Notre Dame Journal of Law, Ethics & Public Policy

Volume 23
Issue 2 *Symposium on the Environment*

Article 9

February 2014

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HARM TO SPECIES? SPECIES, ETHICS, AND CLIMATE CHANGE: THE CASE OF THE POLAR BEAR

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INTRODUCTION

The U.S. Fish and Wildlife Service listed the polar bear species as threatened under the U.S. Endangered Species Act in May 2008.[1] Models indicate that Arctic sea ice will dramatically decline over the twenty-first century.[2] Since polar bears hunt, mate, and travel on sea ice, they cannot survive without it. If ice melts earlier, and re-forms later, polar bears may have insufficient fat reserves to survive the ice-free season; in addition, as they weigh less, their reproductive ability diminishes.[3] Some studies already suggest that populations of polar bears are in decline and that bears weigh less than they did several decades ago.[4]

The listing of the polar bear species as threatened has been controversial; after the listing, the Interior Department was sued both by environmental organizations, and by industry, hunters, and the State of Alaska.[5] One reason for this controversy is the *cause* of the projected reduction in Arctic sea-ice: anthropogenic climate change.[6] The protection of a species threatened by climate change would, after all, appear to require either measures aimed at reducing such climate change or measures that can mitigate its impact. In the case of polar bears, since there

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1. *See* Felicity Barringer, *Polar Bear Gains Protection as a Threatened Species*, N.Y. TIMES, May 15, 2008, at A19.

2. ERIC DEWEAVER, U.S. DEP'T OF THE INTERIOR, U.S. GEOLOGICAL SURV., UNCERTAINTY IN CLIMATE MODEL PROJECTIONS OF ARCTIC SEA ICE DECLINE: AN EVALUATION RELEVANT TO POLAR BEARS 22 (2007), http://www.usgs.gov/newsroom/special/polar_bears/docs/USGS_PolarBear_DeWeaver_GCM-Uncertainty.pdf. This reduction in sea ice is now actually being observed. *See* Press Release, Nat'l Snow & Ice Data Ctr., Arctic Sea Ice Down to Second-Lowest Extent; Likely Record-Low Volume (Oct. 2, 2008), http://nsidc.org/news/press/20081002_seaice_pressrelease_1.pdf.

3. Andrew E. Derocher et al., *Polar Bears in a Warming Climate*, 44 INTEGRATIVE & COMP. BIOLOGY 163, 165, 170 (2004).

4. *See id.*

5. *See* Associated Press, *Alaska Sues Over Listing of Polar Bear as Threatened*, ANCHORAGE DAILY NEWS, Aug. 5, 2008, *available at* http://www.adn.com/polarbears/story/484125.html; Dina Cappiello, *Polar Bear Rule Prompts Suit*, ANCHORAGE DAILY NEWS, Aug. 29, 2008, *available at* http://www.adn.com/polarbears/story/509624.html.

6. *See* Nat'l Snow & Ice Data Ctr., Arctic Sea Ice News & Analysis: Frequently Asked Questions About Arctic Sea Ice, http://www.nsidc.org/arcticseaicenews/faq.html#anthropogenic (last visited Mar. 28, 2009).

seems to be little possibility of mitigating impact, climate policy is the only obvious mechanism for protection. However, that the Endangered Species Act should be used as a "back-door" way of creating climate policy is something that the U.S. Department of the Interior, in its announcement of the polar-bear listing, took deliberate steps to avoid.[7]

Concerns about the threats a changing climate poses to species are not, of course, confined to polar bears. A 2004 study in *Nature* argued that by 2050 even on the *lowest* estimates, eighteen percent of existing species may be committed to extinction due to climate change.[8] In this sense, there's nothing "special" about the situation of the polar bear. However, the polar bear's iconic status as the poster-child of the Arctic, added to the recent bitter political controversy about its listing, makes it a particularly salient case on which to focus here, even though much of what I'll argue could also transfer to at least some other species threatened by climate change.

WHY WORRY ABOUT THE EXTINCTION OF POLAR BEARS?

Polar bears are peculiarly culturally significant (not only in their popular media representation,[9] but also to Inuit peoples in Alaska and Canada[10]). And they are important top predators in Arctic ecosystems;[11] the potential impact of their decline or extinction on the systems of which they are part is not known. Whether these ecosystems are valued for their usefulness, or for other aesthetic or ethical reasons, the loss of polar bears at best diminishes such systems, and could be damaging to them. These reasons might all contribute to an argument that—other things being equal—the polar bear species should be protected. However, in this paper, I want to focus on a different reason that's sometimes

7. News Release, U.S. Dep't of the Interior, Secretary Kempthorne Announces Decision to Protect Polar Bears Under Endangered Species Act (May 14, 2008), http://www.doi.gov/news/08_News_Releases/080514a.html ("I want to make clear that this listing will not stop global climate change or prevent any sea ice from melting. . . . That is why I am taking administrative and regulatory action to make certain the ESA isn't abused to make global warming policies.").

8. Chris D. Thomas et al., Letters, *Extinction Risk From Climate Change*, 427 NATURE 145 (2004).

9. *See, e.g.*, The Coca-Cola Comp., Coca-Cola Conversations: Our Coca-Cola Polar Bear Turns 15 (Dec. 3, 2008), http://www.coca-colaconversations.com/my_weblog/2008/12/our-coca-cola-p.html (describing the Coca-Cola Polar Bear as "one of the most popular symbols of [the company's] advertising").

10. *See, e.g.*, Polar Bears Int'l, Bear Facts: Inuit and Polar Bears, http://www.polarbearsinternational.org/bear-facts/inuit-and-polar-bears/ (last visited Apr. 9, 2009) (noting that "[n]ative hunters considered [the polar bear] to be wise, powerful, and 'almost a man'").

11. *See, e.g.*, ESPEN O. HENRIKSEN ET AL., NORWEGIAN POLAR INST., MONITORING PERSISTENT POLLUTANTS IN ARCTIC TOP PREDATORS: LESSONS LEARNED FROM RECENT DATA ON POLAR BEAR AND GLAUCOUS GULL 4 (2000), http://miljo.npolar.no/mosj/MOSJ/reviews/review004.pdf.

given for protecting the polar bear species, independently of its cultural or ecosystemic importance: that the polar bear species has some kind of moral status *in itself*. Were humans to be causally responsible for the extinction of the species, they would in some sense have committed a moral wrong with respect to, or directly towards, the species itself. This intuition seems to be fairly widespread, but (as I'll suggest in this paper) it's very difficult to find good reasons to support it.

One key problem here concerns the way in which *groups* or *collectives* are central to extinctions caused by anthropogenic climate change. The cause of climate change, after all, is not the actions of one individual human, but rather the behavior of a group—human beings, distributed over time and space. And, seen in one way at least, the "victim" of climate change here—polar bears—*also* looks like some kind of a group (though how we might think about this "groupiness" is part of the point of this paper). So, we are concerned both with collective moral agents (human beings), and with, in some sense, a collective moral patient (polar bears). But claims both about the responsibility of collective moral agents, *and* the status of collective moral patients, raise notorious philosophical problems. How can groups—especially one as loose as "human beings"—be morally responsible for doing something? And how can a group have moral status in its own right, or be harmed as a group?

Both these problems (in other contexts) have sparked a substantial literature, and to consider both would be impossible in one paper.[12] So, I will here only focus on one "side" of this problem, as it were; the idea that a species might have moral status, or that it could be harmed *qua* species. Do ideas like this make sense? Could endangering a species, or rendering it extinct, be thought of as destroying something of moral importance, irrespective of its usefulness to ecosystems or to human beings? Can we make sense of the idea of a "species harm," and if so, what would this mean?

To address these questions, I'll first examine a view that's sometimes defended within environmental ethics: that a species is more properly thought of as a kind of *individual* than a kind of *group*, and that it's this individual-like quality that forms the basis of an attribution of moral status. I'll maintain that this view is deeply problematic. Instead, I'll consider a second, rarely discussed view: that even though (in this context at least) a species is better thought of as some kind of group, just as it's argued that we can make sense of group harms in the human case, so

12. For discussion about collective action problems in relation to climate change, see, e.g., Walter Sinnott-Armstrong, *It's Not* My *Fault: Global Warming and Individual Moral Obligations*, *in* PERSPECTIVES ON CLIMATE CHANGE: SCIENCE, ECONOMICS, POLITICS, ETHICS 285 (Walter Sinnott-Armstrong & Richard B. Howarth eds., 2005); Stephen M. Gardiner, *Ethics and Global Climate Change*, 114 ETHICS 555 (2004); Dale Jamieson, *When Utilitarians Should Be Virtue Theorists*, 19 UTILITAS 160 (2007).

also we can think of group harms in the species case. I'll call this the idea of *species harm*. I'll try to work out *how* we would have to conceive of *which* species for this idea to be plausible, and then consider whether climate change could in fact be an instance of such species harm.

SPECIES AS INDIVIDUALS WITH MORAL STATUS

The idea that a species should be viewed not as a *class* or *set* but rather as a kind of concrete particular, an *individual* of some kind, has been widely defended by philosophers of biology.[13] For, they argue, a species is connected not by the similarity relations common to the constituents of sets, but rather by the causal and spatiotemporal connections an individual might have. So, David Hull maintains, a species is a spatiotemporally localized cohesive and continuous entity.[14] After all, Hull suggests, the individuals in a species are not bound together by structural similarity, but are rather "lineages formed by the imperfect copying processes of reproduction."[15]

These *descriptive* arguments about how best to conceive of species have been taken up by some environmental ethicists as a basis for claims about their *moral* status. Lawrence Johnson, for instance, argues that a species is the kind of individual that's a *living entity*, one that takes the form of an ongoing process that maintains near equilibrium with its environment.[16] This kind of life process, he maintains, has *interests*. Its interests are in whatever contributes to its coherent and effective functioning as the particular ongoing life process which it is.[17] Such species interests, Johnson maintains, can be distinguished from the sum of the interests of individuals: something could be in the interests of a species that's not in the interests of the individuals that are part of it.[18] This claim leads Johnson to take a further step: he argues that the interests a

13. Species are the subject of debate in a variety of ways in philosophy of biology: species eliminativists, for instance, argue that species are a human projection onto the natural world. *See, e.g.*, Marc Ereshefsky, *Species Pluralism and Anti-Realism*, 65 PHIL. SCI. 103 (1998). For the purposes of this paper, I'm going to assume that there are such things as species, and focus on discussions about what kind of "things" they are.

14. David L. Hull, *A Matter of Individuality*, 45 PHIL. SCI. 335, 336 (1978); *see also* Judith K. Crane, *On the Metaphysics of Species*, 71 PHIL. SCI. 156 (2004); Ernst Mayr, *What Is a Species, and What Is Not?*, 63 PHIL. SCI. 262 (1996).

15. Hull, *supra* note 14, at 341.

16. Lawrence E. Johnson, *Future Generations and Contemporary Ethics*, 12 ENVTL. VALUES 471, 478 (2003).

17. *See id.* at 479–82.

18. *See id.* at 479–80 ("We have identity and interests on our own level, and not just as an aggregate. So too does a species, as witness the interest some species have in being preyed upon.").

species has are of *moral significance*; thus, other things being equal, we *should* protect and promote species' interests.[19]

Johnson's argument, or something like it, could provide us with an account of why the extinction of the polar bear species through anthropogenic climate change is a moral problem with respect to *the species itself*. For the species "polar bear" is here understood as a kind of individual, a living entity, and (on this account) entities like this have moral status. Human beings are (normally) moral agents; if their actions lead to the endangerment or extinction of a species, and a species has moral status, then in endangering or destroying the species a moral wrong has occurred.[20]

Let's look at this argument more closely. Much of Johnson's case is plausible. The position that a species should be viewed as (in some way) an individual, or at least, as more individual-like than class-like, though contested, is reasonably widely accepted in a biological context.[21] And it's not difficult at least to make sense of the claim that the interests of a species are not the same as the sum of the interests of the existing individuals that are part of it.[22] So, for instance: suppose we knew of a species that had only one hundred remaining sentient individuals, and that for the species to avoid extinction, we would need to carry out distressing hormonal treatment, invasive surgery, egg development, fetal transplantation, and so on, on all of them. As a result, all of them would suffer, and some might never fully recover. We can still, it seems, make sense of saying that this would be "in the interests of the species," even though it is not in the interests of any single existing individual (each of these existing individuals, indeed, has been *harmed*). For, if a species has any interests at all, surely one of them must be in continuing to exist over time. Likewise, Holmes Rolston suggests that individual members of a species would benefit from carrying genes with less variation and better repetition in reproduction than they actually do; such variations can be

19. *Id.* at 474 ("I think it also true that we need to reconsider, in some ways, what individuals are and also what their morally considerable interests might be.").

20. I'll leave aside, as I said earlier, worries about the collective nature of human agency in this case.

21. Though not uncontroversially so. *See* Brent D. Mishler & Robert N. Brandon, *Individuality, Pluralism, and the Phylogenetic Species Concept*, 2 BIOLOGY & PHIL. 397 (1987) (arguing that the class/individual distinction is oversimplified, that the concept of "individuality" has a number of sub-concepts that aren't all relevant to species, and that some species will not be fully individuals). There might also be reason to question whether the use of "individual" here shares much in common with an individual organism, the relevant comparison case, but I will not challenge this further.

22. *See generally* Ronald Sandler & Judith Crane, *On the Moral Considerability of* Homo Sapiens *and Other Species*, 15 ENVTL. VALUES 69 (2006). Sandler and Crane do a good job in unpacking other aspects of Johnson's argument that fall between accepting that a species is a kind of individual and that a species has moral status, although their account does not need repeating here. It's also worth noting that questions about intention are raised here; I'll return to this later in the paper.

detrimental to individuals.[23] But overall, Rolston argues, such variation is good for the species: it's in a species' interests.[24]

But though we can make sense of this idea, an alternative reading is possible. After all, the time-scale over which individuals' interests are being summed here is very short: that is, only those individuals *presently* constituting the species. Suppose—in the zoo case—the distressing reproductive treatments were successful. Presumably, there would then be many more individuals of that species in the future, who would not have to undergo such distressing treatments in order to keep the species going. If we took a long-term view of the species, and summed individuals' interests over time, it's no longer clear that the summed interests of the individuals that are part of the species *would* come apart from the interests of a species understood as an individual. Equally, in the case of gene variations detrimental to existing individuals, the "species benefit" could be construed as one accruing to *future* individuals of the species, and thus to the individuals forming the species over time, rather than to the species construed as being the kind of individual that has interests.

But maybe there are, still, ways of reintroducing a distinction between summed interests of individuals, and the interests of the species as a whole. Suppose this species could persist into the future, but that if it did, *all* the individual organisms that would compose it, present *and* future, would have painful and unpleasant lives—so bad, let's say, that they are lives not worth living. It might be argued, then, that although it is not in the interests of any of the individuals in the species—present *or* future—to live their lives, it is in the interests of the species that they should, for this perpetuates the species.

But this answer seems to raise more questions than it resolves. For it pushes us to consider what we actually mean by saying that something is "in a species' interests." Would a species really be doing better by being composed solely from organisms with miserable lives, rather than by becoming extinct? Is there *any* situation in which it would be better for a species to become extinct than to continue to exist? We generally accept that a living sentient organism can be in such terrible unrelenting pain that it would be better off dead; but since a species *qua* "individual" can't experience anything, it's not obvious how the pain of all the individuals that compose it could count as an argument against its continued existence. Although we might think that a species whose members all

23. Holmes Rolston III, *Duties to Endangered Species*, 35 BIOSCIENCE 718, 723 (1985) ("Less variation and better repetition in reproduction would, on average, benefit more individuals in any one next generation . . . .").

24. *Id.* ("But on a longer view, variation can confer stability in a changing world. A greater experimenting with individuals, although this typically makes individuals less fit and is a disadvantage from that perspective, benefits rare, lucky individuals selected in each generation, with a resulting improvement in the species.").

have lives not worth living cannot be thought of as flourishing, presumably bare persistence would still be a species' most basic interest.

These questions indicate that there's something odd just in thinking about what constitutes a species' interests. For instance, would it be better to have many domesticated members or fewer wild members? Or, to use an example of Norton's, "Would it be in the interest of the species to come under steady adaptational pressure that both fuels its decline in population and, simultaneously, increases the likelihood that it will speciate before it becomes extinct?"[25] It's not at all clear what actually would be "good" for a species, nor what would be bad for it, over and above what's good for the individuals that compose it.[26]

But still, let's concede this point, for the sake of argument. Let's accept that a species is a kind of individual that has interests separable from the sum of the interests of individuals that compose it over time.[27] Still, there remains the problematic final step of claiming these interests to be of moral concern. Johnson's most substantial argument here (in the case of the human species) merely maintains that, since individual humans can have morally significant interests of which they are not aware, awareness is not required for the possession of morally significant interests.[28] So, for instance, someone would have a morally significant interest in not being raped even if they were unconscious and would never know it had happened. Thus, he suggests a species—even though *qua* species it has no awareness—can have morally significant interests, since one need not be aware of a morally significant interest in order to have it. However, as Sandler and Crane point out, this begs the question. If individual humans have morally significant interests of which they are unaware, it is because individual humans have—for *other* reasons—moral status, and such morally-significant interests "piggy-back" on their pre-existing moral status.[29] But no *other* grounds have been produced for the moral status of species. Johnson needs to make a case as to why "individuals" that lack *any* awareness, including awareness of their

25. BRYAN G. NORTON, WHY PRESERVE NATURAL VARIETY? 171 (1987).

26. *See* LAWRENCE E. JOHNSON, A MORALLY DEEP WORLD: AN ESSAY ON MORAL SIGNIFICANCE AND ENVIRONMENTAL ETHICS 178 (1991). Johnson maintains that a species not only has interests in survival, but also in continuing in equilibrium with its environment, fulfilling its nature and self-identity as a species, and in fulfilling its nature in its individual species members. These claims seem unclear or implausible in different ways.

27. For further critical reflection on these points, see Sandler & Crane, *supra* note 22.

28. Johnson, *supra* note 16, at 479.

29. Sandler & Crane, *supra* note 22, at 76 ("We humans do have interests that may properly be described as non-conscious, and those interests are often morally considerable. But our interests must be considered because we are morally considerable individuals. If an individual is morally considerable, some of its non-conscious interests must be considered.").

own interests, *could* have moral status on the basis of those interests. As John O'Neill plausibly argues about claims like this, "That Y is a good of X does not entail that Y should be realized unless we have a prior reason for believing that X is the sort of thing whose good ought to be promoted."[30] And, in the case of species, it's just this prior reason that seems to be missing. Even if a species has all the characteristics Johnson identifies, and thereby could be thought to have interests, there doesn't seem to be a good reason for thinking that those interests are morally relevant ones.

Admittedly, this is a very brief overview of a complex set of arguments. There may be arguments here about the moral status of species understood as individuals that could be more successful than Johnson's—though I am not sure what these would be. But now I want to take a different, less explored route in considering why it might be wrong to endanger species or to render them extinct: the idea that by doing so, some kind of *group harm* is being committed.

HARMS, GROUPS, AND SPECIES

The first step is to outline what it would mean to think of a species as a group in the sense required here. For, after all, we have already conceded that it's reasonable to think of a species as a kind of *individual.* But the sense in which a species is an "individual" is a special one that emerges out of evolutionary biology. This special sense doesn't preclude thinking of a species as a group in a layman's sense, which is what (I'll suggest) we're interested in here.[31] In the human context, affirmations that *human* groups can suffer rights infringements and can be harmed have become increasingly frequent. So, for instance, the United Nations General Assembly Resolution on the Crime of Genocide states that "[g]enocide is a denial of the right of existence of entire human groups, as homicide is the denial of the right to live of individual human beings."[32]

This *specific* claim raises a number of difficulties.[33] Indeed, both legal and philosophical scholars have contested the idea that human groups can themselves have rights, beyond the rights of the individuals who compose them.[34] However, the idea that there can be group harms

30. JOHN O'NEILL, ECOLOGY, POLICY AND POLITICS: HUMAN WELL-BEING AND THE NATURAL WORLD 23 (1993).

31. For this reason, I will now use the common expression "species members," which I had endeavored to avoid above since biological arguments reject the idea of individuals as "members" in the way that a set has members. Indeed, as I'll suggest shortly, the relevant sense of species group here is plausibly a *folk* one.

32. G.A. Res. 96 (I), at 188, U.N. Doc. A/64/Add. 1 (Dec. 11, 1946).

33. *See, e.g.*, WILLIAM A. SCHABAS, GENOCIDE IN INTERNATIONAL LAW 6 (2000).

34. *See generally* Jan Narveson, *Collective Rights?*, 4 CAN. J.L. & JURIS. 329 (1991) (arguing against the idea of collective rights). Narveson specifically asserts that "[n]o

in the human case (without necessarily presupposing group rights) is more widely accepted.[35] In brief, some ways in which individuals are bound together in groups—or are viewed from outside as being bound together in groups—make them vulnerable to particular kinds of group-oriented harms. It's this idea of group harm in which I'm interested here. I'm not going to suggest that human and species cases are comparable in terms of moral *gravity*, but rather, I want to explore whether the *form* of such group harm arguments might successfully transfer from human groups to species.[36] This seems an obvious move to *consider*, at least, as a way of thinking through other possible grounds for moral responsibilities humans might have towards species. One existing account by Claudia Card has already taken some preliminary steps in this direction,[37] although my discussion here diverges from hers in substantial ways. However—as I'll argue below—it's far from obvious that ultimately this group-harm move can succeed any better than the one based on the interests of species-as-individuals.

First, though, I should clarify how I'll be using the problematic term "harm" here. "Harm" may reasonably be used to refer to "hurt" or "damage" of any kind (so, for instance, we might say that a deer was harmed when a tree fell on it in a storm). However, it may also be used in a normative sense, where harms are understood as being wrongs. Essentially, I'll adopt Feinberg's position that a harm is (usually) an act, carried out by a moral agent, that sets back some being's morally significant interests, and is a *prima facie* wrong.[38]

How Groups Can be Harmed

How then is it argued in the human case that groups can be harmed? Larry May suggests the following account: "Harms are group-based when there is something about the structure, or perceived structure, of a given group that makes all of the members of the group at least

group, no collectivity, has the (positive) 'right to exist' asserted against the outside world." *Id.* at 344. What might be meant by "group rights" is itself controversial. *See* Peter Jones, *Group Rights*, *in* Stan. Encyc. Phil., Sept. 22, 2008, http://plato.stanford.edu/entries/rights-group/.

35. *See, e.g.*, Jeffrey Blustein, The Moral Demands of Memory 132 (2008).

36. *See generally* Hull, *supra* note 14, at 344 (drawing attention to the relations between members of a species and members of a human group, where the group is based on ancestry, and the group's separateness is perpetuated by both internal and external forces).

37. Claudia Card, *Environmental Atrocities and Non-Sentient Life*, 9 Ethics & Env't 23 (2004).

38. Joel Feinberg, Harm to Others 31–36, 105–09 (1984). This is not, of course, to say that there could not also be harmless wrongs. In using "harm" in this sense, the view that I am outlining differs from Card's; she explicitly distinguishes between harms and wrongs (though ultimately, not much turns on this, since she is interested in wrongful harms). *See* Card, *supra* note 37, at 24.

indirectly or vicariously harmed whenever one of the members is directly harmed."[39] For this reason, he maintains, members of identifiable groups of this kind all have a *common interest* in not having adverse treatment pegged to group membership, even if they are not aware of having such an interest.[40] And if individuals are negatively treated because they are tokens of a type (where the type is their group), then all individuals identifiable and/or self-identified as tokens of that type are vulnerable to negative treatment, even if they have not yet been so treated.[41]

The foundation of this claim about group harm is not (as in Johnson's argument) that the group is a kind of individual with an individual's interests, and that these interests are morally relevant. Rather, it is that individuals in the group have a common interest in not being treated badly *because* they are in the group, and that when one member of the group is harmed because he or she is a member of the group, this is indirectly harmful to all the other members of the group. This is clearly a much *weaker* group claim than one where a group is individual-like with respect to harm. But it's clearly a "groupier" claim than would be implied by just the summed individual interests of group members, because here the relevant interests are inextricably tied to the group; the harm comes from being part of the group, and a full explanation of the harm requires an explanation relating to the group. But nonetheless, it's not something *other* than the individuals that is harmed; being in a group provides for special, group-oriented ways in which those who compose it can suffer harm. Admittedly, this weaker kind of species harm argument fails to capture some of what might be meant by species harm if we construed a species as an individual with moral status. But given the difficulties attendant on such an argument, this might, if successful, provide a way in which we could at least think that a species is of moral relevance with respect to some kinds of harms that happen to the individuals that compose it.

In what ways, then, might it be claimed that, in the human case, groups can be harmed? Two distinct clusters of argument have been made. The first cluster I'll call *subjectivist* arguments. On this account, harms can only be inflicted on groups whose members have an appropriate subjective relationship to one another, to the group, or to both, in particular when its members in some sense *subjectively identify* with the group and derive meaning from their relationship with the group. This can take several forms; for instance, members may create their self-identity in the context of their group[42] and/or they may have a sense of sym-

39. LARRY MAY, THE MORALITY OF GROUPS: COLLECTIVE RESPONSIBILITY, GROUP-BASED HARM, AND CORPORATE RIGHTS 116 (1987).

40. *Id.* at 116–17.

41. *Id.*

42. *See* Mohammed Abed, *Clarifying the Concept of Genocide*, 37 METAPHILOSOPHY 308, 312–14 (2006).

pathy or solidarity with other members of the group *because* they are members of the group (this need not entail knowing them personally).[43] It's this *subjective identification* that makes group harm possible. If, for instance, you are a member of some ethnic group, and another member of your ethnic group is attacked *because they are a member of that group*, then even though you as an individual have not been directly attacked, you may suffer in a variety of ways. After all, an attack on another group member is, in some sense, an attack on you, since you share, and you know that you share, the salient, attack-generating feature: you too are a member of that group. You are likely, therefore, to fear attack yourself; to understand your self-identity as being threatened; to suffer empathetically with the attacked individual; and so on. All the members that identify with the group are likely to share in these responses and to perceive themselves as being harmed by the attack on one of its members. And if the group is significantly destroyed (even, perhaps, in ways that do not entail the killing of individual members of the group), the remaining members of that group will feel a profound loss of identity and meaning.[44]

What makes group harms distinctive on this account is that an individual's conscious understanding of his or her group membership causes a special kind of harm. X is not harmed by an attack on Y (assuming Y to be a personal stranger, but part of X's group) unless X recognizes herself to have some special relationship with Y on the basis of their group connection. If X is unaware that she is part of Y's group, or that she might be perceived from outside to be so, then an attack on Y, in itself, will not harm X, as her psychological state is not tied up with her group membership and with other group members. This account of group harm is surely plausible: it's easy to think of cases that look like this. Group harm, then, results from the *subjective relations* of the members of the group.

The second cluster of arguments I'll call *objectivist*. Those who adopt one of this cluster of arguments, while not necessarily *denying* that appropriate subjective relations can constitute a group vulnerable to harm, maintain that this is not *necessary*; group harms can be inflicted from outside without the requirement that such subjective relations must hold within the group. It is sufficient if (i) the group is readily "picked out" by those outside the group and (ii) individual group members are regarded or treated in particular ways by non-members *because* of their group membership, so that the group can be said to have an "identifiable

43. *See* MAY, *supra* note 39, at 115.

44. *See, e.g.*, Abed, *supra* note 42, at 327 (explaining how a group can be "socially dead" if forcibly removed from its traditional territory, upon which the group's cultural heritage and traditions are dependent). *See also* Larry May, *How is Humanity Harmed by Genocide?*, 10 INT'L LEGAL THEORY 1 (2004).

status."[45] In the human case, groups readily picked out from the outside by their skin color, for instance, fit this category. Of course, subjectively and objectively bound groups are not mutually exclusive. Some social groups might manifest *both* internal subjective identification *and* external identification from non-members; indeed, either one might precede and generate the other. We can imagine that once a group is "picked out" from outside, those individuals so identified might develop a subjective relationship with one another on account of this very shared external identification. Alternatively, we can imagine particular subjective relations manifesting themselves in appearance, culture, or ritual that allows group members subsequently to be "picked out" by others from outside (for instance, the supporters of a particular sports team).

Could a species be a group in either of these senses? With the possible exception of the human species, the "subjective identification" route looks implausible. Members of non-human species, to begin with, don't understand the concept of a "species," nor could they meet the other subjective identity conditions for this kind of group.[46] If subjective relations of this kind are required to constitute a group that can be harmed, then species are not susceptible to group harms at all. And, it's important to note, almost all accounts of group harm defend a form of subjectivism. But since this account plainly won't work for species, if the idea of group harm is going to take us anywhere, then we'll need to look more closely at the objectivist account.

First, let's think about what an objectivist account of group harm would have to look like in the species case. Individuals belonging to the species would have to be able to be readily "picked out" by human beings and regarded or treated in particular harmful ways because of their species membership. At first sight, this seems plausible. Humans do pick out individuals as members of species and treat them in harmful ways because they are "one of *those*." An obvious example is the rat: in many places merely being identified as a member of this species is enough to induce attempted or actual fatal harm.

However, we should not move too swiftly; even here, two hurdles arise. One is that the organisms "picked out" by people from outside as members of a particular species might not coincide with a scientific species classification (and although "people from outside" may include "scientific experts on identification of species" they do not only comprise

45. *See* MAY, *supra* note 39, at 114–15; THOMAS W. SIMON, DEMOCRACY AND SOCIAL INJUSTICE 76 (1995).

46. This is not to deny that some animals might recognize "sameness" when encountering unfamiliar members of their species, nor that animals may be attached to particular individuals of the same species in their social group. *See* Loraine R. Tarou et al., *Social Attachment in Giraffe: Response to Social Separation*, 19 ZOO BIOLOGY 41 (2000). But these relations are insufficient to constitute a *species* group bound together by subjective identity.

such experts). Of course, in many cases—including polar bears (and standardly, rats)—what people in general pick out as being a species member will coincide with a scientific species taxonomy; people rarely make mistakes about polar bears. But on other occasions, members of what might be two species in a *scientific* sense could be in practice treated as one species in a lay context—especially where individuals of different species are morphologically similar. It's enough to form a species-group of the kind we're considering here for all members to be commonly identified as, and treated as, one species, even if *scientifically* the same-species identification is incorrect; it depends on a folk taxonomy, rather than a scientific taxonomy. This is not, of course, to *deny* that there are scientific species taxonomies that describe real species, but rather to assert that when individuals are picked out from outside as part of a species-group, what's picked out doesn't necessarily correspond to that scientific classification. (Of course, this might also apply in human cases, when individuals are mistakenly identified as members of particular groups to which they do not belong—though in the human case, it's often argued that the relevant taxonomies, e.g., of ethnic groups, are folk taxonomies anyway.[47]) This worry is not, I think, fatal to objectivist arguments for species harm.

A second hurdle though (one which applies both to subjectivist and objectivist accounts of group harm) is that this view of group harm requires all the individuals in the group—in this case, all the individuals in the species—to be of moral concern in themselves.[48] In the case of sentient animals—such as the polar bear species—it's not particularly controversial to assert that individuals have morally relevant interests (indeed, I'll just assume this here). But even if it can be maintained that individual greenflies or elm trees, for instance, have welfare interests, to argue that those interests are of moral concern is extremely difficult.[49] In fact, such claims face many of the same difficulties as the claim that a species is an individual with moral status: even if a plant, for instance, can be said to have interests, the difficulty lies in showing why those interests should be taken into account in moral decision-making. If we

47. So, where I say "species" in this context I mean species in the folk taxonomic sense.

48. For another perspective on the moral consideration of group interests, see Stephen Winter, *On the Possibilities of Group Injury*, 37 METAPHILOSOPHY 393 (2006).

49. *See* O'NEILL, *supra* note 30, at 19, 22. *But cf.* PAUL W. TAYLOR, RESPECT FOR NATURE: A THEORY OF ENVIRONMENTAL ETHICS 148–49 (1986) ("Insofar as all living things are ascribed some inherent worth, it is the simple truth that each one has a good of its own that counts as the sufficient ground for such worth. . . . There is no analogous line of thought that would entitle us to use differences in capacities among living things as grounds for ascribing different degrees of inherent worth to them."); Card, *supra* note 37, at 25 ("[S]entient or not, living beings that have capacities to realize positive values in a life sufficiently complex that they have a welfare (or, a good of their own) might be vulnerable to intolerable harm from culpable agents.").

can't accept such arguments, then the scope of objectivist group harms to species must be limited to those species that *are* thought to be comprised of morally significant individuals, a group that's unlikely to be broader (and is plausibly more restrictive) than vertebrate species.

A third potential difficulty here, I think, is only a difficulty at first sight. It might be thought that this idea of group harm has counter-intuitive implications in the species case. For it might be thought that, on this account, an attempt to protect a species that entails setting back the interests of existing individuals in it (e.g., by captive breeding) would be seen as a species harm, not a benefit. But as with the similar example mentioned earlier, there's no reason why harming some existing members of the group because they are members of the group (for captive breeding) could not be seen as a group harm to *them*, while simultaneously being a group benefit to many more *future* individuals, such that the captive breeding can be thought of as a group benefit *over time*.[50]

However—to return to the key theme of this paper—there's at least one more major hurdle to cross before anthropogenic climate change could be seen on this objectivist view as a group harm to polar bears.

COULD ANTHROPOGENIC CLIMATE CHANGE HARM SPECIES GROUPS?

The problem concerns the kind of phenomenon—or group of phenomena—that climate change actually is. I've maintained that group harms occur when members of the group are "picked out" for harm because of their group membership. But climate change is not obviously this kind of case. Humans didn't intentionally cause climate change, nor pick out polar bears (nor, indeed, any other species) in order to harm them by changing the climate. So, there's a disconnect between the "picking out" of polar bears as a species-group and the problems befalling polar bears because of climate change. This disconnect seems to undermine the idea that anthropogenic climate change could inflict group harms on species, because species aren't, as it were, being intentionally victimized.

Of course, that anthropogenic climate change may seem to be an unpromising candidate for the infliction of group harm does not mean that species cannot undergo group harms; merely that climate change is not a good place to look. So, for instance: individual tigers are picked out for hunting for their skin, organs, and bones *because* they belong to the tiger species; they are targeted as "one of *those*"—what matters is that they are *tigers*. Group membership means that individual tigers are treated in ways that harm them. Further, given the small number of

50. *See* Keith Graham, *Imposing and Embracing Collective Responsibility: Why the Moral Difference?*, 30 MW. STUD. PHIL. 256, 257 (2006) (arguing that in particular circumstances, action contrary to the interests of individuals who comprise a group may be in the best interest of the collective entity).

tigers—there could be as few as 250 wild Sumatran tigers left, for instance[51]—and a continuing hunting tradition, when one tiger is killed, all the others become more vulnerable. When species numbers are small, in addition, the loss of a member of breeding age shrinks the species' genetic diversity, with welfare-affecting consequences for future tigers. This looks plausibly like group harm to a species in the sense I've outlined, although it does have some apparently strange consequences—that, for instance, the fewer members of a species there are in existence, the greater the group harm generated by killing one of them.

Although this does suggest that there *could* be group harms to species, it does not help the case that anthropogenic climate change could inflict them; climate change lacks the deliberate targeting that's manifest in the tiger case. Thus a negative conclusion here looks most likely: species endangerment by climate change can't be understood as a group harm to polar bears. Even if one is willing to buy into the objectivist argument for group harm, anthropogenic climate change lacks the kind of intentionality required; it doesn't "pick out" for harm.

A Possible Response: Intention and Foreseeability

One last-ditch response is possible here: perhaps, in certain situations, we can think about harms in terms of effects, rather than intentions. Environmental justice campaigners, for instance, make arguments of this kind. Robert Bullard defines environmental racism thus: "Environmental racism refers to any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color."[52] Key to Bullard's controversial claim is that such policies, practices, or directives need not be *intended* to be racist.[53] If the *effects* of particular policies—such as the location of toxic hazards—impact disproportionately on certain groups, groups that are already picked out from outside by race or color, then they are racist whatever the intention that lay behind them. What constitutes a group harm is determined by *effect* rather than by *intention.*

This focus on effect rather than intention—though it is, of course, deeply problematic—might provide a way forward for the issue of species-harm. Indeed, in the case of climate change, there's no need to go quite so far as to focus *only* on effect. For at least the last fifteen years—

51. Zakki Hakim, *Sumatran Tiger Trappers Rush to Rescue*, Chi. Trib., Mar. 2, 2009, at 10.

52. Robert D. Bullard, Envtl. Just. Res. Ctr., Environmental Justice in the 21st Century (1999), http://www.ejrc.cau.edu/ejinthe21century.htm.

53. *Cf.* Sherry Cable et al., *Different Voices, Different Venues: Environmental Racism Claims by Activists, Researchers and Lawyers*, 9 Hum. Ecology Rev. 26 (2002) (discussing the relevance of intent in differing conceptions of environmental racism).

since, say, the signing of the U.N. Framework Convention on Climate Change in 1992—it has been widely known that there are substantial *risks* of damaging effects in the Arctic from continued human release of CO_2 and other greenhouse gases. Although the polar bear species has not been *targeted*, human activities have impacted on it in ways that were reasonably foreseeable[54] and—to some extent at least—avoidable[55] (and this holds, whatever story about collective/individual human moral responsibility one tells). Presumably, once there is awareness of the effects of human actions, what was once damage through excusable ignorance, to which no moral responsibility could be attached, can become a harm, to which moral responsibility does attach, because now the likely consequences of actions are reasonably clear. If group harms could be inflicted in this way—and I'm not here going to develop more of an argument to support this claim—there might still be a case for species harm from anthropogenic climate change.[56] Climate change will, after all, create some similar effects for the polar bear population as hunting does for tigers. All members of the species, both present and future, will live an increasingly vulnerable and marginal existence, one which will impact negatively on their health, well-being, and inter-species interactions.

IN CONCLUSION

To accept that anthropogenic climate change can cause group harms to species requires us to accept a number of controversial steps. It moves away both from the persuasive idea that groups must be subjectively

54. The expression "reasonably foreseeable" is taken from CLAUDIA CARD, THE ATROCITY PARADIGM: A THEORY OF EVIL 20 (2002). For a similar argument, that the effects of our international economic rules *foreseeably* affect the incidence of extreme poverty and thus cause us to share in moral responsibility for the poverty that results, see Thomas W. Pogge, *A Global Resources Dividend*, *in* ETHICS OF CONSUMPTION: THE GOOD LIFE, JUSTICE, AND GLOBAL STEWARDSHIP 501, 504–07 (David A. Crocker & Toby Linden eds., 1998).

55. Of course, there are several difficulties here. Reducing emissions with the speed and degree required to make a difference might entail other serious costs, such as higher unemployment and higher energy prices. *See* BJORN LOMBORG, COOL IT: THE SKEPTICAL ENVIRONMENTALIST'S GUIDE TO GLOBAL WARMING 24–38 (2007). And there is considerable lag time between emissions occurring and their causing environmental effects, due to, *inter alia*, thermal inertia. *See* Gerald A. Meehl et al., *How Much More Global Warming and Sea Level Rise?*, 307 SCIENCE 1769 (2005). But still—as environmental groups such as the Sierra Club and WWF are currently arguing—it is at least possible that mitigating action now could protect some otherwise threatened species. *See, e.g.*, Sierra Club, Resilient Habitats, http://www.sierraclub.org/habitat/ (last visited Feb. 16, 2009); WWF, Is It Too Late?: We Can Still Act Now!, http://www.panda.org/about_wwf/what_we_do/climate_change/problems/cause/too_late/ (last visited Feb. 16, 2009).

56. This might seem like a "wrongful omission," but this would be an odd way of thinking about it, since wrongful omissions usually concern harms one is not responsible for causing. *See* FEINBERG, *supra* note 38, at 118–25, 159–63.

bonded in order to be harmed,[57] and from the even more widely accepted idea that groups must be intentionally targeted to be harmed,[58] while confining group harms to species with individual members that can be thought of as morally considerable in their own right. If either of the first two moves is thought to be implausible—as they well might be—then anthropogenic climate change cannot be thought of as a group harm to *any* species.

However, if neither "species-as-individual-with-moral-status" nor "species-group-harm" arguments can be made to work, then it's hard to pin down what would make the endangerment or loss of species a *special* moral problem, since the species itself lacks moral status, and there's nothing distinctive (or at least, not on these grounds) about the kinds of harm individual members face because they belong to particular species. Species endangerment and extinction, then, could be seen as instrumentally important for humans,[59] for sentient animals, or for ecosystems (though it's not obvious that stronger arguments can be made for the moral status of ecosystems than for species). Such instrumental arguments are likely, of course, to recommend protection for many species—including, probably, for polar bears. But this relatively weak conclusion may be disturbing for those seeking stronger, more direct, or more comprehensive arguments for species protection.

57. *See, e.g.*, BLUSTEIN, *supra* note 35, at 133.

58. *But see* Abed, *supra* note 42, at 311 (arguing that in the case of genocide, emphasis might be placed on foreseeability rather than intent, so that the resulting definition is not under-inclusive). This might apply to group harms too, though genocide is obviously a subset of group harms.

59. I use "instrumental" here to cover a wide variety of possibilities, including Norton's claim that species have transformative, not just demand, value, where transformative value is anthropocentric but perhaps not straightforwardly instrumental. *See* NORTON, *supra* note 25, at 185.