Species Wellbeing and a Solution to the Non-Identity Problem

Abstract: This paper introduces a new account of species wellbeing. Species wellbeing, I argue, is the aggregate biotic welfare of the present members of a species and the projected wellbeing of the species in the medium-term future. This account of species wellbeing is observable and makes sense of several tough problems. To highlight the strengths of this account, I show that it makes sense of extinction and the risk of extinction, showing that both of these things are harmful to a species. I also argue that this account of specie wellbeing makes sense of the Non-Identity Problem.

Key Words: Species, Species Wellbeing, Aggregate Welfare, Non-Identity Problem

1. Introduction

Can a species fare poorly or well? Many have argued that species have a wellbeing that is distinct from the individuals that compose the species. The goal of this paper is to introduce a new conception of species wellbeing. Species wellbeing is best understood as present aggregate biotic welfare of the species’ members in conjunction with the projected aggregate biotic welfare in the short to medium-term future. When examining species wellbeing, I think it is best to think about the biotic functioning of the present members and how the species’ biotic wellbeing will look in the future. From both of these, we determine species overall wellbeing. This conception of species welfare makes sense of endangered species, as well as cases when individual welfare and species welfare come apart.

 I first lay out several views of what a *species* is, arguing that each account is consistent with the account of species wellbeing offered here. I then engage with two prominent views of species wellbeing from the philosophical literature. I argue that species wellbeing understood as aggregate biotic welfare over time avoids problems that other views run into. In order to highlight a strength of the account of species wellbeing, I turn to a novel solution to the non-identity problem. The non-identity problem, supposedly, shows that future individuals are not harmed by climate change, since their existence is contingent upon the policies that cause climate change. The existence of many species, however, is not contingent on the causes of climate change, so we can reasonably claim that species are, in fact, harmed by climate change. In the last section, I entertain three objections to my solution to the non-identity problem.

1. Species Harm, Species Benefit, and Species Wellbeing

To think about species wellbeing, we must first ask what a species is. Philosophers of biology and environmental ethicists have been at pains to answer this question. Surveying all these answers in detail lies beyond the scope of this paper. For my purposes, I need a conception of species that is consistent with welfare aggregation. I, therefore, examine and critique three plausible views of species and show that each one is consistent with welfare aggregation. We can hold any of these views consistently with my account of species wellbeing.

David Hull (1978) offers an account of species in which species are individuals, as opposed to classes. Species, according to Hull, are the units of evolution because generations of species are the entities of various hereditary and selection relations. Species are continuous and have spaciotemporal relations. Because classes are not spatiotemporally located, Hull concludes that species are individuals, as opposed to classes. For Hull, the relationship between species and its members is a part whole relation. Michael Ghiselin (1974) warns that ‘individual’ is not synonymous to ‘biological organism’ (573). He thinks there are four features of species as individuals: (1) The species name is a proper name; (2) They do not have defining properties (intensions); (3) There cannot be instances of them; (4) Individual organisms are parts of a species, not members. I think this view is consistent with wellbeing aggregation because the parts of a whole can fare poorly or well. My leg, for example, may not be functional, while my other parts are. At least in principle, we might think welfare aggregation is consistent with this view. I address one version of this view from Holmes Rolston who argues against welfare aggregation.

 Phillip Kitcher (1984) argues that while some species can be understood as individuals, this is not the case with all species. Biologists use the term *species* in two distinct ways. First, following Hull, Kitcher suggests that biologists think of species as individuals, which we have seen is consistent with welfare aggregation. Second, biologists sometimes conceive of species as a set of organisms. Kitcher thinks that both senses of *species* are plausible. Both conceptions, I think, are consistent with aggregating welfare. The various members of a set might be doing well. For example, each Koi fish might be doing well in my pond; we then might reasonably say that set of Koi fish is faring well.

 Richard Boyd (1999) offers an intuitive account of species that defines a ‘natural kind’ as a ‘homeostatic property cluster.’ According to this view, an individual is a member of a species in virtue of having *many* of the same characteristic as the other members of the species, rather than all of the same characteristics. He thinks that, so long as an individual member of a species has the relevant number of characteristics that the other members have, then the individual can be correctly characterised as a member of that species. This view has problems: first, it is unclear how many characteristics are sufficient for membership in a species; second, if two distinct species share nearly all characteristics in common, then it seems that they should be the same species. There might be other relevant criteria for distinguishing species other than characteristics. In any case, this view is consistent with aggregate welfare because we can look at all of the members of a species and determine how each is faring and then determine is the whole species is faring well.

There are a wide range of views available in the literature. It strongly seems to me that each of these views is consistent with present and future welfare aggregation, my view of species wellbeing. I do not think I need to take a stance here on which of these views is the correct one; we should let a thousand flowers bloom. With these views on the table, I argue that the wellbeing of a species is the aggregate wellbeing of the present members of the species plus the projection of wellbeing in the near to medium-term future. The idea here is that we examine the wellbeing of each member of the species, aggregate that wellbeing, and then see how the species is projected to fare in the future. This will tell us the wellbeing of the species. For example, a species that is doing well now but projected to fare poorly in the future would not have as high a wellbeing as a species with high aggregate wellbeing presently with a high future projection.

Let’s think about the projected future wellbeing of a species. Why should this matter? My present wellbeing is (potentially) not determined by how I will fare in the future. I can have high welfare, even if there is some risk of my not doing well in the future. We might, therefore, think that it is sufficient to determine species wellbeing by examining only present welfare. In response, I turn to endangered species. An endangered species is a species at risk of extinction. I think that it is plausible to ask if a species is going to go extinct when thinking about whether a species is faring well. It would be odd, for example, if I in one breath said that the species wellbeing of caribou is really high and in the next breath say that they will likely be extinct in the next decade. The projection of extinction seems to lower species wellbeing, since extinction is generally bad for a species. Note that this future calculation makes sense for species but not necessarily individuals. We might think that the present wellbeing of a horse is high, even if we can reasonably predict it will die in the next ten years. Thus, calculating species wellbeing, and not individual wellbeing, requires prediction of future wellbeing.

Consider now how we determine the wellbeing of a species. What is faring poorly or faring well? I want to focus on the aggregate *biotic* wellbeing of the species as opposed to aggregate *experiential* welfare or *experiential* welfare in conjunction with biotic welfare. But what is biotic welfare? Roughly put, biotic welfare is the health of an individual organism. An organism that is healthy and functioning properly has a high degree of biotic welfare. But environmental ethicists offer a wide range of answers. Holmes Rolston (1998) argues that biotic welfare is the achievement of normative goals as determined by genetic set, while Nolt (2009) argues that biotic welfare is autopoietic functioning. Nicholas Agar (2001), moreover, thinks biotic welfare is the satisfaction of biotic preferences. I personally prefer thinking about biotic welfare as autopoietic functioning, but I think that any of these conceptions is consistent with the account of species wellbeing offered here. So long as we focus species wellbeing exclusively on biotic welfare, we can find any of these views plausible.

Why merely track biotic welfare of a species, as opposed to just experiential welfare or experiential welfare and biotic welfare? John Nolt (Forthcoming) writes that both dimensions of welfare influence species wellbeing: ‘Given measures of the biotic and (where relevant) hedonic welfare of individuals, it would be possible to determine an average individual welfare for a species’ (Nolt Forthcoming: 7). I disagree.

I have two reasons for thinking we should focus exclusively on biotic welfare. First, tracking just biotic welfare allows us to track species welfare for both sentient and non-sentient organisms. By using just biotic welfare to track species wellbeing, we can track both animals and plants. This is an advantage of this account of species wellbeing because we do not have to limit our conception of wellbeing to sentient creatures. Second, how are we to know what the experiential welfare of an entire species is? We could never know that, unless we had a species with only a few members. This concern is augmented when we think about future experiential welfare. How could we ever predict the experiential welfare for future generations? Perhaps we could try, but I do not think we would be very accurate. I also am not sure how prevalent experiential welfare is for species welfare. I suppose that there might be a species that could not reproduce because its members are in a perpetual state of experiential pain but that does not seem plausible. But perhaps we could track experiential value insofar as experiential welfare correlates with biotic welfare: high biotic welfare may track medium to high experiential welfare and low biotic welfare may correlate to low experiential welfare, where we are considering a species with experiential wellbeing. Still, biotic welfare and experiential welfare often come apart. For the sake of simplicity, I merely consider present and projected *biotic* welfare.

 Species wellbeing and individual wellbeing are distinct. Something that makes the species worse off does not necessarily make the individual worse off. For example, consider a species with low population numbers and little genetic diversity. The members of this species could conceivably fare well in the present, but this present wellbeing does not imply that the species fares well. If we project what the species might look like in the coming generations, it strongly seems that welfare would be lower for this species.

A species might benefit from an individual’s suffering. Suppose wolves kill and eat a sick and aging caribou. Even though that particular caribou’s wellbeing is diminished, its death might benefit the species because its weaker genes do not continue in the gene pool, making for a more advantageous future generation.[[1]](#footnote-1) This case suggests that the species can benefit in virtue of an individual’s harm. But, is this consistent with thinking that species wellbeing is the aggregated welfare of individuals? I believe so. The individual caribou’s suffering lowers the present aggregate welfare of the species, but it (potentially) raises the aggregate welfare of the species in the long term by raising genetic fitness. When we project what the species’ population might look like without that individual’s genes, we find a slightly stronger, slightly better off species in the future. That projected future good, I think, outweighs the present suffering of the individual. So it’s reasonable to think that the species is better off without that individual, even if that individual lowers aggregate welfare in the present.

 If a species can benefit in virtue of individual harm, it also seems that the species can be made worse off by individual benefit. Consider overpopulation. Overpopulation might raise the aggregate good for present members of a species, especially if there are enough resources to go around for the present population. Overpopulation, however, is not a good for the species because it reduces resources for future generations. So overpopulation might be bad for the species but good for the individual and even present aggregate welfare.

These cases show that species wellbeing and individual wellbeing can come apart although they needn’t. We might say that the suffering of an individual is bad for the individual and the species, especially if the species has very few members and if the individual has advantageous genes. So even though individual wellbeing and species wellbeing can come apart, it will often be the case that they track with one another.

Holmes Rolston, III (1988, 2012) disagrees with understanding species welfare as aggregate welfare. In Rolston’s view, species are a kind of ‘super organism’ (Nolt, forthcoming). Species do not exist as a class or category of individuals, rather a species is a ‘corporate individual’ as well as a ‘discrete entit[y] in time as well as space’ (Eldredge and Craft 1980: 92). Species as super-individuals can value things, such as ‘defending a particular form of life, pursuing a pathway through the world, resisting death (extinction), [and] regeneration maintaining a normative identity over time’ (Rolston 1988: 151). Rolston thinks that this conception of a species is not compatible with aggregate welfare. He writes:

Duties to a species are not to a class or category, not to an aggregation or average of sentient interest, but to a life line. An ethic about species needs to see how the species *is* a bigger event than the individual interests or sentience. Making this clearer can support a conviction that the species ought to continue. (Rolston 1988: 147)

Even though Rolston’s focus is on duties, he thinks aggregating species welfare is problematic. He thinks the wellbeing of a species is something over and above aggregate welfare of the present and future members. My argument depends on the notion that individual wellbeing contributes to the aggregate wellbeing of species; however, if Rolston is right, then aggregate welfare is not the way to assess species wellbeing. Species welfare must be something other than aggregate welfare.

 Rolston’s view has strengths; it makes sense of the above cases. We might think that the reason species good and individual good come apart is that species good is something over and above individual good. Perhaps a species as a living, historical lifeline has goods that are distinct from the good of its members. Similarly, what is bad for the species might be good for its members; think of the overpopulation example. Rolston’s view makes sense of this asymmetry between species and individual goods. My view also makes sense of this asymmetry because present and future-term aggregate good can look different from individual good. For example, it is bad for the individual elk that it is eaten but benefits the projected aggregate good of future generations.

 If we think that a species is an individual as Rolston does, then it is plausible that species have interests. According to this view, a species would presumably have an interest in all the things it can value, such as defending its form of life and pursuing a pathway through the world. Clare Palmer (2011) suggests that one (and perhaps the most) plausible species interest is not becoming extinct. She notes that such an interest is not always obvious though. Suppose that a species in order to continue existing, ‘all the individual organisms that would compose it, present and future, would have such extremely painful, distressing lives that, as individuals, they would be better off dead, since their lives are not worth living’ (Palmer 2011: 277). As my account of species welfare does not include experiential welfare, we should read Palmer’s issue as low biotic welfare. It is not clear that it would still be in the interest of a species to continue existing. Yet Rolston’s account implies that the species as a ‘corporate individual’ would still have such an interest because the individual has an interest in not becoming extinct over and above its members. This seems implausible in light of Palmer’s concern. Aggregating welfare is the best way to get around Palmer’s worry. If we can reasonably predict that the species will not fare well in the future, then it is possible to say that it no longer has an interest in continuing itself. Now that I have addressed Palmer’s potential problem, I turn now to several comparative questions.

 How might we compare the welfare of a complex species, such polar bears, to the wellbeing of a less complex species, such as ants or a species of protozoa? It is intuitive to think that members of more complex species have greater welfare than members of less complex species. That is, more complex organisms may have a greater threshold for biotic wellbeing that less complex organisms. A creature with a functional digestive system has more biotic functioning than a less complex organism with no mammalian digestive system (or may have more biotic preferences than a less complex organism). Perhaps a healthy polar bear has more biotic welfare than a healthy ant. We might, therefore, reasonably think that more complex functions offer a greater degree of biotic welfare for individuals. If this is right, then the threshold for biotic welfare for the species rises with the complexity of the members of the species. The polar bear species, thus, has a greater degree of species wellbeing than the ant or protozoa species.

 We might think, however, that the number of individuals in a species matters. How might we compare species with fewer, more complex organisms to species with greater numbers of less complex individuals. Since polar bears have a greater threshold for biotic wellbeing than protozoa, we might think that the species of polar beat has a greater threshold for biotic welfare than the species of protozoa. This is plausible. Even though there are fewer members, it is intuitive to think that the polar bear can fare better than the protozoa because of their higher individual threshold for wellbeing. If the polar bear species and the protozoa species are both at a maximum biotic wellbeing in the present (all members are healthy and well) and if they both are expected to fare well in the future, then the polar bear species will have greater wellbeing because the individual members have greater thresholds for biotic welfare. However, things are much more muddled in reality. Suppose that the protozoa have a greater prospect of future welfare than the polar bears. This would likely mean that the protozoa have greater species wellbeing in the present, even though the individual members of the species have lower thresholds for biotic welfare.

When we consider how the species will fare in the future, we might find that some less complex species will fare better than more complex species. I am inclined to think that even though individual members of complex species, such as mice and polar bears, have a higher threshold for biotic wellbeing, this does not necessarily mean that they will have greater species wellbeing. It might be possible for a more complex species to fare better than a less complex one (perhaps polar bears will fare better in the future than some species of protozoa); I merely note that the question of species wellbeing comparison is not as clear cut as we might think once we consider the prospect of future wellbeing and future existence.

Consider yet another pressing question: How might we morally weigh the wellbeing of one species to that of another species? Given the option of saving the polar bear species and a protozoa species, which one should we choose? Why, for example, should I prefer the wellbeing of the human species to the wellbeing of the protozoa species? Perhaps the increased threshold of wellbeing for the individual members of the species can assist here. One reason to think we ought to prefer killing an individual ant over an individual polar bear is that the polar bear has a greater threshold for biotic welfare compared to that of an ant, assuming that welfare thresholds track moral obligations. I find this answer appealing. One reason to prefer the wellbeing of more complex species to less complex species is that the *individual members* of the complex species have a greater threshold for biotic welfare. Thus, faced with the decision between polar bears and ants, we are bound to prefer the polar bears, assuming that individual welfare thresholds track what we ought to do.

 In the next section, I argue that this account of species wellbeing offers a helpful solution to the non-identity problem. Given that the existence of most species precedes the policies that lead to climate change, we can say that climate change harms the species. Even if the individual members of a species owe their existence to climate change, the species itself does not. We can, consequently, claim that the species is harmed—in the counterfactual sense—by climate change, even if the individual members are not.

1. The Non-Identity Problem and a Solution from Species Wellbeing

To highlight the strength of this account of species wellbeing, I turn now to a novel solution to the non-identity problem. Derek Parfitt (1984) sets up the problem. The non-identity problem challenges long-term ethics. It points to the fact that many of us exist because of the policies that have preceded us. I likely would not exist had it not been for the Industrial Revolution. Similarly, the set of future people that comes to exist does so, in part, because of present-day business as usual policies, e.g., fossil fuel burning, transportation, industry, that precede them. Such policies, however, lead to harmful climate change, and climate change will likely lower their overall welfare. Now, here’s the problem: given that they exist because of these business as usual policies, we cannot claim that these policies have *harmed* them. Why? This is because harm, as it commonly understood, involves making somebody worse off than they would have been *otherwise*. This is a rough version of the counterfactual comparative view of harm.[[2]](#footnote-2) Now, future people would not exist had it not been for business as usual policies. We cannot say, therefore, that such policies and climate change harm them because otherwise, had those policies not occurred, they would not exist at all. Thus, in the possible world where there are no such polices, we find that the set of future people is different. Since we do not harm the set of future people that exists under business as usual policies (so the problem goes), we have no moral reason to prefer conservation policies to business as usual policies.

 A brief word about some solutions to the problem: Much ink has been spilled over the non-identity problem, so the scholarly path is worn. Some suggest that we reject the counterfactual comparative view of harm. Non-comparative accounts of harm, such as the one offered by Harman (2016), offer a solution, since they do not have to appeal to any otherwise at all. Things like disease, famine, bodily ailment, and disability count as harm; those things *just are* harm. It is reasonable to think that climate change will cause future people to experience such things, so it is reasonable to think that climate change *harms* future people, even if they exist because of business as usual policies. Solutions like this one are plausible, but I want to keep the counterfactual comparative account of harm. Can we hold a counterfactual comparative view of harm and avoid the non-identity problem?

 John Nolt has argued yes. He adds the following necessary condition on harm: an individual I is harmed by an action A *only if* I is made worse off by some consequence of A than I would have been had that consequence not occurred. On his view, we see that many single negative consequences of an action constitute a harm, such as death, injury, or illness. This necessary condition on harm also helps us make sense of simultaneous harm and benefit. If I give you a donut, but you are, unbeknownst to me, allergic to donuts and have a reaction, we might reasonably say that I have both benefitted you and harmed you, since both possessing the gift and having the reaction are consequences of the action. This account can help us make sense of harm to future people because climate change is one of the many consequences of business as usual policies. I respond to Nolt’s necessary condition on harm in the last section.

Though these are largely plausible responses to the non-identity problem, the account of species wellbeing offered here gives us yet another response. Now, we might think that the non-identity problem applies to non-human beings as well.[[3]](#footnote-3) Particular polar bears, for example, might not exist if it were not for climate change. As the climate changes, polar bears would meet different mates from those they would have otherwise. So, their existence could be contingent upon climate change. Suppose this is true and suppose that climate change diminishes welfare for these polar bears. According to the non-identity problem, we cannot argue that they were harmed in the counterfactual sense because they would not exist without climate change. If we consider what would happen ‘otherwise’, we would find most future polar bears would not exist at all. The point here is that the non-identity problem can obtain for any number of non-human species. I now turn to a solution to the problem.

 Most (or all) *species* that exist now would have existed even if climate change were not occurring. Even though individual members of a species might owe their existence to climate change or industrialism, the species itself does not. The species of polar bear is much older than climate change and the events leading up to climate change. Suppose now that, due to climate change, the aggregate wellbeing of the polar bear species goes down and the prospective wellbeing of future generations looks low; perhaps the polar bear species becomes endangered such that there are few members and the projection of their future wellbeing is low. Overall biotic welfare is low for these critters. In this case, it is reasonable to think that the species is harmed in the counterfactual sense. Why? We can reasonably talk about what the polar bear species might look like had climate change never happened because there is an *otherwise* to examine. In other ‘nearby’ possible worlds where the climate is not changing, for example, the species exists and strongly seems to be better off. Because the polar bear species’ existence does not depend on climate change, we can think about what it would be like for that species to exist without climate change. In short, we can look at counterfactuals where the polar bear species is better off.

 Species welfare, I have argued, obtains in virtue of both the welfare of its current individuals and prospective future generations. Suppose some polar bear (whose existence is contingent upon climate change) experiences welfare degradation as an effect of climate change. Let’s call him Knut. Since climate change is responsible for Knut’s existence, following the non-identity problem, we can’t say he was harmed in the counterfactual sense, at least on the views that I have mentioned above. We could, however, look at the effect his suffering has caused to the aggregate welfare of his species. Knut’s welfare degradation probably reduces the overall welfare of the polar bear species, especially if Knut has advantageous genes. Knut’s welfare degradation might also reduce wellbeing of future generations because, perhaps, he is not able reproduce. This would constitute a harm to the species. So even if we cannot say that Knut’s suffering makes him worse off, it is plausible that the species itself is worse off in virtue of Knut’s suffering on my view of species welfare. And if the species as a whole is better off than they would have been otherwise, then the counterfactual comparative account applies to species wellbeing. Thus, we can really say that Knut’s species was harmed on counterfactual comparative in virtue of Knut’s being a member of the species.

 But if it would be better for the species that Knut did not suffer from the harmful effects of climate change, it must also be better for the species that Knut never existed. In the scenario where climate change does not occur, Knut does not exist so if we say the species is better off without climate change we must also say that the species is better off without Knut. This seems like a problem. But this is consistent because the welfare of the species is not contingent on the wellbeing or existence of any particular member. As long as there are more polar bears with higher degrees of welfare in the scenario where Knut does not exist, then it seems right that the species as a whole is better off.

1. Objections and Replies

Objection 1

What about a species whose existence is contingent upon climate change? It’s plausible that the changing climate could influence new evolutionary patterns that will occur in the future, such that a new species (who would not otherwise have existed) emerges. Harm done to that species as a result of climate change would fall prey to a collective version of the non-identity problem because this species would otherwise not exist.

I have two responses: first, since this species evolved as a result of climate change, it is also reasonable to think that it will have advantageous features that resist the harmful effects of climate change. This isn’t certain, but it is a viable possibility at least. Creatures that are more resilient to climate change have less of a chance of being harmed by it.

Second, in regard to complex mammalian, bird, or reptilian species with long lifespans, this would only happen *way* in the future because the evolutionary process for these critters takes a very long time. This possibility is so far in the future that it probably should not enter our present ethical deliberation. In the event that this does happen however, the counterfactual comparative view would be silent about that species’ welfare diminishment.

Consider a natural rejoinder from my objector: The lifespans of microorganisms are substantially shorter than the lifespans of complex mammalian species. Because of their condensed lifespans, genetic modification and natural selection occur much more quickly than mammalian organisms. Consequently, new species can occur in microorganisms much faster than mammalian species. Here’s the problem for my response: I assert that new species will come about much later in the future. But it is likely that new species of may microorganisms appear in the near future. Many of these new species may occur as a result of the changing climate, which would result in a kind of non-identity for these microorganisms. Assuming that they are made worse off by climate change, the counterfactual comparative account would be silent about their detriment, i.e., counterfactual comparative could not say that they are harmed.

 This objection identifies an authentic weakness in my defense of counterfactual comparative. A microorganism species that exists, in the present or near future, as a result of climate change would not be made worse off by climate harm. The question *should we care,* though it lies beyond the scope of this paper, might offer some way out. For example, the different accounts of counterfactual comparative focus on the betterment or worsening of moral patients. If microorganisms are not moral patients in the relevant sense, perhaps their wellbeing should be of little concern for us. So, maybe it does not really matter that we cannot say these microorganisms are made worse off by climate change. Moreover, to draw from my first response, we might think that these microorganisms have genetic resistance to climate change. Again, this is merely a viable possibility.

 Objection 2

An objector could argue that the fact that individual wellbeing and species wellbeing can come apart is actually a weakness of my account. My argument suggests that we can make sense of counterfactual harm for individuals by looking at harms to the species. But consider the following scenario: suppose only aging and sick polar bears that lack advantageous genetic codes are affected negatively by climate change. If this is true, then (since the death of weak individuals is a good for the species) the species is actually benefitted by climate change. We would expect future generations with greater fitness in this scenario. So, assuming these weaker polar bears’ existence is contingent on climate change, the changing climate would not harm any individual according to counterfactual comparative. We cannot make sense of individual harm by looking at the species in this case, given the benefits to the species.

 Response: Though this scenario points to a weakness in my defense of counterfactual comparative, I am not sure climate change actually works this way. It appears that climate change could harm any number of fit individuals in addition to weaker, less fit individuals. If climate change affects both weak individuals as well as fit individuals, then it seems like the species would still be worse off. Thus, we can track individual harm with species harm and use counterfactual comparative to track the harm.

 Besides, even if it is sometimes beneficial for a species to have weaker members die, surely it is not always beneficial. Suppose that climate change kills *all* weaker members of a given species, such that there are few fit individuals left. This would clearly make the species worse off, even though only weaker members of the species are affected. Thus, even though most of the time the death of weaker individuals is beneficial, it does not follow that this is true in all cases.

 Objection 3

Consider yet another objection. There’s a version of counterfactual comparative that the non-identity problem does not threaten, which Atkins (2018) has argued in favor of. John Nolt (2018) offers another version of counterfactual comparative. He thinks that so long as at least one of the consequences of an action makes an entity worse off, this counts as harm: ‘People are harmed (in a comparative sense) by an action or policy only if at least one of its consequences makes them worse off than they would have been had that consequence not occurred’ (5). Consider what I am calling principle H:

*Principle H*: an individual I is harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred

Note that principle H offers a necessary condition of harm. The strength of this account is that it leaves open the possibility of simultaneous harm and benefit. Rather than aggregating *pro tanto* harms and *pro tanto* benefits to determine if a moral patient is harmed or benefited *overall*, Nolt thinks an action is harmful or beneficial so long as it has at least one beneficial or harmful consequence. But first, what is a *pro tanto* harm as opposed to an *overall* harm? A *pro tanto* harm is a specific consequence of an action that must be considered alongside other *pro tanto* harms and *pro tanto* benefits. *Pro tanto* harms can be outweighed by a sufficient number of *pro tanto* benefits and vice versa. In a case where I break your leg to save your life, I would, according to this view, both harm and benefit you rather than benefit you overall.

On this view, we can make sense of the non-identity problem. For example, climate change in some cases harms and benefits those who exist in virtue of climate change. We would not need to look to an alternative state of affairs to see if a moral patient is harmed; rather, we examine each individual consequence of climate change to see if harm has been done. Presumably, if your life is worth living, you’re better off existing (if you exist because of climate change), even if climate change *pro tanto* harms you. The non-identity problem is only a problem when we aggregate *pro tanto* harms and benefits to determine if a moral patient is better or worse off overall; this version of counterfactual comparative avoids aggregation and, consequently, the non-identity problem. We can, therefore, make sense of the non-identity problem *and* keep at least one version of counterfactual comparative. This paper’s solution to the non-identity problem, then, misses this important reconciliation of the non-identity problem and counterfactual comparative; the solution is not necessary isn’t necessary.

 In response, Nolt’s account of harm doesn’t take seriously the possibility of being harmed in an *overall* or all-things-considered sense. The counterfactual comparative account needs the distinction between *overall* harm and *pro tanto* harm. A *pro tanto* harm is a single consequence of an action that might be outweighed by a set of *pro tanto* benefits that are consequences of a given action. So a person can experience a *pro tanto* harm but still not be worse off *overall*. In addition, we cannot make sense of certain statements without this distinction. Consider, for example, the following news headline from Bradley (2012): New studies show surgery is harmful! There are plenty of *pro tanto* harmful consequences of surgery: pain, bodily dismemberment, cutting, etc. These all make the person worse off to some degree. It would be odd, however, if all this statement referred to were these *pro tanto* harms. They are obvious consequences of many surgeries. This statement is interesting and meaningful only if it asserts that surgery makes you worse off *overall*. Suppose that new data emerges that suggests certain surgeries shorten life expectancy. Even though your ailment is cured, you cannot expect to live very long. This new finding would only make sense if we consider harming *overall*. Because Nolt’s account fails to distinguish between overall and *pro tanto* harm, it cannot make sense of the above statement.

 Let’s construe principle H with the distinction between overall and *pro tanto* harm. I’ll argue that one version of the account is false and the other is obvious:

H\*: an individual I is *overall* harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred

This reading of H is false. Consider again the surgery case. Even if I experience some minor pain briefly after the surgery, I would not be worse off overall because, say, I would have died if I had not had the surgery. Now let’s think about a second reading of the principle:

H\*\*: an individual I is *pro tanto* harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred

H\*\* is clearly true. This construal of the principle does not, however, have much bite; it’s obvious. Again, consider the surgery case. It seems odd to think that surgery harms me, even if there is some minor welfare reducing outcome.

 Could Nolt reject this distinction? Perhaps every *pro tanto* harm is a harm. This response is problematic because by rejecting this distinction, we significantly broaden the harmful too widely. Broadening harm this widely is counterintuitive. *Anything* with at least one welfare-reducing consequence would count as harmful. Thus, a surgery, while beneficial in many ways, is harmful according to this account so long as there is one welfare-reducing consequence. We would have to say that surgery is both harmful and beneficial. Again, we could not make much sense of the headline I mentioned above because it makes the most sense under an all-things-considered account of harm.

 On Nolt’s account, it seems that every surgery is harmful simply in virtue of having *at least* *one* welfare-reducing consequence. But it seems wrong to conclude that surgery *just is* harmful. We need to aggregate the number of harmful consequences and beneficial consequences and then determine if there is overall more harm or more benefit. But when we do that, I think that the appeal of this account diminishes.

1. Conclusion

I have argued that species wellbeing is best understood as the present aggregate biotic welfare and the projected aggregate welfare of the species in the short to medium-term future. This conception of species wellbeing has several interesting philosophical advantages over, for example, Nolt’s (forthcoming) and Rolston’s (1988) views of species wellbeing. I then turned to a novel solution to the non-identity problem, arguing that we can make sense of harm to future species because the existence of such species is not contingent on climate change.

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1. This example comes from Nolt (forthcoming) and Rolston (1988). [↑](#footnote-ref-1)
2. I omit more sophisticated versions of the counterfactual comparative view of harm (such as those outlined in Purves (2019), Carlson (2018), and Klocksiem (2012)), as well as independent criticisms of counterfactual comparative (such as McMahan (2012) and Bradley (2012)), in the interest of space. As far as I can tell, these accounts too are subject to the issues posed by the non-identity problem. For my purposes, however, this general version of counter factual comparative is sufficient. [↑](#footnote-ref-2)
3. See Purves and Hale (2016) for substantive treatment of the non-identity problem for non-humans. [↑](#footnote-ref-3)