, but in modern zoos, raising awareness on the plight of endangered species, and leading action to help preserve them, are probably more important than direct conservation action through breeding programs. Effective global conservation relies on the concern and action of the wider public, and zoos have a unique role in inspiring care for the natural world. In this case, it seems likely that management euthanasia will most often harm this outcome. Part of the effectiveness of such an approach is public engagement with individual animals; developing an emotional bond with them and then transferring that care to conservation efforts. The rising popularity of personal animal encounters in zoos seems to support this. Management euthanasia can harm that bond, decreasing perceived value of individual animals in favour of the group. There are different potential roles for zoo animals—“An animal can be a city’s shared pet, or it can be a quasi-agricultural team member whose work is to be seen and to breed and, perhaps, to die young.” (Parker 2017, para 26). Although some have advocated for this focus on groups, it does not seem that the public engage in the same way with large groups. If management euthanasia harms public engagement with zoo animals and thus harms conservation goals, this is a reason against its use. The huge public outcry against Copenhagen Zoo, including death threats (Parker 2017) seems to attest to this. Similarly, when management euthanasia causes public outcry, these harms to zoo reputation can decrease attendance, which as well as decreasing opportunities for education, will further decrease available resources for remaining animals. Although some of the effects of public impact can be reduced through

education about zoo population management and the reasons behind decisions to euthanize, this is unlikely to improve problems with individual engagement. There is the problem of managing the conflicting narratives of zoos as caring sanctuaries for animals versus the clinical nature of euthanasia and dissection as presented at Copenhagen. Zoo animal welfare expert Terry Maple described the Marius incident as “a huge public-relations blunder” (quoted in Parker 2017, para. 71) and “counterintuitive to the mission of the zoo community globally” (Maple 2014, para. 3); claiming that the negative effects this had on the zoo visitors and supporters served to undermine the good work zoos are doing in conservation, and overall zoo credibility, not just for Copenhagen but around the world. “It seems as though the public (and especially critics of zoos) do not judge each zoo as an individual institution, but more as a part of a larger zoo community. A crisis kicked off by one zoo could affect other zoos as well” (Schäfer 2015, 179–180). If zoos are to continue with the practice, it seems important that they are able to communicate it in such a way as to keep the public on side.

One final value to consider is that of human emotions. Management euthanasia can be difficult for people, who grieve the loss of particular animals. This is particularly true for keepers, whose job relies on their bond with their animals and their commitment to maintaining and improving the lives of these animals. Euthanasia of favoured animals is going to be upsetting to keepers and this emotional distress, as well as being in itself a negative, can also prevent them from bonding and doing their jobs as well in the future. Lacy (1991, 1995) argues that these sentiments from keepers are actually currently the primary motivating factor against management euthanasia; that even where arguments based on animal rights or welfare are put forward, these are actually a justification to protect our own feelings. Powell and Ardaiole (2016) surveyed keepers and managers on their reaction to particular management euthanasia scenarios and found that keepers were more likely than managers to disapprove of management euthanasia, particularly with animals they are more likely to bond with, such as primates. Maple (2014) points out that “the bond between zoo animals, zoo managers and zoo patrons is based on mutual emotional ties between humans and animals that often originate in childhood. Zoo animals are valuable ambassadors between the wild and human world rather than a commodity displayed for the amusement of humans” (para. 11). This emotional impact is also an important consideration that may weigh against euthanasia in many cases.

## Conclusion

Management euthanasia, the practice of euthanizing healthy surplus animals, is controversial. Traditionally, those arguments against the practice have come from the animal rights camp, who see it as a violation of the rights of the animal involved. Arguments in favour come from the animal welfare perspective, who argue that as the animal does not suffer, there is no harm in the practice and it is justified by its potential benefits. I have argued that an expansion of the welfare view, encompassing longevity and opportunities for positive welfare, give stronger

considerations against management euthanasia, which then require greater benefits to justify its use. I have also presented some of the other considerations that may play a role in making decisions about management euthanasia; from both the perspective of maximising welfare, and in consideration of other values, such as conservation. It has not been my aim here to make a definitive stand about the acceptability of management euthanasia, but to point out that in making such decisions, the welfare of the animal should be given more weight than is perhaps usually considered, when only suffering is taken into account. In the end, each institution will need to make decisions for itself, based on the overall context of the zoo and the particular circumstances surrounding each individual animal (Lacy 1991).

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