

# BETWEEN THE SPECIES

## Comparing Suffering Across Species

### ABSTRACT

Moral life often presents us with trade-offs between the sufferings of some individuals and the sufferings of others. Researchers may need to consider, for example, whether the suffering imposed on animals by a certain line of medical experimentation justifies the relief that the resulting discoveries may bring to (human or non-human) others. Often in such cases, the suffering of some individuals is incomparable with—that is neither greater than nor less than nor equal to—the suffering of others. While this complicates moral decision-making across species, it does not undermine it.

JOHN NOLT  
University of Tennessee, Knoxville  
nolt@utk.edu

Volume 16, Issue 1

Jun 2013

© *Between the Species*, 2013  
<http://digitalcommons.calpoly.edu/bts/>

JOHN NOLT

Moral life often presents us with trade-offs between the sufferings of some individuals and the sufferings of others. Researchers may need to consider, for example, whether the suffering imposed on animals by a certain line of medical experimentation justifies the relief that the resulting discoveries may bring to (human or non-human) others. This paper aims to show that often in such cases, the suffering of some individuals is incomparable with—that is neither greater than nor less than nor equal to—the suffering of others. I suggest, further, that while this complicates moral decision-making across species, it does not undermine it.

### **Comparisons Involving a Single Individual**

Decisions involving many individuals, such as the research case just mentioned, tend to obscure the problem of incomparability. Thus, to avoid introducing too many complications at once, I will begin with simpler cases. The problem is most straightforwardly grasped in cases involving just two instances of suffering—and, most particularly, in cases involving two incomparable instances of suffering that are experienced by the same person.

To say that such instances are incomparable doesn't mean simply that we don't know how to compare the two—that, in other words, we have no very accurate methods of assessing the degree of the suffering. That, of course, is true. But the problem of incomparability is deeper. It is that sometimes one instance of suffering is *in fact* overall neither greater than, nor less than, nor equal to, another. *This* problem would persist even if we did have precise means of assessment.

This use of the term 'incomparable' follows that of Carlson (2008). It is also common in the mathematical literature.

JOHN NOLT

Yet, philosophical usage is inconsistent. Sometimes the terms ‘incommensurable’, ‘indeterminate’ or ‘nonstandard’ are used instead. Chang (2002) describes values as incomparable only if no positive value relation holds between them. Because she thinks that pairs of values may be “on a par” (a positive value relation) even if neither is greater than or equal to the other, her notion of incomparability is stricter than the one used here. For a helpful introduction to the notion, see Hsieh (2007).

A prime source of incomparability is suffering’s qualitative complexity. Having experienced various forms of suffering ourselves, we are able to rank the intensity of some of them. We may, for example, prefer the mild nausea induced by an analgesic to the migraine headache that it relieves. But in other cases we may not be able to choose. Is it better, for example, to live for months in grief and mortal terror under a murderous military siege or to live for a similar time with severe burns? Even those who have experienced both may be unable to decide. The experiences are just too different.

Part of what bewilders judgment in such cases is that suffering is qualitatively multidimensional. Some forms of suffering (e.g., depression, anxiety or grief) are primarily emotional and non-localized—that is, diffused throughout experiential space. Others (e.g., abdominal cramps, migraine headache, and the constant ache of arthritis) are locally painful. Still others are spatially diffuse, like emotion, yet qualitatively more akin to pain; generalized nausea or the malaise of fever are, perhaps, examples.

The various dimensions along which different forms of suffering can be compared make overall comparison not only difficult, but probably to some degree arbitrary. Living under

JOHN NOLT

siege, for example, may be worse along the “emotional” dimension, while enduring severe burns is worse on the “physical pain” dimension. If so, each form of suffering is greater along one dimension and less along another. To reach an overall comparative judgment, then, we must know how much “weight” to give each of these dimensions. But it is not clear that there is some single non-arbitrary weighting scheme. If there are many possible weighting schemes, some of which make living under siege worse and some of which make the burns worse, and none of these schemes is objectively right, then, overall, the two instances of suffering are incomparable. Our inability to rank the experiences reflects a factual indeterminacy.

One might suppose that our inability to rank diverse experiences of suffering simply shows that we are indifferent between them, and hence that they are equal. But this is a mistake. For, if they were equal, then a small increase or decrease in one (keeping the other unchanged) would make them unequal. But often such small increases or decreases do not affect our ranking. If we cannot decide whether months of suffering from serious burns is better or worse than months of grief and terror under siege, then we will probably still not be able to decide between the burns and a few days more under siege. The extra days clearly make living under siege worse than it would have been without them. But they need not make living under the siege worse than living with the burns, as they must if living under siege without these extra days and living with the burns are equally bad. (Readers familiar with the literature on incomparability will recognize this reasoning as a version of the “small-improvement argument”—though the present case concerns a deterioration of the situation, not an improvement. See Chang (2002), sec. I.)

JOHN NOLT

Now it might be objected that someday researchers may find some behavioral or neuropsychological quantity that enables them to decide by direct measurement what we can't decide by subjective comparison—say, that the grief and terror of living under siege is equal to a certain level of suffering from burns (assuming a fixed time period for both). But what would the equality of two such measurements represent? If the measurements were calibrated by subjective reports or by behavioral responses, a judgment of equality might represent nothing more than the individual's indecision. But, as we just saw, indecision between two forms of suffering does not guarantee their equality. It could reflect incomparability resulting from assessments that point in different directions along different qualitative dimensions of the suffering. In that case, it would be a mistake to suppose that our measurement represented some factual overall degree of suffering which happens, in the two instances in question, to be equal. The measured equality would simply be an artifact of the measurement. The measurement is meant to give us an objective scale on which every overall degree of suffering is less than or greater than or equal to every other. But there may be little reason to think that such a scale must correspond neatly to anything in brain functioning or human experience.

### **Cross-Species Comparisons**

There is even less reason to believe in such an objective ranking for comparisons of the sufferings of different individuals, and less reason still if those individuals are of different species. Let's try to imagine what would be involved in accurately calibrating measurements across species whose nervous systems and behavioral responses vary widely. How could we tell, for example, whether the suffering of a deer with extensive and severe burns from a forest fire is greater than or less than or

## JOHN NOLT

equal to the suffering of an uninjured human who experiences the grief and terror of living under siege for a similar period of time? Given the disparities between these two cases (not to mention the possibility that deer may suffer in ways that humans don't and vice versa) there may well be nothing in which the equality of the suffering of these two individuals, or the greater intensity of the suffering of one of them, could consist. The two kinds of suffering may just be different in a way that precludes factual total rank ordering. They may be, in a word, incomparable.

Incomparability is magnified when we vary not only the intensity of the suffering in various dimensions but also its duration. Suppose for the sake of argument that, contrary to the claims of the previous paragraph, we can combine the various qualitative dimensions of suffering into a single linear scale of overall intensity. Still, when we consider duration as well (as we must, because it too contributes to overall suffering), we are, once again, dealing with two distinct scales. To estimate the overall suffering we must now decide how each contributes to it. With a single human individual this is often possible. I, for example, might prefer great suffering of brief duration to lesser suffering of longer duration. But others would weigh duration more in comparison to intensity, still others would weigh it less; and some might weigh its relative contribution differently at different times. Clearly, even among humans, there are many possible weighting schemes.

These are likely to proliferate in cross-species comparisons. How, for example, given likely differences in time perception among animals of different species, are we to select a single species-sensitive weighting scheme that accurately reflects the contributions of both intensity and duration to total suffering?

## JOHN NOLT

The range of possible weighting schemes is very wide. There seems to be no good reason to believe that in each case exactly one of these yields the “true” total. Indeed, that nature should so arrange itself is exorbitantly improbable. Thus any *a priori* tendency we may have to suppose that there must be a uniquely true weighting scheme is likely to be product of failure of imagination or wishful thinking. And there is, so far as I can tell, not much, if any, empirical evidence for this belief. Thus, once again, it is difficult to escape the conclusion that, in some cases, the overall suffering of one animal on a given occasion, considering both its intensity and duration, is *in fact* neither worse than nor better than nor equal to the suffering of another animal on another occasion. It is just different.

The existence of incomparability does not imply, of course, that comparisons across species, even when they involve both intensity and duration, are always impossible. The agony and emotional distress of a human slowly dying of bone cancer, for example, is undoubtedly worse than a raccoon’s suffering from a painful bite wound. It is worse because it is worse along most or all relevant dimensions; the pain alone is probably more severe and (let us assume) longer lasting, and it is accompanied by multiple forms of intense emotional misery that are likely absent in the case of the raccoon. Thus, for some pair-wise comparisons, ranking of suffering across species is possible. But for others, as I have argued, neither instance of suffering is greater than nor less than nor equal to the other. In mathematical terms, I am claiming that degrees of suffering among animals (both human and nonhuman) are partially, but not linearly, ordered. They cannot all be arranged on the same linear scale.

## Parity

Ruth Chang has suggested that when quantities are incomparable in this sense they may nevertheless be *comparable* in different way—a kind of rough equality that she calls “being on a par” or “parity.” Yet although much has been written regarding Chang’s concept of parity over the last decade and a half, it remains dauntingly obscure. Various analyses have been offered, but all have problems. None (so far as I know) has found practical application, and none is widely accepted. (For a recent but unsuccessful attempt to analyze the concept, see Carlson (2010).)

Since the literature on parity is often technical, a detailed discussion of the concept’s difficulties is out of place here. I will mention only one disappointing feature that infects all versions: intransitivity. Suppose, as in the example above, that for a single individual the sufferings of (A) being under siege for a certain time period and (B) extensive burns for a comparable period are on a par. As we saw above, the suffering of (A+) being under siege for a few more days (or hours, or even minutes) may also be on a par with (B). So (A) is on a par with (B) and (B) is on a par with (A+), but (A+) is not on a par with (A), since it is straightforwardly worse than (A). That pattern is the intransitivity of parity. Because parity is intransitive, its logic is much weaker than the logic of equality; there is, therefore, comparatively little that one can usefully do with the concept.

In sum, efforts to develop an alternative notion of comparability that we might employ in comparisons of suffering across species have so far not achieved notable success. While it seems unlikely that we will ever find a single justifiable notion of parity that will simplify comparison by allowing us to treat incomparable forms of suffering as equal, I do think that

JOHN NOLT

over time we can adjust our moral thinking to the complexity of comparative animal experience. For while incomparability exists, it is limited—and there are ways of working around it.

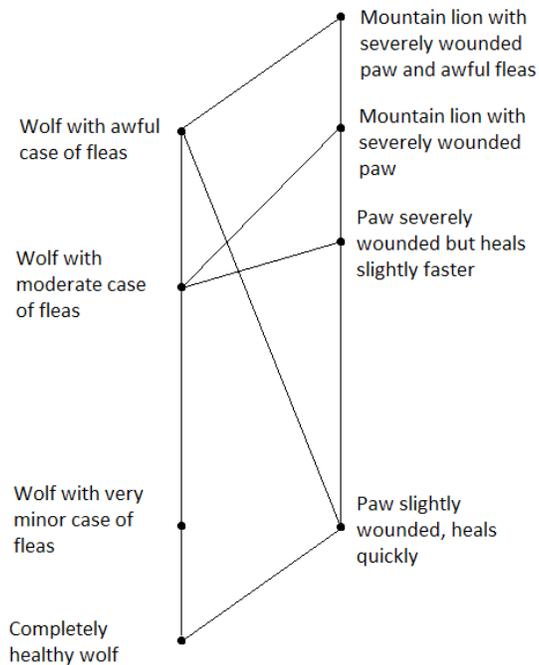
### **Bounded Incomparability**

Consider, for instance, a wolf's mild but annoying flea infestation and a large, painful suppurating wound in the paw of a mountain lion. If these are of equal duration, then (assuming the time sense of a mountain lion is not too different from the time sense of a wolf) it seems likely that the suffering of the mountain lion is greater. If we imagine the mountain lion's wound to be of even greater duration, then the difference is greater still. If the wound heals more quickly, by contrast, or the fleas plague the wolf for a longer time, then the difference in total suffering is less. If the mountain lion's wound is quite minor and heals yet more quickly, and the wolf's fleas are truly awful and last still longer, then the wolf suffers more. But there is no compelling reason to think that as the duration and intensity of the two forms of suffering are varied continuously in this way, there is necessarily some point, between clear cases in which the mountain lion's suffering is worse and clear cases in which the wolf's suffering is worse, at which the total suffering of the two animals is equal. It is logically possible—indeed, quite likely, I think—that the suffering of the two animals in some or all of the intermediate cases is incomparable. Such incomparability could result either from the qualitative differences between the two forms of suffering or the indeterminacy of the relative weighting of intensity and duration, or both.

Regardless of the source, the noteworthy point is that the incomparability is bounded—that is, confined within a certain range. The diagram below indicates how relationships of comparative suffering might be arranged among cases like those

## JOHN NOLT

just mentioned. A line or series of lines connecting a higher point down to a lower one indicates that the degree of suffering represented by the higher point is greater than the degree of suffering represented by the lower; points unconnected in this way represent mutually incomparable degrees of suffering. (Mathematicians call this a Hasse diagram for a partially ordered set. See Trotter (1992, 5)).



The diagram represents the suffering of the mountain lion with a severely wounded paw and awful fleas as worse than that of the wolf with awful fleas, which in turn is worse than that of the wolf with a moderate case of fleas, and so on. (I am not, of course, claiming that the diagram is empirically correct; its

JOHN NOLT

purpose is merely illustrative.) While some degrees of suffering (e.g., the suffering of the wolf with awful fleas and the suffering of the mountain lion with a severely wounded paw) are represented here as incomparable with one another, all the degrees represented are bounded by extreme cases. All are less than or equal to the suffering of the mountain lion with a severely wounded paw and awful fleas, and all are greater than or equal to the suffering of the completely healthy wolf (which, presumably, is not suffering at all). Such bounds are often available, so that it is often possible to specify a range within which incomparable degrees of suffering lie. So, for example, according to the diagram, while (a) the suffering of the wolf with awful fleas and (b) the suffering of the mountain lion with a severely wounded paw are incomparable with one another, they are bounded by above by the suffering of the mountain lion with a severely wounded paw *and* awful fleas and below by the suffering of the wolf with a moderate case of fleas. We may thus infer that any suffering greater than or equal to the suffering of the mountain lion with a wounded paw and awful fleas is greater than both (a) and (b), and any suffering less than or equal to that of the wolf with a moderate case of fleas is less than both (a) and (b). Thus, though (a) and (b) are incomparable with one another, we can still obtain a relatively sharp idea of how they both fit into the range of degrees of suffering generally. There is, in other words, much to which we can compare them both.

### **Incomparability and Equality Principles**

Even so, incomparability complicates moral thinking. Many animal ethicists, for example, among them Peter Singer (2009, ch. 1) and David DeGrazia (1996, ch. 3) assume equality principles, according to which a given quantity of suffering has the same moral importance whether it occurs in a human or a non-human. Such principles tacitly require not only *equal* consider-

JOHN NOLT

ation for *equal* suffering but *greater* consideration for *greater* suffering. But how should moral consideration be apportioned when one instance of suffering is incomparable with another?

The most obvious answer—giving equal consideration to incomparable degrees of suffering—won't do, for reasons similar to those which vitiate Chang's notion of parity. Consider again the diagram above. The suffering of the lion with a paw that is slightly wounded and heals quickly is incomparable with (c) the suffering of the wolf with a moderate case of fleas, and also with (d) the suffering of the wolf with a minor case of fleas. If we gave it the same consideration as (c) and the same consideration as (d), then we would have to give (c) and (d) the same consideration. But (c) deserves more consideration, according to the equality principle. Hence we can't, on pain of inconsistency, simply add to equality principles the stipulation that incomparable cases deserve equal consideration too.

I will not attempt here to formulate a consistent principle of moral consideration that is applicable even to cases involving incomparable values. But such a principle is pretty clearly not out of the question. Where two or more degrees of suffering are incomparable, it could, for example, use evident bounds of this incomparability to fix limits on the range of moral consideration appropriate for those degrees of suffering.

### **Aggregating Suffering**

We have so far intentionally bypassed yet another source of incomparability: aggregation of the sufferings of many individuals. When we consider suffering borne not by just one animal but by many, each instance adds to the total. If, for example, 7 billion chickens suffer annually as a result of their confinement and slaughter in factory poultry operations, and if, for simplic-

JOHN NOLT

ity's sake, we assume that each suffers equally, then the total is 7 billion times the suffering of just one chicken.

Incomparability has not so far entered the picture. But it does enter if we try to make certain kinds of cross-species comparisons. To see this, I beg the reader to bear with me through an artificially simple (though still, I fear, somewhat tedious) thought experiment. The intended payoff should be not only an explanation of how aggregation itself can produce incomparability, but also a better sense of the significance of incomparability for moral theory.

Suppose that something like 300 million Americans eat the 7 billion chickens just mentioned. Call this circumstance the *current scenario*. And compare it with an admittedly unrealistic *vegetarian scenario* in which chicken is not industrially produced and, indeed, not eaten at all. Suppose that each of the 300 million Americans would, under the vegetarian scenario, suffer to a certain degree from the absence of chicken. How much they would suffer depends on how we fill in the details. If, to take one extreme, we suppose that the industrial chicken operations are eliminated and replaced with nothing, then the suffering, both from unemployment and hunger would be considerable. If, at the other extreme, we suppose that chicken meat is replaced by a vegetable product that costs the same and tastes the same and whose manufacture employs all those formerly employed in the chicken industry under similar (or better) working conditions and at the same wages, then, while there might still be discontent, the change would result in little actual suffering.

JOHN NOLT

Suppose that the amount of human suffering in the vegetarian scenario is somewhere between these extremes—an annual per capita suffering of degree X. Then it may be that:

(A1) The suffering of one human to degree X in the vegetarian scenario is less than the suffering of each chicken under the current scenario.

If (A1) holds, then since there are 7 billion chickens and only 300 million humans, the total suffering of the chickens is much greater in the current scenario than the total suffering of the humans in the vegetarian scenario.

Suppose, however, that suffering of level X is incomparable with the suffering of each chicken in the current scenario. Then there are two possibilities:

(B1) If the incomparability is relatively narrow, the fact that there are so many more chickens might still make the suffering of the chickens in the current scenario greater than the suffering of the humans in the vegetarian scenario, or

(B2) If the incomparability is wide, the suffering of the 7 billion chickens in the current scenario might in total be incomparable with 300 million times X.

Or, again, it may be that suffering of degree X is greater than the suffering of each chicken in the current scenario. Then there are three possibilities:

(C1) Suffering of degree X is greater than or equal to  $23\frac{1}{3}$  times the suffering of each chicken in the current scenario, so that the suffering of the 300 million

JOHN NOLT

Americans in the vegetarian scenario is greater than or equal to the suffering of the 7 billion chickens under the current scenario,

(C2) Suffering of degree X is less than  $23\frac{1}{3}$  times the suffering of each chicken in the current scenario, so that, given the greater number of chickens, the suffering of the chickens in the current scenario is greater than the suffering of the humans in the vegetarian scenario, or

(C3) Suffering of degree X is incomparable with  $23\frac{1}{3}$  times the suffering of each chicken, so that even though the suffering of each human in the vegetarian scenario is greater than the suffering of each chicken in the current scenario, the total suffering of the chickens in the current scenario is incomparable with the total suffering of the humans in the vegetarian scenario.

(Incidentally, my use of the number  $23\frac{1}{3}$  is a bit facetious. I don't intend to suggest that such precision is really possible.)

Case (C3) is noteworthy in that it shows how, even if the suffering of each chicken under the current scenario is comparable with the suffering of each human under the vegetarian scenario, the total suffering of the chickens in the current scenario may be incomparable with the total suffering of the humans in the vegetarian scenario. In (C3), in other words, though the sufferings of members of the populations are comparable individually, they are not comparable in aggregate. It is in this sense that aggregation itself can be a source of incomparability. In (B2), by contrast, though the two populations are likewise incomparable in aggregate, this incomparability arises from the fact

JOHN NOLT

that they are incomparable individually. Here the aggregation merely preserves this already existing incomparability.

### **Aggregation, Incomparability and Ethics**

As was noted above, the occurrence of incomparability in the case of comparisons of just two instances of suffering demonstrates the inadequacy of current formulations of equality principles—the very principles which for consequentialists like Singer, apportion moral consideration. Incomparability resulting from aggregation demonstrates the same thing. It adds, moreover, a novel complication: since aggregation is a kind of summation, how are we to make sense of sums involving incomparable quantities? Fortunately, that complication is merely technical, and it has a satisfactory solution (see Carlson 2008)—though one too abstruse to go into here.

To some extent Peter Singer himself noticed the general difficulty long ago and saw that it is not insurmountable:

It may be objected that comparisons of the sufferings of different species are impossible to make and that for this reason when the interests of animals and humans clash the principle of equality gives no guidance. It is probably true that comparisons of suffering between members of different species cannot be made precisely, but precision is not essential. Even if we were to prevent the infliction of suffering on animals only when it is quite certain that the interests of humans will not be affected to anything like the extent that animals are affected, we would be forced to make radical changes in our treatment of animals ... (Singer 2002, 16-17)

JOHN NOLT

I have argued that the lack of precision is due not merely to a lack of techniques to make the comparison, but also, in many cases, to the incomparability of the sufferings themselves. Yet it is also apparent that, despite the threat of incomparability, Singer is right that in some cases “the interests of humans will not be affected to anything like the extent that animals are affected.”

Three such cases are illustrated in the example of the previous section: (A1), (B1) and (C2). (A1), the most straightforward, is perhaps the sort of case that Singer had in mind. In this case, the suffering of each individual chicken is worse than the suffering of each individual human; and, since there are more chickens, the total suffering of the chickens is indisputably greater. But greater total suffering of the chickens is not ruled out even if, as in (B1), the sufferings of individual chickens and humans are incomparable; for in (B1) the incomparability is narrow enough so that the greater number of chickens predominates. Similarly, in (C2) the suffering of each individual human is worse than the suffering of each individual chicken, but the greater number of the chickens suffices, once again, to make the total suffering of the chickens greater.

Note also that cases such as (B2) and (C3), in which aggregate suffering in one scenario is incomparable with aggregate suffering in another, illustrate once again the inapplicability of standard equality principles. As was explained above, it is wrong to regard the sufferings of the two scenarios in (B2) or of the two scenarios in (C3) as equal. Some more nuanced approach is required.

Still, it might be objected that, however important incomparability is for consequentialists, it is of no concern for theories

JOHN NOLT

that do not rely on this sort of aggregation. Tom Regan, for example, famously argues that moral concern should center on the degree of harm to individuals, and that where harms are unequal “numbers don’t count.” Thus, given a choice between inflicting a given level of suffering to each of many innocent individuals and slightly greater level of suffering to just one, Regan thinks we should choose the former (2004, 308). This is because in Regan’s theory right action is determined by rights-based rules, not by the best aggregate outcome.

Still, Regan concedes this much to the consequentialists: that in cases in which all would suffer *equally*, numbers do count; that is, in a forced choice, we should inflict suffering on the few rather than on the many (2004, 305). But now (the astute reader has seen this coming) what if the suffering of some of these individuals is not equal to but rather incomparable with the suffering of the others? Do numbers count then? Regan, of course, has no answer. But, to be fair, no prominent animal ethicist has attended to such questions. Yet, as I have argued, incomparability is to be expected in cross-species comparisons. It is time to give it the attention it deserves.

### References

- Carlson, Erik. 2008. “Extensive Measurement with incomparability.” *Journal of Mathematical Psychology* 52: 250–259.
- . 2010. “Parity Demystified.” *Theoria* 76: 119–128.
- Chang, Ruth. 2002. “The Possibility of Parity.” *Ethics* 112: 659–688.

JOHN NOLT

- DeGrazia, David. 1996. *Taking Animals Seriously: Mental Life and Moral Status*. Cambridge: Cambridge University Press.
- Hsieh, Nien-hê. 2007. "Incommensurable Values." *Stanford Encyclopedia of Philosophy*. Accessed March 27, 2012. <http://plato.stanford.edu/entries/value-incommensurable/>.
- Regan, Tom. 2004. *The Case for Animal Rights*. Berkeley: University of California Press.
- Singer, Peter. 2002. *Animal Liberation*. New York: HarperCollins.
- Trotter, William T. 1992. *Combinatorics and Partially Ordered Sets: Dimension Theory*. Baltimore: Johns Hopkins University Press.