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## **Protecting Future Generations by Enhancing Current Generations**

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**ABSTRACT:** It is plausible that current generations owe something to future generations. One possibility is that we have a duty to not harm them. Another possibility is that we have a duty to protect them. In either case, however, to satisfy the duties to future generations from environmental or political degradation, we need to engage in widespread collective action. But, as we are, we have a limited ability to do so, in part because we lack the self-discipline necessary for successful collective action. Given that having an obligation hinges on being able to satisfy it, the apparent duty to future generations is at odds with our apparent inability to satisfy it. Thus, we either need to rethink our duties to future generations or rethink the nature of our abilities. I argue in this chapter that we should rethink the nature of our abilities. Specifically, we should enhance our self-discipline, which is distinct from enhancements of motivation, judgment, or emotion. Even the most intelligent, motivated, and empathetic actor is likely to slip up, which encourages others to withdraw their cooperation. Without the necessary self-discipline to sustain our public cooperative behavior, collective action is likely to fail, leaving us with one alternative: to abandon our duties to future generations.

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Almost all adults currently living will be dead by 2100, and the vast majority of them well before then. They will enjoy pleasures and suffer pains, be thankful and regretful, get sick, recover, then get sick and die, maybe in a hospital, maybe alone. They will get cancer and the coronavirus and have heart attacks and strokes. Much of the time between now and 2100 will be time in which currently living adults don't exist at all. But if they do exist, much of that time will be spent suffering, not only in the physical sense but also in the more important existential sense. They will watch their children and parents and spouses and siblings die; they will struggle for resources such as adequate food and water and shelter. They die for much of this suffering has already been cast, either through genetic and social inheritance, or through individual habitual behaviors. Some of this suffering will result not from individual behaviors like smoking or drinking or eating unhealthy foods or risk-taking, but from behaviors which individually are nominally risky or harmful but collectively devastating. Eating meat may clog the arteries and lead to congestive heart failure, but collectively eating meat degrades the land and contributes to global warming. Consuming fossil fuels may harm an individual's lungs or other organ systems, but collectively it warms the planet. Not getting vaccinated may expose the individual to risk of disease, but collectively it makes it more likely that infectious diseases will run rampant. Voting for poor leaders and policies may have no discernible impact on the outcome or one's well-being, but when lots of people so vote policies and customs are implemented which may harm the individual or expose them to risk.

However, plausibly most living adults will not suffer or die from the consequences of this sort of collective behavior, though many will suffer and die from things like

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congestive heart failure and flu. Today's adults will suffer and die from the things that ordinarily kill humans. Also plausible: today's children and the immediately descendent generations will disproportionately suffer and die from collective action. As compared to today's adults, today's children and subsequent generations will be more likely to suffer and die from the consequences of climate change, among other threats. Perhaps the food supply will be more limited and they will die of hunger, or perhaps they will be displaced and be forced to migrate to overpopulated areas. Or perhaps they will die in a natural disaster, which may become both more frequent and severe. Or they may die from the consequences of the political destabilization that results from climate change.

These paths to future generations' suffering and death will result from the collective actions and omissions of current and immediately past generations. And it's not that these paths are currently merely potential—they are already before us and are likely to only get more catastrophic, as a result of the collection of current and immediately past individuals' actions and omissions. Members of future generations will suffer and die at the hands of current generations to a greater degree than other generations suffered and died at the hands of those before them.

Given that this suffering and death will result from previous and current generations' collective action, what, if anything, is owed to future generations? And if something is owed to them, who owes it and what does it require of them? The present purpose is to offer an answer to these questions, albeit an answer that is incomplete and unconventional. My answer is, roughly, that we (currently living adults) have a moral duty to protect the well-being of future generations and can only do so by

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undergoing widespread enhancement of our cognitive and moral capacities. Everything that follows serves to support this claim.

The article proceeds this way: I first argue that we have a duty to protect future generations. The only way to satisfy this duty, however, is to behave in ways that are far beyond our capacity. We can't do what needs to be done to satisfy our duty to protect future generations. In particular, most people lack the self-discipline to establish and sustain the behaviors that are necessary for successful collective action. Drawing on the commonly but not universally held notion that 'ought' implies 'can,' I then argue that we must either abandon our duty to protect or improve our skills in self-discipline. Since, as I claim, abandoning the duty to protect is much worse than enhancing our discipline, we ought to enhance our discipline so that we are able to meet our moral duty to future generations.

## **1. Duties to Future Generations**

Examples of the duties to future generations abound. Suppose a bomb-maker, as his last act, plants a small bomb under a playground for toddlers at a city park, and sets it go off in ten years. When it goes off, it will kill or maim anyone on the playground, which will be almost entirely toddlers who, at the time of planting, are not yet alive. Obviously, it is wrong for him to do this. There are number of reasons it might be wrong. One is that it violates a duty he, like everyone else, has toward other people—the duty to not harm others. That is, it is wrong for him to plant the bomb because it violates the duty to non-maleficence. We must all refrain from harming others, no matter their

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relation to us in time and space, unless the harm is justifiable, such as in self-defense. And since his act will harm others, even though they are not yet alive, it is wrong at the time of planting.

If this is why the bomb-maker's act is wrong, then it is plausible to say something similar about climate change. By continuing to eat meat, consume fossil fuels, and otherwise act in ways that change the climate, we are harming future generations. They, after all, will be harmed by these actions. Routinely eating meat and driving a gas guzzler is like helping to craft and set the bomb under the playground. Thus, if we have a duty to not harm future generations, then our current actions violate that duty. It's a plausible first step in explaining why it's wrong to ruin the environment for the next generations.

There are a few problems with this approach, however; one related to whether we have a duty to not harm future generations and others related to whether insignificant individual contributions to collective actions violate it, if we have it. The problems are familiar. First, there is at least one good reason to think that we don't have a duty to not harm future generations, and that's the non-identity problem (Boonin, 2014; Kavka, 1982; Parfit, 1986). Suppose that we pursue a policy of depleting all available resources in a way that is most convenient for us, but that this depletion will cause future generations to suffer (Parfit, 1986). Plausibly, the pursuit of this policy also affects decisions about reproduction such that if a different policy were pursued different children would be born. Thus, the people who are alive to suffer the consequences of our pursuit of resource depletion are not the same people who would be alive if we were to pursue conservation instead. This means that the people who do suffer the

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consequences of depletion would not have existed in other circumstances. Given that it is better to live and suffer than to not live at all, the people who suffer the consequences of depletion are better off than they otherwise would be, since otherwise they just wouldn't exist. And since they are better off than they otherwise would be, it's difficult to see how depletion of resources harms them, because it doesn't make them worse off.

A second problem is that it's not clear how to reconcile the fact that any harms that future generations might experience result only from very many individuals and their actions, each one of which is insignificant and has no bearing on the outcome, but collectively cause it (Sinnott-Armstrong, 2005). One act, one person, don't affect the outcome. And if they don't affect the outcome, plausibly they have not harmed future generations by pursuing resource depletion.

There are large bodies of literature addressing these problems and include some potential solutions. Here it suffices to note that the problems are significant enough to warrant looking elsewhere to account for our duties to future generations. The problems may not undermine the idea that we have a duty to non-maleficence to future generations, but they do make it a little less plausible.

There are other duties we might have toward future generations. Furthermore, these other duties might be able to avoid the above problems that face the alleged duty to not harm members of future generations, though this point is not one I offer a vigorous defense of. The duty to non-maleficence holds for all people—everyone has a duty to not harm others, unless of course the harm is justified by other circumstances. Whether one has a duty to not harm another person is independent of the relation between the duty-bound and the right-holder. I have a duty to not harm my children and my

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neighbors, but I also have a duty to not harm perfect strangers, wherever and whoever they may be. But it is quite intuitive that we have some obligations in virtue of a relation we have to another person. Everyone everywhere has a duty to not harm my children. But I have additional obligations toward them that no one else has. For example, I must protect them from various risks and threats.

My duty to protect my children requires that I, for example, keep the bleach and knives inaccessible. It requires that up until a certain age I hold their hand while they cross the street. It requires that I ensure that their car seats are properly installed. It requires that I anchor tall, heavy furniture. And it requires that I do the very many other things to protect them from a wide range of risks and threats. Others do not have these duties. My neighbors have no such obligations toward my children, though they do have them toward their own. A far away stranger has no obligation to make sure that my children safely cross the street, but they do have an obligation to not harm my children.

There are a couple of features of this duty to protect that distinguish it from the duty to not harm. The first is that the duty is violated even if there is no bad outcome. Such is not the case for the duty to non-maleficence. If I aim and shoot an arrow at a person from a distance, but miss without them any wiser to my attempt, I have not violated the duty to not harm. They are just as well off as they were before I took the shot. If they know of my attempt, then it is reasonable to think that this knowledge makes them worse off. But absent this knowledge, their life is no worse off than it was. It doesn't mean that what I did wasn't wrong, but my wrong act did not violate the duty to non-maleficence.

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Note at this point that if one claims that I did violate the duty to non-maleficence, then it must be true that harm is not a matter of making a person worse off than they otherwise would have been. Some people think it is true that harm is not a matter of being worse off than they otherwise would have been, that harm is non-comparative (Harman, 2009; L. Meyer, 2003). But even on these accounts of harm, a necessary condition for a person to be harmed, and therefore for the duty to not harm to have been violated, is that the victim's well-being is somehow affected by the act. But if shooting and missing, unbeknownst to my target, violates the duty to not harm, then harming another person is not necessarily a matter of the victim's well-being. On such an account one person could harm another without affecting their well-being or, even less plausibly, harm the person but promote the person's well-being. It is far better to say that in shooting and missing I did not violate my duty to not harm my target.

The violation of the duty to non-maleficence requires that a person actually be harmed; the violation is tied in part to the outcome of the act. But there is no such tie that binds the violation of the duty to protect. Suppose I am with my child and we are crossing a busy street. As children often are, also suppose my child is disposed to dart off. When we are crossing the busy street together, I neglect to hold his hand and he darts off. Oncoming traffic swerves and misses and we both reach the other side of the street. Of course, I did not violate my duty to not harm him. After all, his well-being is unchanged. But I did violate my duty to protect him. The same would be true if I left the knives and bleach and the bow and arrow easily accessible, say, next to his bed. He may never touch them and even if he does his well-being may not be affected. But I still violate my duty to protect him.

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The above examples also work to illuminate a second feature that distinguishes the duty to protect from the duty to non-maleficence. Presuming that there is a morally relevant difference between acts and omissions, the duty to non-maleficence primarily proscribes acts rather than omissions. Typically, for one person to harm another the former must *do* something such that the latter's well-being is affected. But the duty to protect proscribes both acts as well as omissions. Indeed, the duty to protect may even primarily proscribe omissions. When crossing the street or storing dangerous objects, I violate my duty to protect because of what I fail to do. The duty to protect requires that I shield my children from some things. The primary way in which I violate the duty is by failing to put up the shield.

So, we have these two characteristic features of the duty to protect: it can be violated in the absence of a bad outcome; and it proscribes (maybe even primarily) omissions as well as acts. These are not features of the duty to non-maleficence. A third difference is that everyone everywhere has a duty to not harm, and everyone everywhere holds the corresponding right against everyone else. But the duty to protect and the corresponding right only arise in the context of particular relationships. My claim is that the relation that gives rise to the duty to protect holds between members of current generations and members of future generations.

A fourth difference is that a person can have a duty to protect, even when there is no identifiable holder of the right to be protect. A ship's captain has a duty to protect her passengers. Satisfying this duty requires various preparations prior to any passenger embarking, such as ensuring that there are sufficient lifeboats and provisions and that the ship is in good working order. If she fails to make these preparations, she violates

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her duty to protect. She violates it regardless of whether anyone else is on board, and even whether anyone has purchased passage. Her duty is to future passengers, who may not be identifiable. There are thus some clear instances in which the duty to protect holds to future, unidentifiable individuals.

## **2. Duty to Protect**

There are multiple accounts of what grounds special obligations such as the duty to protect. Some think that special obligations arise out of the duty-bound self-assuming them, such as when they voluntarily participate in particular relationships (Brake, 2010). A far less common account is the vulnerability model, which Robert Goodin (1985) develops in detail. According to the vulnerability model, one person has a duty to protect another when the latter's interests and their satisfaction are vulnerable to the former's actions. A child's interests are vulnerable to the actions of their caregivers. An elderly parent's interests are vulnerable to the action of their adult children. Adult children thus have a duty to protect their elderly parents (and, arguably, the adult child never voluntarily assumes that relation). Passengers on a ship are vulnerable to the actions of the captain, so the captain has duty to protect her passengers.

Goodin bases the vulnerability model in common sense morality; most of us recognize obligations that hold between specific individuals. Such recognition is common enough that it represents a strong objection to theories that imply there are no such obligations, such as agent-neutral utilitarianism. Apart from common sense morality, however, Goodin's argument for why we should prefer the vulnerability model

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to other models is that the vulnerability model can explain both the *scope* as well as the *content* of the duty to protect and other special obligations, which, according to him, other models cannot do. That is, the vulnerability model is supposed to explain who holds the obligations and to whom, and it can explain what the obligations require of the people who hold them.

Specifically, when a person has a duty to protect another person—when the person's interests are vulnerable to their actions—they must protect that person's interests. But they must only protect those interests to the extent that (a) the other person's interests are vulnerable to them and (b) as with all obligations, the extent to which one is able to do so. One implication of this account is that as vulnerability varies, so does one's duty. If you are the only person near a child drowning in a shallow pond (Singer, 1972), their interests are highly vulnerable to you, which engages a strong duty to protect those interests. But if you are far away, and there are many others in a better position to save the child, then their duty to protect is stronger than yours. Thus, the content of the duty to protect on the vulnerability model can vary by, among other factors, time and distance, as these impact vulnerability between two individuals. Children are highly vulnerable to their caregivers, and so a strong duty to protect holds between them. Elderly parents are highly vulnerable, especially emotionally, to their adult children, and so a duty to protect holds between them. The same goes for a ship's passengers and its captain.

Another implication is that one can involuntarily be obligated to protect another person's interests, as in the example of child drowning in a shallow pond. Because engaging the duty to protect merely requires a vulnerability relation, and the vulnerability

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relation can be engaged whether one wants to be in such a relation, having the duty to protect another person is not necessarily a matter of one volunteering or assuming that role. This feature of the vulnerability model of the duty to protect counts in its favor, for it can easily explain why we think someone has a duty to protect another even when that role was not invited. For examples, it can account for the adult child's duty to protect their vulnerable elderly parents and for the parent's duty to protect their unplanned or unwanted children. Importantly, the vulnerability model also implies that we have a duty to protect members of future generations, even though many people currently living would not assume that role for themselves. The same may not be true for the duty to non-maleficence, for the reasons outlined above.

Whether currently living people have a duty to protect members of future generations depends on whether their interests are vulnerable to our actions (scope). What the potential duty to protect requires of us depends, in part, on the extent to which their interests are vulnerable to our actions (content).

On the one hand, it is clear that future generations will suffer because of what we do or fail to do now. Their interests and well-being will be compromised because of current generations' actions and omissions. Thus, they are clearly vulnerable to us. Since vulnerability triggers a duty to protect, current generations have a duty to protect future generations. Indeed, that current generations have a duty to protect future generations on the grounds that the latter are vulnerable to the former has some appealing features. One is that it can account for the intergenerational duty even when one doesn't invite or volunteer for it, whereas more prominent theories of how special

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obligations arise cannot. Another is that it doesn't necessarily get caught up in the problems that, for example, the duty to non-maleficence has.

The duty to protect may evade the non-identity problem. The duty to protect can be violated even when there is no harm, when the protector merely exposes the protectee to unacceptable risk. Thus, there is no need to compare future generations' well-being to how it otherwise might have been. Failing to protect someone who you owe protection to is wronged, regardless of whether they are harmed. Thus, the duty to protect represents a way in which one can be wronged without being harmed, which is one way the non-identity problem may be avoided (Boonin, 2014).

A third feature is that it can account for how a moral duty to future generations wanes for subsequent generations. The duty to protect varies with the strength of the vulnerability relation, which varies according to, among other things, time and distance. The next generation is more vulnerable to current generations than generations hundreds of years in the future. Thus, our duty to protect the next generation is stronger than the duty to protect the generation that follows, and so on. That we owe more to the next generation than the one after that seems right, but other accounts of special obligations have a more difficult time with that intuition. For example, it is a challenge for the voluntarist to explain how the duty to protect can vary according to time and distance, or how the current generations' moral obligations toward generations in the distant future are weaker than the obligations toward the next generation.

So, on the one hand it seems plausible that we have a duty to protect future generations, and that we violate that duty by continuing the behavior that will lead to their suffering and failing to do the things that are necessary to protect them from that

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suffering. On the other hand, for a person to have duty to protect another person, the latter must be vulnerable to the former. A future person is not significantly vulnerable to a person currently living. One person makes very little difference. If I were to suddenly vanish and my contributions to global warming end, there would be no discernible difference in the outcome. Future generations would still suffer from the actions and omissions of the current generations. The same is true of any particular person—an individual makes very little difference. Thus, it is hard to see how any individual has a duty to protect a future individual, on the vulnerability model.

However, future individuals are highly vulnerable to the *collection* of current individuals. Setting aside issues related to the distribution of duties across collections of individuals, the *collection* of currently living individuals has a duty to protect future generations. And whether the *collection* succeeds or fails in satisfying this duty is dependent on individual members' actions and omissions (Bowles & Gintis, 2011; Fehr & Fischbacher, 2004; Fehr & Gächter, 2000). The welfare and interests of future generations are highly vulnerable to the actions of the collection; and whether the collection satisfies its duty to protect more significantly depends on the individuals' actions and omissions. In pursuing collective action, one person who fails to cooperate can sink the whole enterprise (Bowles & Gintis, 2011), which means that in collective cooperation to secure a good (i.e., the satisfaction of the duty to protect) one person can make a difference as to whether the collection succeeds. The welfare of future individuals may not be highly sensitive to the behavior of currently living people, but the success of collective action is highly sensitive to individual behavior. Thus, future individuals' welfare and interests are indirectly vulnerable to currently living individuals,

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because currently living individuals can make a significant difference to the success of the collection. An individual may not have a duty to protect future generations, but an individual is critical to the success of the satisfaction of the collective's duty. Or, we have duty to protect future generations, but *I* don't. Rather, *I* can make a difference as to whether the collection satisfies this duty, because if *I* defect from cooperation, satisfying the duty is less likely.

And this is where, finally, moral enhancement takes the stage. *I*, and almost all other members of the collection (which has the duty to protect future individuals), am generally incapable of doing the things necessary for the collection to be successful. That is, *I*, and almost everyone else, am incapable of not defecting. Most people, in order to cooperate in the way necessary for satisfaction of the collective duty to protect, need a boost, an enhancement.

### **3. Discipline and Enhancement**

Cooperation, or failing to defect, requires quite a lot of an individual. The person must be motivated to cooperate. The motivation itself may require the judgment that one ought not do things that undermine future individuals' welfare and interests. This motivation and judgment are the typical targets for moral enhancement (Douglas, 2008; Harris, 2011; Jebari, 2014; Ingmar Persson & Savulescu, 2013; Wiseman, 2016). But often ignored is a different capacity necessary for successful collective action: the discipline sufficient for *sustained* cooperation. One public defection can encourage others to defect, which amplifies throughout the collection, undermining the goal

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(Bowles & Gintis, 2011). Defection signals to others that success is unlikely, causing them to withhold their own contributions. Defection indicates that one's own sacrifices are likely to be wasted, causing them to withhold further contributions. Thus, for success to be possible, public defection must be eliminated, which means that public cooperation must be sustained. Not only must an individual be able to cooperate once (which requires things like the judgment that they ought to cooperate and the motivation to act on that judgment), but they must also be able to sustain that cooperation. This in turn requires extraordinary self-discipline. Few of us have the capacity to maintain the discipline required for sustained cooperation.

Consider just a few of the things that would count as a defection—public behaviors that generally contribute to global warming. Buying or eating meat, driving rather than biking or walking, buying or otherwise consuming anything made of plastic, using heat or air conditioning, and leaving your house lights on are all publicly observable behaviors that indicate to others that one is defecting from cooperation. In order to cooperate and the collection of currently living individuals to satisfy their duty to protect future generations, one needs to refrain from these behaviors and many more. Others observing one perform these behaviors undermines cooperation, as it encourages them to defect themselves.

Very few people in those areas most undermining the collective duty to protect (i.e., U.S., China, Europe) have the discipline to refrain from doing these things. Most of the behaviors are well integrated into the normal routines of daily living. For the very few people who consistently refrain from these behaviors, it is important that they not slip up, and relapse into eating beef and pork, or driving, or leaving the lights on, or flying to

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a conference. If they do, it tells others that the goal of satisfying the collective duty to protect is less likely achieved, causing them to continue their own damaging behaviors.

Supposing that such people have the appropriate psychological arrangement of the judgment and motivation, people generally don't have the self-discipline to change their behaviors so significantly or to consistently maintain that change. Regardless of the source of this lack of discipline, it is beyond most individuals' capacity to consistently refrain from these behaviors. Since consistently maintaining this discipline is necessary for the collection of currently living individuals to satisfy its duty to protect future generations, satisfying this duty to protect is not currently possible. There are other reasons to think that satisfying this duty to protect is not possible, such as the notion that cooperation in achieving the collective goal can't be sustained when one's contributions are primarily in private. Anything other than public and accurate demonstrations of cooperation are likely to undermine satisfying the duty to protect.

To be clear: I am claiming that even if a person's moral psychological state is otherwise appropriately arranged—they have the proper moral judgments, emotions, and motivations—without the discipline needed to avoid defection, the collective duty to protect will go unsatisfied. The moral enhancement literature has rightly focused on these other states, along with cognition. But all of the improved capacities that arise from such enhancements won't do anything to help future generations if they aren't coupled with the discipline to sustain and maintain the behaviors necessary for successful collective action.

Most people accept that what one is obligated to do is dependent on what one can do. Often this idea is expressed as though *ought implies can*. But the relation between

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'ought' and 'can' may not be implication. I have argued elsewhere that if *ought implies can* means anything that is useful, it must mean that 'ought' implies (or makes probable, etc.) 'deliberately can' (Scheall & Crutchfield, in press) But 'deliberately can', just means 'knows enough to.' Thus, *ought implies can* really means *ought implies knows enough to*. Knowledge in this case encompasses both propositional knowledge ('knows that') and skills ('knows how'). Currently living individuals lack the knowledge and skills for the collection of such people to satisfy the duty to protect. We are widely ignorant not only of what we need to do, but also of how to go about the behavior change and sustenance.

Given that we are not currently capable of satisfying the duty to protect, due to our ignorance and subsequent lack of discipline, if being incapable of satisfying a duty releases one from that duty, it is plausible that we don't have a duty to protect future generations. The same is true of the duty to non-maleficence. The following three claims cannot all be true: (a) we have a duty to protect future generations; (b) we are currently incapable of satisfying the duty to protect future generations; (c) *ought implies can*.

Others may wish to challenge (c). I find it plausible, however. Denying (a) is extremely costly, not only for future generations. It is costly because we intuitively owe something to future generations, and accounting for this obligation by appealing to the duty to protect seems right. It doesn't seem like it is permissible to use resources however we want, future generations be damned. Some degree of conservation *seems* obligatory, and the vulnerability model of the duty to protect is a plausible way of accounting for this obligation. However, so long as we have any obligation to future

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generations, and satisfying this obligation requires successful collective action, then the problem of insufficient self-discipline remains. That is, even if our duty to future generations is the duty to non-maleficence, this duty can be satisfied only if current generations have the appropriate self-discipline, which is need of improvement.

Thus, if supporting a plausible obligation to future generations is important, the only other option is to deny (b). To deny (b) is to claim that we are currently capable of satisfying the duty to protect. But as I claimed above, the necessary behaviors are beyond our current capacities, in particular our self-discipline. To deny (b) then, what we are capable of must change. If it is going to be true that we *can* satisfy the duty to protect, then what we *can* do must be other than what it currently is. Our capacities must change, if we are to satisfy any duty to protect future generations. To rescue our obligation to future generations, we must make (b) true. Until then, we are the captain of the ship who thinks that they don't need to check the lifeboats yet again.

One might believe that we can satisfy the duty to protect as we are—our capacity for discipline is adequate as it is. This claim could take two forms. One is that no intervention upon our self-discipline is necessary. This needs significant defense, however. One would need to demonstrate that potential defectors (i.e., everyone) won't publicly defect; that our self-discipline to consistently maintain the behaviors necessary to protect future generations is already sufficient. It is plainly false that this is the case. As mentioned above, even the most disciplined occasionally slip up. Indeed, a common dieting recommendation is to incorporate "cheat days", days in which one can let down one's discipline. Such advice is an implicit recognition that most of us can't maintain self-discipline.

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The second way one might resist the claim that we can satisfy our duty to protect only through enhancement is to claim that intervention upon our self-discipline is necessary. It just doesn't need to be a biomedical enhancement. Other interventions might work. This is a common strategy in the debate about the appropriateness of enhancement. It presumes that effective non-biomedical interventions are available. For example, we don't need moral bioenhancement to improve a person's moral psychology, because inducing the targeted states and behaviors can be accomplished with education.

I don't think in the case of moral psychology that education is sufficient, but leave that aside. In the case of enhancing self-discipline, education is insufficient. It is insufficient because (a) it's not something that is incorporated into contemporary curricula and (b) more informal methods of education are far too limited. I've spent the entirety of my education in public schools, some large and some small, and not once in any educational setting has anyone attempted, or even mentioned, ways of improving my skills in self-discipline. And I don't know of anyone who is any different. Getting through school and being a high achiever in education indeed requires some self-discipline. But no one teaches that skill—you either have it or you don't. And if you don't, it's on you to get it. The importance of the absence of developing skills in self-discipline from modern education is that it we are already so far behind in the implementation of non-biomedical interventions upon self-discipline that they'll never catch up to the need. We've been shaping moral psychology with education for thousands of years and we still get it wrong. If we start on self-discipline now, and that's all we do, it will be too late. And even if it's not too late, just as there are failures in any

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educational subject some people will fail the curriculum in self-discipline then go out into the world and defect, dooming the ability to satisfy the duty to protect. More informal methods of education in self-discipline, such as the continued widespread dissemination of books, apps, fads, lifehacks, will fare even worse.

Our capacity for self-discipline isn't presently enough to satisfy the duty to protect future generations. Education, the most common alternative to biomedical enhancements, isn't sufficient to enhance these capacities. If we are to satisfy our duty to protect, our self-discipline must improve. Non-biomedical means of improving it are insufficient.

Alternatively, we may satisfy our duty to protect by enhancing our self-discipline in other ways. Buchanan and Powell (2018) argue that by intervening on the broader socio-political environment it is possible to implement non-biomedical moral enhancement. For example, by preventing the conditions that give rise to immoral behavior, such as pandemic, we can enhance moral capacities. But such a strategy is also insufficient to improve our capacity for self-discipline. One lesson from the COVID-19 pandemic is that it takes a lot of self-discipline from everyone to prevent pandemic. The same is true for intervening on other socio-political factors. So, this strategy relies on the very skills that need enhancing, undermining its effectiveness.

Many arguments for moral enhancement recommend the improvement of some directly moral capacity, such as the capacity to make moral judgments and be motivated to act morally. Other arguments focus instead on the improvement of more general capacities, such as cognitive capacities (Agar, 2013; Ingmar Persson & Savulescu, 2013), or on the hormonal and emotional foundation of moral action (Persson &

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Savulescu, 2014). For example, making someone smarter may cause her to make better moral judgments, or providing someone with a substance that increases empathy may make her more cooperative with members outside of her own social group.

The present argument assumes that one's broadly moral capacities are up to the task of cooperation, that people understand that they ought to do the things necessary to protect future generations and then be motivated to do them. For most people, these are not true, and the extent to which people are incapable of making such judgments and being so motivated is the extent to which the argument for the necessity of moral enhancement is strengthened. But even if a person has these capacities, for them to not encourage others' defection, the person must have the self-discipline to develop and sustain these behaviors and to never publicly deviate from their performance.

Behavioral change is difficult. Most attempts at it fail. Weight loss and substance abuse are notoriously resistant to change. People often succeed at changing their behaviors related to diet, exercise, sleep, and substances, but it usually takes more than one attempt to succeed, and many continue to fail to change behavior. The behavioral change required for satisfying the duty to protect future generations would require most people to upend their normal patterns of living and re-organize everything related to their work, home, travel, education, and eating behaviors. It requires significantly more discipline than that required for someone to maintain a low-carb diet or exercise an additional two times per week. My claim is that most people's well of discipline is not deep enough to make and sustain these necessary behavioral changes.

#### **4. Conclusion**

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It is beyond most currently living individuals' capacity to contribute to the satisfaction of the duty to protect future generations. Rather than excuse everyone from the obligation, it is better to change what these individuals can do. What they need to do is beyond their reach. Thus, an intervention is required. Standard interventions upon a persons' attempts at behavioral change, such as education and cognitive behavioral therapy are either obviously insufficient or inefficiently administered. Something stronger is needed. We aren't going to do it on our own.

One option is for the state to punish these behaviors such that they are extinguished. However, this intervention would be so invasive that one might wonder whether what is gained (i.e., satisfying the duty to protect) is worth the price (surrendering a great deal of liberty).

Another option is to biologically intervene on a person's self-discipline, presuming such an intervention is possible. Because the lack of self-discipline is normal, it is not pathological. Since it's not pathological, it is inaccurate to say that an intervention upon the capacity is a treatment. It would be a bioenhancement. Moreover, since it would significantly enhance our capacity to satisfy our special obligations, our duty to protect, it is a moral bioenhancement. There are no obvious candidate substances for use as such an enhancement, however. Bowles and Gintis (2011) suggest that a sense of shame is important to sustaining an individual's sustained contribution to a collective goal. Shame may also be effective in inducing behavioral change—it's certainly one that is commonly used (e.g., in changing behaviors related to smoking tobacco). Thus, a substance that increases shame may be a plausible starting point for development of an

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appropriate moral bioenhancement. But shame itself is quite unpleasant. And it's possible that the lives of large groups of ashamed currently living individuals would be worse than the lives of future individuals whom we fail to protect.

I and others have written that moral bioenhancements don't require the enhanced to sacrifice much of moral value. Although state coercion at the level needed to sufficiently punish the problematic behaviors and widespread shame would arguably be too high a price, moral bioenhancements, even if compulsory or administered secretly, generally don't come with nearly as a high cost. We don't have to sacrifice liberty, autonomy, equality, or utility to be better able to satisfy our moral obligations (Crutchfield, 2021). But if we don't enhance our ability to make and sustain significant behavioral changes, we will be sacrificing the well-being of future individuals. Protecting future generations, in the absence of enhancement, is so far out of our reach that we are excused from it, freeing ourselves to eat meat, guzzle gas, blast the air conditioning, and fly to conferences with no moral qualms.

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