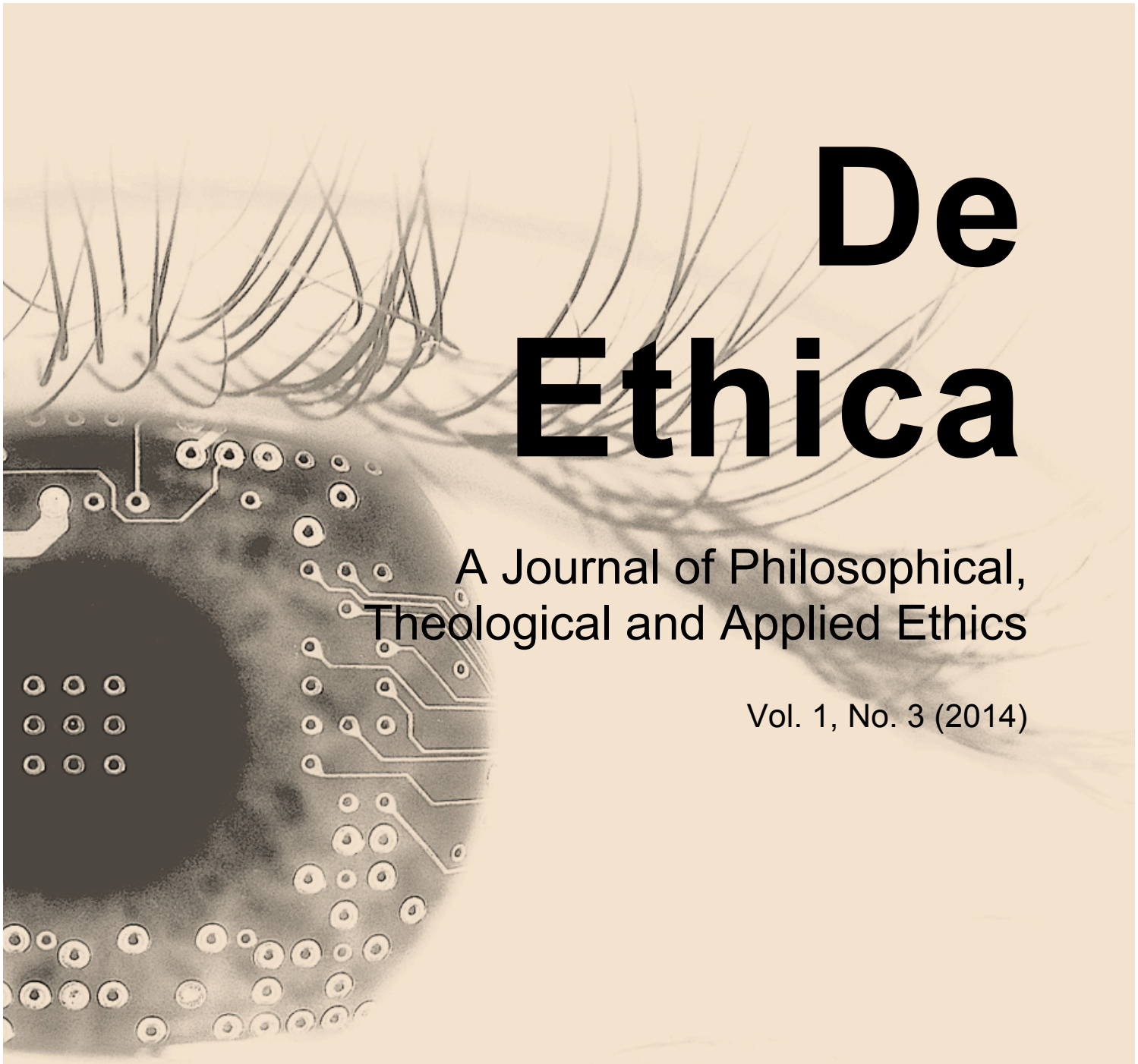

De Ethica

A Journal of Philosophical, Theological and Applied Ethics

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D E E T H I C A

A JOURNAL OF PHILOSOPHICAL, THEOLOGICAL AND APPLIED ETHICS

De Ethica seeks to publish scholarly works in philosophical, theological and applied ethics. It is a fully peer-reviewed, open-access publication hosted by Linköping University Electronic Press. We are committed to making papers of high academic quality accessible to a wide audience.

De Ethica is published in cooperation with *Societas Ethica, the European Society for Research in Ethics*. *Societas Ethica* was founded in Basel, Switzerland in 1964; today it has more than 200 members from more than 20 countries, representing a variety of theological and philosophical traditions. The annual conferences of *Societas Ethica* draw speakers from across the globe and provide a lively forum for intellectual exchange. Like *Societas Ethica*, *De Ethica* aims to create dialogue across national, political, and religious boundaries.

We welcome contributions from all philosophical and theological traditions. While we do welcome historically and empirically oriented work, our focus is on normative ethical questions. We also have a special interest in papers that contribute to ongoing public debates.

It is our aim to facilitate intellectual exchange across disciplinary and geographical boundaries and across the gaps between different philosophical and theological traditions. Thus we seek to publish papers that advance a clear and concise argument, avoid jargon, and are accessible to a non-specialized academic audience.

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By publishing exclusively online, *De Ethica* is not only more accessible than most traditional journals, but its production is also considerably more environmentally friendly. *De Ethica* is a not-for-profit operation; hence we welcome donations that might help us to improve the journal's quality, but we do not rely on them.

From the Editors

With the third issue of *De Ethica*, we complete the first volume and the first year of the journal. When we started, we anticipated that there would be three phases that a journal must work its way through. First, a journal must go from being a mere idea to actually becoming a journal by putting together an issue. This was a process that required some effort, and an experience that consolidated the editorial team. In many ways, it was 'learning by doing', and the publication routines were fine-tuned along the way. In our case, this process was greatly facilitated by Linköping University Electronic Press, which handles the actual publishing for us. That, together with our Editor in Chief Brenda Almond's extensive experience and the financial support we were granted from the Swedish Research Council, enabled us to successfully navigate our way through the first phase.

A second phase that a new journal has to survive is the first couple of years of publishing, trying to establish a publication record and to earn a reputation as a promising journal. Having published three issues in 2014, we are on our way to prove ourselves as a reliable journal. *De Ethica* is still, as it should be, in this second phase.

Within a couple of years, we hope to move into the third phase of a scholarly journal. In this phase, the journal is an established academic outlet, with well-functioning routines and a steady stream of high-quality submissions. The challenge in this phase is to consolidate and to consistently improve the reputation and overall quality of the journal. Given the competition among academic journals, this is no doubt a formidable challenge, which will require considerable work – and perhaps even luck. Nevertheless that is what we aim for: to become an established journal known for its high quality, in terms of both content and publication process.

But we are not merely trying to establish *De Ethica* as a scholarly journal. We are also trying to build a Societas Ethica journal.[1] This is perhaps not the most difficult task – after all, *De Ethica* is the creation of Societas Ethica, and continues to be intimately linked to the society – but it is an important one. While remaining a journal that appeals to a wide scholarly audience, it should also reflect the values and diversity found in Societas Ethica, and it should be an attractive option for members to publish their work in. In the years to come, we hope to consolidate *De Ethica* not only as a high-quality journal, but as Societas Ethica's high-quality journal.

In the last issue of 2014 we offer three articles, all of which discuss topics that are important not only to fellow scholars, but to policy-makers as well as the general public. The first article, by William Simkulet, deals with questions related to free will and moral

[1] Information about Societas Ethica is available at http://www.societasethica.info/?l=en (accessed 2014-12-08).

responsibility. Simkulet argues that the concepts of free will and moral responsibility are inexorably tied to our experiences of us as free and morally responsible agents. If true, Simkulet argues, then the theories of determinist compatibilists are incoherent.

The second article, by Norbert Campagna, examines the important ethical problem of climate migration and the state's duty to protect. Campagna argues that we have a human right not to have to migrate, and that the protection of such right implies that every state has a *prima facie* duty not to allow activities on its territory that, as a consequence, will force people to migrate.

The third article in this issue discusses bioethics and environmental ethics in general, and human enhancement technologies and sustainability in particular. Joan McGregor attempts to reunite the two general areas, and argues that when doing so, one will discover that many of the envisioned scenarios involving human enhancement fail in regard to our duties to future generations.

De Ethica and its editors would also like to use the occasion of this first complete volume to thank the scholars who have helped us by serving as reviewers. Our reviewers have helped to increase the quality of the submitted papers by their insightful and constructive comments. We wish to express our gratitude to David Alm, Ben Almassi, John Baird Callicott, Edward Beach, Gisela Bengtsson, Chiara Certomà, Susan Clayton, Göran Collste, Ashlee Cunsolo Willox, Oisín Deery, Göran Duus-Otterström, Carmel Finley, Carl-Henric Grenholm, Gösta Grönroos, Alexander Guerrero, Hille Haker, Clive Hamilton, Paul Harris, Bernard Harrison, Rebekah Humphreys, Thomas Kazen, Elaine Kelly, Damien Keown, Yehuda Klein, Tom Koch, Aaron Maltais, Thomas Mautner, Anders Melin, Theresa Morris, David Morrow, John Nolt, Anders Nordgren, Michael Northcott, Carlos Patarroyo, Anthony Raymond, Dominic Roser, Ruth Sandberg, Jens Schlieter, Sandra Shapsay, Fernando Suarez, Gotlind Ulshöfer, Peter Vallentyne, and Jörgen Ödalen.

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From the Editors

Mit der dritten Ausgabe von *De Ethica* komplettieren wir den ersten Band und das erste Jahr der Zeitschrift. Als wir mit der Arbeit begannen, sahen wir voraus, dass diese neue Zeitschrift sich in drei Phasen entwickeln würde. Zunächst muss eine bloße Idee zur ersten Ausgabe werden. Dies war ein Prozess, der einige Anstrengungen erforderte, und eine Erfahrung, die unser Team zusammenschweißte. Wir haben während dieses Prozesses viel dazugelernt und unsere redaktionelle Arbeit aufeinander abgestimmt. Linköping University Electronic Press, unser Verlag, war uns in dieser Zeit eine große Stütze. Zusammen mit dem großen Erfahrungsschatz unserer Chefredakteurin Brenda Almond und der finanziellen Unterstützung, die wir von der Schwedischen Wissenschaftsstiftung (*Vetenskapsrådet*) erhielten, erlaubte uns dies, die erwähnte erste Phase erfolgreich und ohne größere Probleme zu bestreiten.

Eine zweite Phase für eine neue wissenschaftliche Zeitschrift besteht darin, sich durch ihre Beiträge zu etablieren und sich einen Ruf als Publikation mit Zukunft zu erarbeiten. Mit drei Ausgaben im Jahr 2014 sind wir auf dem Weg, durch regelmäßige Ausgaben Verlässlichkeit zu beweisen. *De Ethica* befindet sich aber nach wie vor, so wie es auch zu erwarten war, in dieser zweiten Phase.

In den nächsten Jahren hoffen wir, die dritte Phase wissenschaftlichen Publizierens zu erreichen. In dieser Phase ist die Zeitschrift ein etabliertes wissenschaftliches Organ mit gut funktionierenden redaktionellen Routinen und einem stetigen Zustrom von qualitativ hochwertigen Einsendungen. Die Herausforderung in dieser Phase besteht darin, die Reputation der Zeitschrift zu bestätigen und weiter zu verbessern. In Anbetracht des scharfen Konkurrenzkampfes zwischen wissenschaftlichen Zeitschriften handelt es sich dabei ohne Frage um eine gewaltige Herausforderung, die viel Arbeit erfordern wird – und vielleicht sogar Glück. Doch das ist unser Ziel: als wissenschaftliche Zeitschrift für unsere Qualität bekannt werden, sowohl was die Inhalte, wie auch was die redaktionelle Arbeit angeht. Aber wir wollen *De Ethica* nicht nur als wissenschaftliche Publikation etablieren, wir wollen auch eine Zeitschrift für Societas Ethica aufbauen. Und das ist vielleicht die schwerste und die wichtigste Aufgabe – *De Ethica* ist die Schöpfung der Societas und wird eng mit ihr verbunden bleiben. Auch wenn *De Ethica* eine breite wissenschaftliche Zielgruppe ansprechen will, so soll die Zeitschrift doch auch die Werte und die Vielfalt der Societas widerspiegeln, und sie soll eine attraktive Publikationsoption für die wissenschaftliche Arbeit ihrer Mitglieder werden. In den folgenden Jahren hoffen wir, *De Ethica* nicht nur zu einer anspruchsvollen wissenschaftlichen Publikation zu entwickeln, sondern zur anspruchsvollen Zeitschrift der Societas.

In der letzten Ausgabe des Jahres 2014 präsentieren wir drei Beiträge, die alle Themen behandeln, die nicht nur für Akademikerinnen und Akademiker, sondern für die Allgemeinheit von Interesse sind. Der erste Beitrag von William Simkulet befasst sich mit Problemen des freien Willens und moralischer Verantwortung. Simkulet argumentiert, dass die Begriffe des freien Willens und der moralischen Verantwortung nicht zu trennen sind von unserer Selbsterfahrung als freie und verantwortliche Handelnde. Wenn das zutrifft, so Simkulet, dann weist dies die Inkohärenz der Theorien des deterministischen Kompatibilismus auf.

Der zweite Artikel, verfasst von Norbert Campagna, untersucht das dringende ethische Problem der Klimamigration im Licht der staatlichen Schutzpflichten. Campagna vertritt ein Menschenrecht, nicht migrieren zu müssen und argumentiert, dass der Schutz dieses Rechts impliziert, dass Staaten eine prima facie Pflicht haben, auf ihrem Territorium Aktivitäten zu unterbinden, die Menschen zur Auswanderung zwingen können.

Der dritte Artikel diskutiert Bioethik und Umweltethik, und im speziellen die Relation von technologischem Enhancement am Menschen und Nachhaltigkeit. Joan McGregor verbindet diese beiden Themen und zeigt auf, dass viele Enhancement-Szenarien am Menschen nicht mit Prinzipien der Nachhaltigkeit und des Respekts für kommende Generationen vereinbar sind.

De Ethica und ihre Redakteurinnen und Redakteure möchten den Anlass unseres ersten kompletten Bandes auch dazu nutzen, denjenigen zu danken, die ihre Dienste als Gutachterinnen und Gutachter zur Verfügung gestellt haben. Durch ihre aufschlussreichen und konstruktiven Kommentare haben sie zur Qualität unserer Beiträge nicht unwesentlich beigetragen. Wir möchten unseren Dank aussprechen an David Alm, Ben Almassi, John Baird Callicott, Edward Beach, Gisela Bengtsson, Chiara Certomà, Susan Clayton, Göran Collste, Ashlee Cunsolo Willox, Oisín Deery, Göran Duus-Otterström, Carmel Finley, Carl-Henric Grenholm, Gösta Grönroos, Alexander Guerrero, Hille Haker, Clive Hamilton, Paul Harris, Bernard Harrison, Rebekah Humphreys, Thomas Kazen, Elaine Kelly, Damien Keown, Yehuda Klein, Tom Koch, Aaron Maltais, Thomas Mautner, Anders Melin, Theresa Morris, David Morrow, John Nolt, Anders Nordgren, Michael Northcott, Carlos Patarroyo, Anthony Raymond, Dominic Roser, Ruth Sandberg, Jens Schlieter, Sandra Shapsay, Fernando Suarez, Gotlind Ulshöfer, Peter Vallentyne und Jörgen Ödalen.

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Shaky Ground

William Simkulet

The debate surrounding free will and moral responsibility is one of the most intransigent debates in contemporary philosophy - but it does not have to be. At its heart, the free will debate is a metaethical debate - a debate about the meaning of certain moral terms - free will, moral responsibility, blameworthiness, praiseworthiness. Compatibilists argue that these concepts are compatible with wholly deterministic world, while incompatibilists argue that these concepts require indeterminism, or multiple possible futures. However, compatibilists and incompatibilists do not disagree on everything - both parties agree that free will and moral responsibility require control - the kind of control that we believe we have over the majority of our everyday actions. Over the course of any given day each of us makes countless choices, and in most situations as we make these choices we cannot help but believe that we are in control of them - that our actions are free and we are morally responsible for them. Here I argue that our concepts of free will and moral responsibility are inexorably tied to this experience of apparent liberty.

Introduction

Susan opens her refrigerator looking for a midnight snack and spots a batch of Christmas cookies that her sister, Mary, had cooked the day before explicitly exclusively for their Christmas party the following day. Susan likes cookies. It occurs to her that she can do one of two things - either take a cookie, or not take a cookie.

Over the course of any given day each of us are confronted with countless situations like the one described above - situations in which it appears to us as if we have multiple possible options and that we are free to choose amongst them. The vast majority of choices we make are such that - at least as we make them - we cannot help but believe that our choices are entirely up to us, that we are the determining factor between two or more possible series of events, that we could choose to initiate any of these series of events, and that we can choose to act for reasons - or without regard to reasons at all. To choose in this manner is to act *freely*, or to exercise one's *free will*. Furthermore, we cannot help but believe that we are *truly morally responsible* for these choices (such that it would be appropriate to praise or blame us for these actions) because we believe that we are the authors of these choices.

One of the most seemingly intractable debates in philosophy - the free will debate - is a *metaethical* debate, or a debate about the meaning of moral terms - in this case *free will* and *moral responsibility*.[1] A satisfactory metaethical theory is a theory that defines terms in a manner consistent with how we actually use them, and it is in situations like that described above in which we are likely to describe ourselves as exercising our *free will* and being *morally responsible* as a result.

The major point of contention in the free will debate is about whether or not our concepts of free will and moral responsibility are compatible with the theory of *universal causal determinism*, where universal causal determinism is the theory that the actual past, coupled with the laws of nature, determine the future. If determinism is true, at any given time there is only one possible future - the actual future. *Compatibilists* contend that free will and moral responsibility are compatible with universal causal determinism, while *incompatibilists* contend that free will and moral responsibility are not.[2] Both sides

[1] It is important to distinguish between an agent *being* morally responsible from our being morally justified in *judging* an agent to be morally responsible. It is generally accepted that one's moral responsibility for their actions depends in no small part on the intentions and beliefs one had when acting. Indeed, we're very likely to revise our judgments of moral responsibility when we learn more about the agent's beliefs, intentions, or ability to do otherwise. For example, see William Simkulet, 'On Moral Enhancement', *American Journal of Bioethics Neuroscience* 3:4 (2012), pp. 17-18, and 'In Control', *Philosophical Inquires* 2:1 (2014), pp. 59-75. The metaethical inquiry in this paper will focus on moral responsibility, and not judgments of moral responsibility.

[2] *Semicompatibilists,* like John Martin Fischer, contend that while moral responsibility is compatible with determinism, free will is not. See John Martin Fischer, 'Responsibility and Control', *Journal of Philosophy* 79 (1982), pp. 24-40; John Martin Fischer, 'As Go the Frankfurt Examples, so Goes Deontic Morality', *Journal of Ethics* 4 (2000), pp. 361-363; John Martin Fischer, 'The Importance of Frankfurt-Style Argument', *Philosophical Quarterly* 57 (2007a), pp. 464-471; John Martin Fischer, Robert Kane, Derk Pereboom, and Manuel Vargas, *Four Views on Free Will* (Walden, MA: Blackwell Publishing, 2007); John Martin Fischer, 'The Frankfurt Cases: The Moral of the Stories', *Philosophical Review* 119 (2010), pp. 315-336. However, insofar as most of us would likely revise our judgments of moral responsibility when we discover an agent lacks free will, this view is substantially at odds with how we actually use moral terminology (see Simkulet 'On Moral Enhancement' and 'In Control'). *Revisionsists* argue that we ought to revise our concepts of free will and moral responsibility, usually so that they fit in with our now, largely deterministic scientific view of the world. See Vargas 2007. Because this paper is interested in metaethics, revisionism is outside the scope of this paper. For compatibilist theories, see Daniel Dennett, *Elbow Room: The Varieties of Free Will Worth Wanting* (Cambridge, Mass: MIT Press, 1984); Harry G. Frankfurt, 'Alternate Possibilities and Moral Responsibility', *Journal of Philosophy* 66:23 (1969), pp. 829-839; Harry G. Frankfurt, 'Freedom of the Will and the Concept of a Person', *Journal of Philosophy* 68 (1971), pp. 5-20; Harry G. Frankfurt, 'Some Thoughts Concerning PAP', in *Moral Responsibility and Alternative Possibilities Essays on the Importance of Alternative Possibilities*, edited by David Widerker and Michael McKenna (Aldershot: Ashgate, [2003] 2006), pp. 339-345; David Hume, *A Treatise of Human Nature*, edited by L. A. Selby-Bigge, 2nd edition, revised by P. H. Nidditch (Oxford: Clarendon Press, [1739-1740] 1975); David Hume, *Enquiry Concerning the Principles of Morals*, edited by L. A. Selby-Bigge, 3rd edition, revised by P. H. Nidditch (Oxford: Clarendon Press, [1751] 1975); David Hunt, 'Moral Responsibility and Unavoidable Action', *Philosophical Studies* 97 (2000), pp. 195–227; David Hunt, 'Moral Responsibility and Buffered Alternatives', *Midwest Studies in Philosophy* 29 (2005), pp. 126–145; Peter F. Strawson, 'Freedom and Resentment', *Proceedings of the British Academy* XLVIII (1962), pp. 1-25.

in the debate generally accept that moral responsibility requires control of some sort, and this control comes with free will.

Libertarianism is, roughly, the theory that the experience of apparent liberty described in the case above are largely veridical and capture a relevant, indeterministic feature of our decision making process. According to the libertarian, if Susan has free will, then she doesn't just believe that she can either take the cookie or not take the cookie, but that she actually can chose to do either. Libertarians are incompatibilists who believe that (i) incompatibilism is true - free will and moral responsibility are incompatible with determinism, (ii) determinism is false, and (iii) free will and moral responsibility are possible in the actual world.[3]

Many philosophers believe that experiences like Susan's are illusory, 'false sensation[s]' of liberty,[4] requiring an 'obscure and panicky metaphysics'.[5] Most compatibilists believe determinism is true at the actual world, and these compatibilists are committed to the proposition that Susan is, in an important sense, wrong - there are no alternate possible futures and her choice about whether or not she would take the cookie was determined long before she was even born.[6] None of us, they contend, can do anything but what we actually do.

The primary way in which analytic philosophers endeavor to discover truth about concepts like free will and moral responsibility is to see how we employ these concepts in actual and hypothetical situations.[7] This method assumes that the ways in

[3] Libertarians can be contrasted with *hard incompatibilists* who believe that free will and moral responsibility are incompatible with either determinism or indeterminism, and *hard determinists*, incompatibilists who believe determinism is true and thus free will and moral responsibility are not possible in the actual world. For an example of hard incompatibilism, see Galen Strawson, 'The Impossibility of Moral Responsibility', *Philosophical Studies* 75 (1994), pp. 5-24; Derk Pereboom, 'Defending Hard Incompatibilism', *Midwest Studies* 29 (2005), pp. 228-247; Derk Pereboom, 'Defending Hard Incompatibilism Again', in *Essays on Free Will and Moral Responsibility*, edited by Nick Trakakis and Daniel Cohen (Newcastle-upon-Tyne: Cambridge Scholars Press, 2008), pp. 1-33.

[4] Hume, *A Treatise of Human Nature*, 2.3.2.2.

[5] P. F. Strawson, p. 25.

[6] Some incompatibilist philosophers, such as Robert Kane, also reject the idea that our experiences accurately reflect the world. For Kane, free will and moral responsibility require only small, momentary bouts of indeterminism. See Robert Kane, *Free Will and Values* (Albany: State University of New York Press, 1985); Robert Kane, 'Two Kinds of Incompatibilism', *Philosophy and Phenomenological Research* 50 (1989), pp. 219-254; Robert Kane, 'Free Will: The Elusive Ideal', *Philosophical Studies* 75 (1994), pp. 25-60; Robert Kane, 'Freedom, Responsibility, and Will-Setting', *Philosophical Topics* 24:2 (1996), pp. 67-90; Robert Kane, *The Significance of Free Will* (New York: Oxford University Press, 1996); Robert Kane, 'On Free Will, Responsibility and Indeterminism', *Philosophical Explorations* 2 (1999), pp. 105-121; Robert Kane, 'Agency, Responsibility, and Indeterminism: Reflections on Libertarian Theories of Free Will', in *Freedom and Determinism*, edited by Joseph Keim Campbell, Michael O'Rourke, and David Shier (Cambridge, Mass.: MIT Press, 2004), pp. 70–88; Fischer, Kane, Pereboom, and Vargas.

[7] Recently experimental philosophers have attempted to gather experimental data about how we utilize our concepts of free will and moral responsibility. In Eddy Nahmias, Stephen Morris, Thomas Nadelhoffer, and Jason Turner, 'Surveying Freedom Folk Intuitions about Free Will and Moral Responsibility', *Philosophical Psychology* 18:5 (2005), pp. 561-584, Nahmias *et al.* purport to show that we have compatibilist intuitions. In Shawn Nichols and Joshua Knobe, 'Moral Responsibility and Determinism: The Cognitive Science of Folk Intuitions', *Nous* 41 (2007), pp. 663-685, Nichols and Knobe offer a definitive criticism of Nahmias *et al.*, showing that we have largely

which we come to form our beliefs and practices are veridical and capture relevant truths about the world. Compatibilists and incompatibilists alike employ this method to construct and defend theories of free will and moral responsibility; each argues that their theories are as consistent, or more consistent, with our application of the concepts than competing theories.

In this article I argue that compatibilists cannot justify employing this method to defend their account of free will and moral responsibility. I argue that our concepts of free will and moral responsibility are founded on our experiences of apparent liberty - experiences like Susan's apparent ability to choose either to take a cookie or refrain from taking a cookie - and thus are inexorably tied to these experiences. These experiences are the experiences in which compatibilist and incompatibilist alike are inclined to say that the agent is both free and morally responsible in the relevant senses. If one argues, as the compatibilist does, that these experiences fail to accurately describe the world, then one has no reason to think that the concepts of free will and moral responsibility are applicable to the actual world. Instead, the would-be compatibilist has every reason to believe that our application of these concepts is erroneous, merely the result illusory experiences.[8]

This article is divided into two sections. In the first, I argue that our beliefs about free will and moral responsibility, and the applications of these concepts, are based upon our near constant stream of experiences of apparent liberty. As a libertarian, I believe that these experiences accurately reflect the world, however defending the veridicality of these experiences is outside the scope of this work. In the second, I consider several compatibilist responses, and argue that they fail to justify their appeal to our beliefs and practices about free will and moral responsibility.

Free Will as Apparent Liberty

In 'The Impossibility of Moral Responsibility', Galen Strawson describes an example of the kind of experience that he contends serves as the foundation for our beliefs about moral responsibility:

> Suppose you set off for a shop on the evening of a national holiday, intending to buy a cake with your last ten pound note. On the steps of the shop someone is shaking an Oxfam tin. You stop, and it seems completely clear to you that is it entirely up to you what you do next. That is, it seems to you that you are truly, radically free to choose, in such a way that you will be ultimately morally responsible for whatever you choose. Even if you believe that determinism is true, and that you will in five minutes time be able to look back and say what you did was determined, this does not seem to undermine your sense of the

incompatibilist intuitions, and that our compatibilist intuitions are restricted to emotional judgments of moral responsibility of the kind that are subject to revision.

[8] By the same reasoning, incompatibilist theories that deny our experiences of libertarian free will accurately reflect the world cannot reasonably appeal to our moral beliefs derived from those experiences. See Kane, *Free Will and Values*; Kane, 'Two Kinds of Incompatibilism'; Kane, 'Free Will: The Elusive Ideal'; Kane, 'Freedom, Responsibility, and Will-Setting'; Kane, *The Significance of Free Will*; Kane, 'On Free Will, Responsibility and Indeterminism'; Kane, 'Agency, Responsibility, and Indeterminism'; Fischer, Kane, Pereboom, and Vargas.

> absoluteness and inescapability of your freedom, and of your moral responsibility for your choice.[9]

Strawson's description of this kind of experience is especially compelling in that he focuses on our inability to interpret such experiences otherwise. This is to say that the beliefs we form on the basis of this experience are not merely misapprehensions of the experience that go away once we come to accept that universal causal determinism (or something sufficiently like it) is true. Rather it seems as though in that moment even the most stalwart and resolute of determinists cannot interpret their experiences as anything but experiences of libertarian free will.

Strawson's example focuses on a situation where we have a clear choice between two mutually exclusive options, and reasons in favor of either option. However, it seems uncontroversially true that we experience this kind of freedom in regards to the vast majority of our choices, from deciding what clothes we wear, to the food we eat, to the route we take to work. These experiences of apparent liberty are almost unrelenting, and in each situation where we have such experiences, we believe we act freely. Furthermore, the concept of free will seems to be inexorably tied to these experiences; in hypothetical scenarios where we stipulate that, contrary to our understanding of events, our experiences fail to accurately represent our decision making process, we tend to retract our belief that we had free will. Consider the following case:

> Black wants Jones to steal Ann's car, and implants him with a device. If Jones is going to choose to steal the car on his own, the device does nothing. Otherwise, the device does two things – it (a) causally determines Jones to steal Ann's car, and (b) forces Jones to have the false experience of believing he can do otherwise despite being wholly causally determined to steal the car by the device. As it so happens, the device activates, Jones steals the car and experiences a false sensation of liberty.[10]

Although Jones cannot help but believe that he exercises his free will when he choses to steal Ann's car, it is uncontroversially true that he did not do so. If Jones were to learn of the device, he'd abandon his belief that he had exercised his free will.

Just as the concept of free will is tied to our experiences of liberty, so too is the concept of moral responsibility. Galen Strawson says our experiences of liberty 'are the experiential rock on which the belief in true moral responsibility is founded'.[11] Strawson

[9] G. Strawson, p. 10.

[10] This case is a variant on Harry Frankfurt's infamous purported counterexample to the principle of alternate possibilities (Frankfurt, 'Alternate Possibilities and Moral Responsibility'), based on a version constructed by Alfred Mele and David Robb ('Rescuing Frankfurt-Style Cases', *Philosophical Review* 107:1 (1998), pp. 97-112). Frankfurt admits that in his famous case, Jones has alternate possibilities (Frankfurt, 'Some Thoughts Concerning PAP'); he can either do as Black secretly wants him to of his own accord, or be wholly causally determined to do so by Black's device. This is to say that he can do one of two things. Frankfurt's contention is that the alternate possibilities play no role in determining Jones' responsibility… but none the less, they appear to be a necessary, but not sufficient condition for us to find Jones morally responsible.

[11] G. Strawson, p. 11.

claims that to be *truly morally responsible* for something is for it to '*make sense*' for one to be rewarded in heaven or punished in hell for that something; he goes on to say

> The stress on the words 'makes sense' is important, for one certainly does not have to believe in any version of the story of heaven and hell in order to understand the notion of true moral responsibility that it is being used to illustrate.[12]

That so many people do believe in this story, or at least find it compelling, does, however, count as evidence that Strawson's account of *true moral responsibility* is an accurate theory of the concept of moral responsibility.

The reason why it makes sense to hold us morally responsible for our actions, if our experiences are correct, is because we believe that we are non-arbitrary, competent, indeterministic sources of our actions. This is to say that we believe we can act for reasons and that we have a reasonable idea about the consequences of our actions, all else being equal. Thus, all else being equal, the bad consequences of someone's actions are evidence that person intended to bring about those bad consequences. To freely intend to bring about bad consequences when you can easily avoid doing so is inherently blameworthy, and thus it makes sense to hold such a person morally blameworthy for her actions. Similarly, anyone who freely intends to bring about good consequences is *prima facie* praiseworthy.

This brings us to what Strawson calls 'The basic argument'; Strawson believes this argument precludes the possibility that anyone could ever be truly morally responsible for their actions. The argument goes like this:

(1) Nothing can be a *causa sui* – nothing can be a cause of itself.
(2) In order to be truly morally responsible for one's actions one would have to be *causa sui*, at least in certain crucial mental respects.
(3) Therefore nothing can be truly morally responsible.[13]

The problem with the basic argument is that our experience of liberty is not one of being a *causa sui*; we do not believe that we cause ourselves.[14] Rather we believe that we are the authors and causes of our choices. The objection here is that nothing can cause itself to act; but true moral responsibility doesn't require this either. Our choices are often explicitly prompted by external circumstances, but we believe other experiences might just as well constitute inexplicit prompts. In Strawson's case, our (mechanistic) perception of the shaking of the Oxfam tin prompts us to act; however if our experience is to be believed, this prompt in no way determines what our choice will be.

The *prompt thesis* maintains that although moral agents are the enduring, non-arbitrary causes of their actions, every choice they make needs to be prompted by some experiential stimulus, internal or external. Stimuli may range from brain events to

[12] G. Strawson, pp. 9-10.
[13] *Ibid.*, p. 5.
[14] My criticism here of the basic argument is not meant to be a defense of libertarianism - such a defense is outside the scope of this paper; rather it is a clarification of the kind of causation required for our experiences of apparent liberty to be true. Free will doesn't require us to be our own grandparents, it requires us to be free to respond to moral challenges.

thoughts to sensory experiences to even our experience of time passing. Stimuli can be deterministic or indeterministic in nature.

One objection to the prompt thesis is that it is *prima facie* inconsistent with some of our experiences that we describe as spontaneous. However, upon reflection, this doesn't seem to be the case. For example, upon hearing the shaking of the Oxfam tin, we are presented by our understanding of the situation with certain obvious options – we can (a) buy a cake, or (b) give our money to the Oxfam tin shaker. However, all else being equal, we are equally free to (c) buy cake for the less fortunate, (d) go home, and so on. These options are less obvious, less attentive to the scenario, but no less within our power – or at least so we believe. Our choices are, at least in part, limited by our imagination in the same way they are limited by other circumstances. We cannot freely choose to do things that we don't think of, or that we don't think are possible. A prisoner cannot freely choose to turn into a bird and fly out the window, although he may be free to try.

Much as we believe we are free to go 'off script' in the Oxfam tin scenario, we may be equally free to act spontaneously towards any number of mundane prompts, such as our experience of the passage of time. Unlike the Oxfam tin scenario, our experience of the passage of time doesn't demand a response of any particular kind, and as such any response to this prompt will feel spontaneous and unplanned despite being prompted.

David Hume famously criticized libertarian free will as being undesirable because it is a liberty of indifference, where our actions are made arbitrarily, by chance.[15] But this is not how we experience our choices; we feel as if we can act for reasons without being casually determined by them. After choosing to donate his last ten pound note to the Oxfam tin shaker, a determinist may be able to look back and convince herself that she was causally determined to do so by her empathy; but had she chosen, instead, to buy the cake, she may just as easily convince herself that she was causally determined to do so by her desire to eat cake. Intuitively, though, we find both reasons *prima facie* compelling and cannot help but believe – at the time – that we could act on either set of reasons, and that to do so wouldn't be arbitrary. This is not an experience of indifference.

Critics of libertarianism, justifiably, argue that such an experience is incoherent. For any choice, either we do so for reasons or we do not. If we do not, they are arbitrary. We claim that we experience the capacity to choose between sets of reasons non-arbitrarily, but to do so would mean that we have a separate reason to justify our choosing one set of reasons over the other. Choosing to act on that reason over competing reasons, too, is either arbitrary, or it is not. Either (a) it's reasons all the way down, such that we get an infinite regress, (b) there is one or more self-justifying reasons somewhere down the line, which suggests determinism, or (c) at some point our choice between reasons is arbitrary. This is a rather convincing argument against the veridicality of our experience of liberty, but all the worse for any compatibilist hoping to save the concepts of free will and moral responsibility from the chopping block.

As a libertarian I feel obliged to offer a quick response to this criticism. Much as we draw a distinction between deterministic events and indeterministic events, we draw a distinction between arbitrary events and non-arbitrary events. Almost everyone believes that deterministic events can be either arbitrary or non-arbitrary, yet the criticism above turns on indeterministic events being solely arbitrary. But almost everyone

[15] Hume, *A Treatise of Human Nature*; Hume, *Enquiry Concerning the Principles of Morals*.

believes this is false; we all seem to accept the possibility of non-arbitrary indeterministic events. For example, if there was indeterminacy in the buckshot pattern from a shotgun, the pattern wouldn't necessarily be arbitrary – if the shotgun was successfully aimed at an intruder, much of the buckshot would find its way to the intruder, and there's a rather specific reason it would do so – because the gun was aimed at him. Thus, the above criticism is less convincing than we might initially think; our experience of apparently non-arbitrary indeterminism is not incoherent.[16]

In the same way that we experience apparent liberty, sometimes we also experience apparent determinism, in which our actions are uncontroversially said to be wholly causally determined by instinct or character. In the case of instinct, it doesn't make sense to hold us morally responsible since it is outside of our control. Similarly, when the character that determined us to act is the result of factors outside of our control, we don't think we're responsible or our actions; although we may still lament our having such a bad character, and attempt to change it. Indeed, we believe that we have some control over our character traits, such that we can train ourselves to either gain or lose certain traits. If these beliefs are correct, it makes sense to hold us *derivatively morally responsible* for actions causally determined by freely acquired character traits because we are truly morally responsible for the free actions which brought about those traits and had a good idea what kind of actions those traits would bring about. To be derivatively morally responsible for x is to be truly morally responsible for y, where y plays a relevant causal role in bringing about x. According to this framework, we are truly morally responsible for our free actions, and derivatively morally responsible for the consequences that follow.

In this section I've argued that our experience of apparent liberty leads us to believe that we have non-arbitrary, competent, undetermined control over many of our actions such that it makes sense to hold us truly morally responsible for them – to punish us for the harms we freely bring about, and praise us for the good we freely bring about because it's ultimately up to us what we do when we act freely.

Note that the concept of true moral responsibility discussed here is distinct from many other common concepts that may play a similar role in our lives; concepts like legal responsibility, causal responsibility, and what I call *practical responsibility*, the feature of it being practical to treat something in a similar way to how one might treat something that is morally responsible. Consider the following case:

> Mary has contracted a highly contagious and dangerous disease through no fault of her own. Fortunately for her, she is merely a carrier and shows no symptoms, although she can still spread it to others.

I think most of us would agree that Mary has a strong moral obligation not to infect others, and to quarantine herself if possible. However, it is practical to not give her the option – after all, she might choose otherwise. Suppose the Center for Disease Control were to swoop in, abduct Mary, and quarantine her until a cure could be discovered. It is practical to treat Mary in this way, but it is uncontroversially true that she doesn't deserve it. This practicality, or practical responsibility, bears little similarity to the other

[16] It's not clear that this kind of non-arbitrary indeterminism would be sufficient for the purposes of true moral responsibility; but this question is outside the scope of this work.

concepts because it's responsibility in name only – Mary is, by stipulation, neither morally or legally responsible for her coming down with the disease, and she may not even be causally responsible in any relevant sense either. Yet it makes sense to treat Mary in a similar way to how we would treat Mary if she was a morally or legally responsible for her being a threat to others - doing so saves lives.

If our concepts of free will and moral responsibility are inexorably tied to instances where we experience apparent liberty, and compatibilists reject the veridicality of these experiences, then our employment of the concepts in actual and hypothetical situations cannot be used as evidence towards the truth of compatibilist theories of the concepts. Indeed, it's not at all clear what could count as support for a compatibilist theory of these concepts. Fortunately, determinists are already willing to reject the veridicality of a large number of our experience and the beliefs founded on them, so abandoning the concepts of free will and moral responsibility as equally illusory probably wouldn't force them to embrace a far more radical skepticism - but it would cause them to abandon compatibilism.

Compatibilist Avenues of Response

Thus far, I've argued that the concepts of free will and moral responsibility are inexorably tied to experiences that determinists believe fail to accurately reflect the world, and that to abandon the veridicality of our experiences undermines the only reason we have to assume the veridicality of our application of these concepts. I contend this leaves the compatibilist with no means to justify a compatibilist theory of either free will or moral responsibility, and thus compatibilism is incoherent.

In this section I discuss four potential responses to my argument: (1) the other methods approach, (2) an appeal to those lacking experiences of apparent liberty, (3) the alternate foundation approach, and (4) an appeal to counterexamples.

(1) Other Methods

Although the primary way analytic philosophers investigate concepts is to analyze the employment of the concepts, it is not the only way. For example, they might look to a theory's consistency with other beliefs, or its ontological simplicity as evidence of its accuracy. A diligent compatibilist, then, might deny the veridicality of our application of the concepts of free will and moral responsibility, and yet still have a means to construct a robust theory about those concepts.

Of the four responses I look at, I believe this is the most compelling. Unfortunately, it is uncontroversially true that most of the leading compatibilists simply fail to pursue this method, and instead argue from the position that their account of the concepts is consistent with our commonsense application of the concepts.[17] It's also not

[17] See Fischer, 'Responsibility and Control'; Fischer, 'As Go the Frankfurt Examples, so Goes Deontic Morality'; Fischer, 'The Importance of Frankfurt-Style Argument'; Fischer, 'The Frankfurt Cases'; Frankfurt, 'Alternate Possibilities and Moral Responsibility'; Frankfurt, 'Freedom of the Will and the Concept of a Person'; Frankfurt, 'Some Thoughts Concerning PAP'; Hunt, 'Moral Responsibility and Unavoidable Action'; Hunt, 'Moral Responsibility and Buffered Alternatives'; P. F. Strawson.

clear that the remaining methods open to the compatibilist are sufficient to produce a robust theory of these concepts. Even assuming a robust theory of either free will or moral responsibility could be constructed in this way, these compatibilists still have to argue that their theory is preferable to that of libertarian free will and true moral responsibility.

Incompatibilists who believe in the truth of universal causal determinism can argue that because our experience of free will is illusory, our application of these concepts is irrelevant; for them our application of these concepts to the actual world is consistent, but founded on a mistake that their compatibilist rivals already accept. Furthermore, if Galen Strawson is right, they're both better off being *hard incompatibilists*, believing that these concepts are incompatible with the truth of either determinism or indeterminism.

(2) Lack of Experiences of Apparent Liberty

Suppose that some people honestly report that they do not experience a sensation of liberty of the kind Galen Strawson discusses. If this is true, these people's concepts of free will and moral responsibility must be derived from something other than their personal experience of liberty. If their actual and hypothetical employment of the concepts is similar to ours, then compatibilists can argue that our concepts of free will and moral responsibility do not rely upon an experience of liberty, and thus that the primary method is sufficient for testing compatibilist theories of these concepts.

There are a number of problems with this response. First, it's not clear that such people exist. Second, if these people regularly interact with those of us who do have experiences of apparent liberty, it's possible that they get their concepts from us, and thus their concepts can still be based on experiences of apparent liberty. If we find a secluded group of human beings who report not to have the same experience of liberty as we do, and yet still employ concepts that had the same actual and hypothetical application as our concepts of free will and moral responsibility, then we will succeed in showing that these concepts can grounded in something other than our experience of apparent liberty. However, I strongly suspect that if we found such a group, they would lack any concept of free will and moral responsibility; although they might get along just as well by employing adjacent concepts like freedom from coercion and legal responsibility.

(3) Alternate Foundation

Alternatively, compatibilists might get just as far if they can offer an alternate foundation for our beliefs about free will and moral responsibility that is as consistent with our application of the concepts. Such an approach could only be a success if it could ground moral responsibility and free will in something other than our experience of liberty while still keeping these concepts distinct from adjacent concepts.

One of the reasons that our experiences serve as an adequate foundation for our concepts of free will and moral responsibility is that they are nearly inescapable; we almost constantly feel as though we have the authorial control Galen Strawson describes, and we cannot help but feel responsible for our choices in such situations. If compatibilists can find an alternate foundation, ideally it will be as common and inescapable as these experiences are. This is one of the virtues of P. F. Strawson's theory of moral responsibility. P. F. Strawson claimed that rather than people being genuinely

morally responsible for their actions, the practice of holding people moral responsible played a central role in their personal relationships.[18] Because personal relationships play a fairly large role in our lives, they are a good potential foundation for the concept of moral responsibility. On his view, our concept of holding people moral responsibility plays a regulatory role in such relationships, and can be derived from truths about such relationships. Setting aside the view's *prima facie* inconsistencies with our linguistic practices, it's not at all clear P. F. Strawson's account of moral responsibility is anything but a kind of practical responsibility concerned with relationship maintenance. This is inherently inconsistent with our intuitions and hypothetical employment of the concept, such as the ones consistent with the story of heaven and hell and our intuitions about Mary. This inconsistency shouldn't be surprising - practical responsibility is nothing like moral responsibility. While holding people morally responsible is often practical, it is not necessarily so, and *vice versa*.

The central problem with this approach is that a satisfactory foundation should be both immediately apparent and capture those aspects of our actual and hypothetical practices concerning free will and moral responsibility that distinguish them from adjacent concepts. Thus far compatibilist attempts to offer an alternate foundation have met with much the same problem as P. F. Strawson's attempt, they fail to accurately explain our application of the concepts without appealing to what they believe is a false experience of liberty that would undermine the value of the compatibilist's theory's consistency with the application of the concepts.

(4) Appeal to Counterexamples

The compatibilist has one final option, I think, to defend her appeal to our application of the concepts of free will and moral responsibility. Unable to construct a theory of these concepts by way of other means, unable to find examples of people who apply the concepts in the same way as we do despite not having any contact with an experience of apparent liberty, and unable to offer an alternative foundation for our application of the concepts, the compatibilist might be able to construct a counterexample to my claim that our concepts are founded on our experience of apparent liberty.[19] If the compatibilist can do so, they can argue that our experience of apparent liberty is no better a foundation for our concepts than alternative compatibilist foundations, and thus the concepts are, once again, up for grabs.

Daniel Dennett cites such an apparent case, the story of Martin Luther who, when pressured to recant his writings, refused and is often quoted as saying that he 'could do no other'.[20] Luther is *prima facie* morally responsible for his actions, but if we take his purported description of events literally, he lacked the experience of feeling as though he could do otherwise.

[18] P. F. Strawson.

[19] Many compatibilists already construct cases where someone is said to be *prima facie* morally responsible despite being wholly causally determined or lacking alternate possibilities. For instance, see Frankfurt, 'Alternate Possibilities and Moral Responsibility'; Frankfurt, 'Some Thoughts Concerning PAP'; Fischer, 'Responsibility and Control'; Fischer, 'As Go the Frankfurt Examples, so Goes Deontic Morality'; Fischer, 'The Frankfurt Cases'; and Hunt, 'Moral Responsibility and Unavoidable Action'; Hunt, 'Moral Responsibility and Buffered Alternatives'.

[20] Martin Luther, quoted in Dennett, p. 133.

I cannot purport to know how Luther felt; but I do know that we often make similar statements about our own actions, despite their being accompanied by an experience of apparent liberty. For example, when the right thing to do is obvious, it makes sense to say 'I wouldn't do otherwise' or 'I couldn't do otherwise.' Although the latter might be, strictly speaking, false, both serve to convey my dedication to doing what's right and to reassure my audience that they don't need to worry about me doing the wrong thing.[21]

However, if we take this quote literally, it would be quite odd to say that he was, in fact, praiseworthy for his actions. Even though he did the *prima facie* right thing, it's not at all clear that it would make sense to reward Luther with an eternity in heaven for something that was outside of his control. Of course, independent of questions of Luther's moral responsibility, it is practical to hold him up as an example of how one should behave when confronted with adversity - and this is true whether his actions were his own, or caused by divine intervention.

I discuss this approach last because I believe it is the least attractive option the compatibilist has. I've argued that our concepts of free will and moral responsibility are inexorably tied to our experiences of apparent liberty; but if determinist compatibilists are in doubt about this claim, they cannot deny that these same experiences generate beliefs about our capacities that, *qua* determinists, they believe to be false. The determinist accepts that there can be massive error not only in our experiences, but in our belief sets as well. If our beliefs are so untrustworthy with regard to our capabilities, it would be quite odd if compatibilists were willing to balance the acceptability of pursuing compatibilism on the veridicality of rare experiences like that of Martin Luther's.

Summary

Compatibilists believe that free will and moral responsibility are compatible with our being wholly causally determined to act by circumstances outside of our control. Invariably, compatibilists appeal to their theories' compatibility with our application of these concepts to actual and hypothetical situations. However it seems as though our experience of liberty is inescapable, such that even the most dedicated determinist cannot help but feel as if they are capable of acting other than they actually do, and being truly morally responsible such that it is appropriate to hold them morally responsible for their actions even when there is no practical benefit to doing so. I contend that this experience of apparent liberty is the foundation of our concepts of free will and moral responsibility. Both compatibilist and incompatibilist alike are apt to say that when we experience such apparent liberty, we are likely both acting free and morally responsible for our actions. If this is the case, when compatibilists reject the veridicality of such experiences, they undermine the only reason they have to believe the concepts of free will and moral

[21] Frankfurt discusses how we sometimes say that we can't do otherwise when we're faced with a coercive threat (Frankfurt, 'Alternate Possibilities and Moral Responsibility'). Frankfurt believes that genuine coercion requires one to lack freedom of the will and be forced to act by the coercive threat, but coerced agents rarely report a genuine lack of the experience of liberty; rather the threat is so coercive that they have *prima facie* strong reasons to act as the coercer intends them to.

responsibility are applicable to the actual world. As a result, determinist compatibilist theories of free will and moral responsibility are incoherent.

William Simkulet, University of Wisconsin Marshfield/Wood County
simkuletwm@yahoo.com

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Climate Migration and the State's Duty to Protect

Norbert Campagna

Climate change will have as a consequence a more or less important rise of global sea levels. For some countries, this is likely to mean their total disappearance, if no measures are taken. Some of these measures might be too costly for the country to finance and its population will have no other choice but to migrate to another country. This contribution considers this kind of problem from the point of view of political philosophy. My arguments will rest on two fundamental assumptions. On the one hand, we find the state's duty to protect its citizens against internal and external dangers, and on the other, the individual's right not to have to migrate. Each state must protect its own citizens against foreign dangers. It will also be assumed that no state has a right to endanger the very existence of another state. The contribution aims to show some of the major consequences of these assumptions for the ethical problem of migration due to the consequences of human-induced climate change.

Introduction

When climate change is being discussed, whether in the academic world or in the society at large, one often tends to focus on what should be done in order to prevent the risk of an all too massive climate change in the decennia to come.[1] So-called climate skeptics either deny the very existence of a permanent climate change or, if they admit its existence, tend to think that it is not provoked by human activities or their consequences, but that it should be seen as a purely natural phenomenon. Against this position, the great majority of scientists working in the field of climatology or of related disciplines maintains that the global rise of temperatures we are experiencing since at least the beginning of the 20th century is due to the presence of so-called greenhouse gases in our atmosphere and that the massive presence of such gases is a direct outflow of human activities. If the industrial revolution had not happened or if its pace had been much

[1] There has been some debate concerning the question of how to call the phenomenon (see Stephen Gardiner, 'Ethics and Global Climate Change', in *Climate Ethics. Essential Readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 3-35, at p. 4). I will generally use the term 'climate change', as it leaves open the possibility of a global cooling, induced by phenomena that first provoked by a global warming. As many scientists point out, the climate is dependent on many factors.

slower than it has been, we would not be faced with the risk of a massive climate change. For these scientists – when they take a stand as citizens and draw normative conclusions from the results of their scientific observations – these activities should be globally reduced so as to reduce the emission of greenhouse gases, thus preventing a further rise of global temperatures with probably dramatic consequences in a not too distant future.[2] With what has already been emitted, the future is not bright, but it is still time to prevent its becoming totally obscure.

While these discussions go on and while politicians, scientists, philosophers, theologians, etc. insist on the necessity to do something in favor of a sustainable future, i.e. of a future in which human activities do not risk to make the planet earth a place where living will no more be worthwhile, at least for many people, millions of people have to leave their usual places of residence because of the consequences of climate change.[3]

Thus, while discussions concerning the impact of climate change on future generations go on, a relatively important number of people belonging to the present generation are already confronted with the problem. They are not the virtual victims of alternative scenarios for the future, but many of them are the actual victims of actions done in the past or they will be such victims in the years or decennia to come.[4] Their fate foreshadows what is going to happen to a still more important number of people if no concrete and energetic measures are taken in the years to come. Had the problem of climate change due to human activities already been put on the agenda a hundred years ago and had the necessary measures been taken at that time, the number of climate migrants would probably have been much smaller.

If there is no denying the fact that we should discuss the question of what to do to reduce the global rising of temperatures in the decennia to come in order to provide a sustainable future for our great-grandchildren, this discussion should not prevent us from confronting the problem of those people who are already the victims of climatic phenomena or who are very likely to become such victims in a near future. Climate migration is a fact, and any society pretending to be a decent or even only an ethically responsible society must ask itself how it must respond to the situation of climate

[2] A global reduction does not necessarily mean that everybody should reduce his or her emissions. Some argue that developed countries should reduce their emissions massively, so as to allow developing nations to augment their emissions, this augmentation being seen as necessary to allow development in those nations. On this question, see for example Henry Shue, 'Subsistence Emissions and Luxury Emissions', in *Climate ethics. Essential readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 200-214.

[3] According to whether one adopts an alarmist stance or not, the number of climate migrants will vary. Moreover, it is not always easy to make out whether climate is the only, the main or merely a secondary or supplementary cause for migration. Sometimes, climate may also only be an indirect cause, as when climate changes induce a rising of sea levels, which lead to a submersion of arable land, which leads to fewer agricultural machines being needed, which may lead sellers of such machines to close their firms and to emigrate. On this question, see for example Norman Myers, 'Environmental Refugees', *Population and Environment* 19 (1997), pp. 167-182, and, for a criticism of the methodological shortcomings of the 'alarmists', Jane McAdam, *Climate Change, Forced Migration, and International Law* (Oxford: Oxford University Press, 2013), p. 25f.

[4] The so-called identity-problem (see Derek Parfit, *Reasons and persons* (Oxford: Oxford University Press, 1985)) is irrelevant in their case. If Kiribati, Vanuatu or the Maldives are to be submerged by 2050, we already know who the persons who will have to migrate by 2050.

migrants. Can something be done to prevent migration though the sea levels will rise to a point where, if nothing is done, migration will be the only option left? And if nothing can be done, which country should accept the migrants on its territory?

If we consider the geographical origin of climate migrants, we can see that most of them – 98 percent in fact – are from underdeveloped or developing countries, whereas only two percent live in developed countries. Developing countries thus pay the highest toll. As long as climatic events are simply seen as natural events, i.e. as events which happen without any human intervention, we may feel sorry for the victims, maybe even think that we, who have the means to help at no excessive cost to ourselves, stand under a duty of beneficence to help them in some way, but we will probably not admit that we stand under a duty of strict justice to help them. Things are a bit more complicated if we suppose that though nobody is responsible for bringing about the climatic events, these events could nevertheless have been prevented or can still be prevented, for example by geoengineering.[5] Helping climate migrants as climate migrants is not the same as helping people not to become climate migrants. We must thus distinguish between at least the following cases:

(1) Climate migration due to purely natural phenomena nobody could prevent.
(2) Climate migration due to purely natural phenomena that could have been prevented.
(3) Climate migration due to human-induced natural phenomena.

In this contribution, I want to concentrate on people who have become or will become climate migrants because of the consequences of climatic events provoked by human activities, and I will concentrate on those populations who are the victims of the impact of climate change on the rising of waters, and even more especially on the rising of global sea levels[6].

Climate migration may be temporary or permanent, and if temporary, it can be recurrent or non recurrent. If the global sea level were to rise by two meters, not a few islands in the Pacific as well as many coastal regions all over the world would become permanently inhabitable.[7] And if in some regions extraordinary climatic events – say

[5] For a skeptical approach to geoengineering, see Stephen Gardiner, 'Is "Arming the Future" with Geoengineering Really the Lesser Evil? Some Doubts about the Ethics of Intentionally Manipulating the Climate System', in *Climate Ethics. Essential Readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 284-312.
[6] According to a recent study, global sea levels didn't change between the lifetime of Jesus Christ and 1900, but since the beginning of the 20th century it is 'rising at an increased rate' and 'it is projected to rise at an even greater rate in this century' (Nathan Bindoff, Jürgen Willebrand, Vincenzo Artale, *et al*., 'Observations: Oceanic Climate Change and Sea Level', in *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by Susan Solomon, Dahe Qin, Martin Manning, *et al*. (Cambridge and New York: Cambridge University Press, 2007), pp. 385-432, at p. 409).
[7] To quote Shue: 'Some island nations in the South Pacific are already well into the process of being submerged by rising sea levels' (Henry Shue, 'Deadly Delays, Saving Opportunities', in *Climate Ethics. Essential Readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 146-162, at p. 147. In the case of these nations, the most pressing question is not so much: 'What should be done to reverse the process?' – though this

hurricanes – were to become ordinary, bringing about massive inundations every two years[8], these regions would also become practically inhabitable, or the cost of continuing to live there would be such that, if a rational person had the choice to go and live somewhere else, he or she would do so. You may accept the risk of having to rebuild your house every 50 years or so, but not of having to do so every two years.

My arguments rest on the presupposition that at least some of the climatic events that place people before the option – not to say: the necessity – of having to migrate are human-induced events. I will also presuppose that the activities mainly responsible[9] for these climatic events have been and are still going on in a limited number of countries, first and foremost the United States of America,[10] China, most EU countries, Japan or Russia – the list is of course not complete. As it is virtually impossible to say which activities produce exactly which climatic events and hence which activities are responsible for which consequences, I will work with the presupposition that the group of countries most contributing to the emission of gases provoking climatic changes should be held collectively responsible and that it is also these countries which have primarily a duty to help.[11]

As I will not make a case for criminal responsibility but only for what might be called civil liability, the presupposition of collective responsibility should not provoke too many horrified reactions.[12] I will also only focus on the *negative* consequences of climate change. According to some scenarios, global climate change could lead to a displacement of rainfalls due to monsoon and through this displacement many tracts of desert land could become fertile and thus allow people to live there permanently. If this

question remains of course important –, but 'What should be done to help those who are going to be the victims of the process?'.

[8] According to a recent estimation, 1,2 percent of the world population will be exposed to yearly inundations by 2100 against only 0,1 percent today (*Science et Vie*, no. 1152, September 2013, p. 35).

[9] Greenhouse gases are of course produced in *all* countries, but there is a huge difference between *per capita* emissions if one compares industrialized nations with other nations.

[10] The US contributes approximately one quarter of all greenhouse gas emissions (see Gardiner, 'Ethics and Global Climate Change', p. 21). At the risk of being cynical: When future generations will learn that Barack Obama intended to bomb Syria for its use of chemical weapons against its civil population, they will probably think that they would have had a very good reason to bomb the United States of Barack Obama for its emission of greenhouse gases. Without downplaying the deaths that occurred and still occur in Syria, we must be honest enough to acknowledge that the consequences of our economic activities cause and will many more deaths.

[11] This does not mean that they are responsible as a collective entity, but that each individual member of the group is to bear a part of the responsibility. Since the beginning of the century, the topic of an ethical framework to deal with climate-induced migration begins to be discussed in the scientific literature, though contributions are still rather scarce (see for example Derek Bell, 'Environmental Refugees: What Rights? Which Duties?', *Res Publica* 10 (2004), pp. 135-152; Mathias Risse, 'The Right to Relocation: Disappearing Island Nations and Common Ownership of the Earth', *Ethics and International Affairs* 23:3 (2009), pp. 281-300; Cara Nine, 'Ecological Refugees, States Borders, and the Lockean Proviso', *Journal of Applied Philosophy* 27:4 (2010), pp. 359-375; Sujatha Byravan and Chella Rajan Sudhir, 'The Ethical Implications of Sea-level Rise due to Climate Change', *Ethics and International Affairs* 24:3 (2011), pp. 239-260;Avner de Shalit, 'Climate Change Refugees, Compensation and Rectification', *Monist* 94 (2011), pp. 310-328).

[12] On this point, see Henry Shue, 'Global Environment and International Equality', in *Climate Ethics. Essential Readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 101-111, at p. 104.

were the case, many migrant populations of the desert would have the possibility to settle down, so that in their case climate change would contribute to the reduction of migration. If new territories were thus to become inhabitable, they should be reserved for climate migrants, even for climate migrants from other countries.

Climate Migrants and Other migrants

Though the problem discussed in this contribution falls under the general topic of migration,[13] climate migration must be distinguished from other types of migration, as for example political or economical migration, to name only the two most frequent types.[14] A political migrant, in a broad sense of the word,[15] is a person who has to leave her country because the government oppresses her on account either of her political or religious ideas, or because of her ethnic origin or sexual orientation – to name only the most important factors –, or because the government does nothing and maybe even does not want to do anything to protect the person against social oppression exercised on account of one of these factors.

An economical migrant is a person who leaves his or her country because of the hope to find better economic conditions – a job, higher wages, etc. – in a foreign country. Economic migration may sometimes be favored by a country that needs workers of a certain type.[16] If economic conditions in a country or region deteriorate because of climatic consequences, economic and climate migration may coincide.

As this last case shows, there is no radical or essential difference between these types of migration. Nevertheless, some lesser and morally relevant differences must be pointed out. One such difference is that political and economical migration is generally only due to internal factors. Usually, the political regime of a country is not imposed by an outside state, and the economic orientation of a country is not dictated by an outside state. I want to stress the '*usually*', as it is undeniable that a political regime, though not imposed by an outside state, may nevertheless be supported by an outside state. The weapons used for oppressing the population may have been sold to the government by an outside state or with its authorization. In such a case, one may wonder whether that

[13]'Migration' is here used as a general term to cover emigration as well as immigration. Basically, emigration is also immigration: you leave one place to enter another place. In common parlance, the notions of emigration and immigration are usually reserved for international migration. Thus, if I were to leave Northern France to settle down in Southern France, I would hardly be called an emigrant or an immigrant. I will not use the term 'refugee', as it is a technical term of international law and gives rise to many problems in the context of climate change (see McAdam, *Climate Change, Forced Migration, and International Law*).

[14] One could also mention nuclear migration, i.e. migration due to massive accidents in nuclear plants. Chernobyl and Fukushima are two examples for this type of migration. Fiscal migration can be seen as a form of economic migration, with the only difference that traditional economic migration mainly concerns the poor, whereas fiscal migration mainly concerns the rich.

[15] I don't want to quarrel with those who think that the term 'political migrant' should only be used for people who have to leave their place of origin because they are threatened in life and limb on account of their strictly political opinions. As I use the term here, it simply denotes oppression by government or by society.

[16] In the 1960s and 1970s for example, Luxembourg induced thousands of Portuguese to immigrate into the Grand-Duchy, as they were needed in the building sector.

state is not also responsible for the migration. And in the economic case, decisions by the International Monetary Fund may contribute to massive waves of emigration from countries that have to structure their economy along the lines imposed by the International Monetary Fund.

But even if we suppose that external factors can also play a substantial role in the cases of political and economic migration, there still exists a difference with regard to the bearer of responsibilities. In the case of political oppression by government A, we can relatively easily identify the country or countries that sold weapons to that government. And in the case of externally induced economical migration, we can also generally determine responsibilities in a fairly easy way. Thus, if the economy of Ghana declines because the country cannot sell its cocoa anymore, this is generally due to the fact that countries needing cocoa to produce chocolate have at their disposal an artificial *ersatz* that is much cheaper. The direct link between the causes and effects can usually be more clearly established than in the case of climate change.

But there is still a more fundamental difference. When a chocolate-producing nation uses artificial cocoa, it creates economical problems in a cocoa-producing nation, yet it does so without destroying the cocoa-plants or the country in which they grow. In the case of climate change, it is different. Suppose that the production of artificial cocoa resulted in a massive emission of greenhouse gases and suppose that due to this emission, climate in Ghana was to change to such a degree that cultivation of cocoa would become impossible in that country. As a result, the economy of Ghana would break down. Though the ultimate consequence is the same, what brought about this consequence is very different. Outdoing a competitor without destroying his instrument of production is not the same as outdoing a competitor and destroying his instrument of production, even where this destruction is not positively willed but only accepted as a consequence.

One could still mention a further difference. The causes of political and economical migration may generally be more easily changed than the causes of climate migration. Though it may be difficult to get rid of a tyrant and though it may be difficult to change economic conditions, the difficulty is in both cases utterly different from that linked to changing the climate. And the same holds true for reverting to previous conditions. Once a coastal region is under water because of the rise of sea levels, it is very difficult, if not nearly impossible, to get rid of the water again. Or imagine a South Pacific island: You can reestablish a democratic government after having gotten rid of the tyrant; you can rebuild an economy which has collapsed; but can you 'desubmerge' it again after it lies under four or five meters of water?

A State's Duty to Protect

I take as a starting point of my argumentation the political notion of a state's duty to protect. Whatever else a state may be there for, it has a general duty to protect its citizens, this protection being the minimal condition that has to be fulfilled for citizens having a duty to obey. There is thus an exchange: obedience in exchange for protection. This vision of the state has its roots in the social contract theory elaborated in the 17th century, notably by Thomas Hobbes in the *Leviathan*. The state's duty to protect is primarily a duty to protect its own citizens against each other. However much civic friendship may be extolled as a virtue, real human beings living in political communities will be prone to

acts of violence and they will thus need protection from that violence. These acts of violence may result from purely criminal motives, but they may also result from ideological motives, and the absolute state, as it was defined by Jean Bodin in France and Thomas Hobbes in England, had to protect its citizens against civil war.

But besides protecting its citizens against each other, the state has also the duty to protect them against foreign aggression. There is first of all the state's duty to protect its citizens against a foreign invasion, especially if the invader is likely to impose another religion or another political system. But there is also the state's duty to protect those of its citizens who happen to be in foreign states, for example because they do commerce with foreign merchants. If you are a citizen of a state, the state has the duty to protect and to help you wherever you are – provided you haven't committed some action depriving you of that protection, as for example a crime.[17]

Has a state also a duty to protect citizens of another state? This seems to be so in the case of ambassadors or legates. These persons act in an official capacity as intermediaries between states. As such, the state that accepts them on its territory for a transaction has also a special duty to protect them. If the government of state A knows that the legates of state B are likely to be lynched by an angry mob if they come for peace transactions, it has to protect them against that mob if it wants peace transactions to take place.

So state A has to protect the citizens of state A against the citizens of state, and state B has to protect the citizens of state A against the citizens of state B if state B has to transact with citizens of state A. But has state A a duty to protect citizens of state B against the government of state B or against citizens of state B?

In the 16th century, Spanish theologians, first among them the Dominican friar Francisco de Vitoria, founder of the School of Salamanca, maintained that though the world was split into nations, nationhood did not cancel or destroy the common tie existing between all human beings.[18] And in virtue of this common human tie, human beings had not only the right, but also the duty to help each other, irrespective of national borders. The paradigm case involved citizens who were persecuted by their own government or whose government did nothing to protect them against persecution. If the persecutions were massive and threatened the very life of the victims,[19] then any nation could intervene to put an end to these persecutions, if necessary by military force. Any state had a duty to protect any large group of human beings against massive persecution. When a state stopped protecting its own citizens or even persecuted them massively, it so to say lost the rights linked to sovereignty. Sovereignty was not the object of an absolute and unconditional right, as it became after the Peace of Westphalia, but it was only conditional – as it is again today.[20]

[17] But even then, your state of origin has the duty to look to it that you will receive a fair trial. This kind of duty is usually fulfilled through diplomatic channels.

[18] See Francisco de Vitoria's *Relectio de Indis* (Madrid: Corpus Hispanorum de Pace, 1967) and *Relectio de iure belli o paz dinámica* (Madrid: Corpus Hispanorum de Pace, 1981) For a recent discussion of Vitoria, see Norbert Campagna, *Francisco de Vitoria. Leben und Werk. Zur Kompetenz der Theologie in politischen und juridischen Fragen* (Münster: LIT-Verlag, 2010).

[19] The paradigm case in the 16th century debates was human sacrifices.

[20] On the question of sovereignty, see Henry Shue, 'Eroding Sovereignty', in *The morality of Nationalism*, edited by Robert McKim and Jeff McMahan (New York, Oxford University Press, 1997), pp. 340-359.

In contemporary political theory, a state failing to fulfill adequately its duty to protect is called a 'failed state'. The public institutions may still exist, but they are inefficient and the real power lies in the hands of political groups fighting against each other for gaining political power – not in order to reestablish protection, but so that the leaders of these groups may enrich themselves.

If the duty to protect has traditionally been understood as the duty to protect against overt acts of violence, one may legitimately ask whether it should be restricted to protection against such acts. If my neighbor can kill me by voluntarily shooting at me, he can also kill me by negligently emitting toxic gases, without any intention do to me any harm and in pursuance of some activity which will bring him some kind of economic benefit. Should the state only protect me against his shooting me or should it also intervene to prevent my being a victim of his polluting activities? As a matter of fact, many states protect their citizens against at least extreme forms of pollution by imposing the use of filters or even by prohibiting the polluting activities. And many states also protect their citizens against some of the consequences of a free-market economy by providing them with financial help in case of unemployment. Imposing an obligatory health insurance can also be seen as a kind of protection. In some of these cases, the duty to protect can also be seen as a duty to help. Thus, though the state cannot guarantee me a new job if I lose my old one, it nevertheless helps me while I have no job.

Given these developments of the duty to protect, we may wonder whether a state has also a duty to protect against some of the consequences of climate change, and more especially against the rise of sea levels. And if it is no more possible to protect a population against the rise of sea levels so that the population will have to migrate, what are the duties of a state with regard to climate migrants? Has state A the duty to protect its own citizens against climate migration, and if it has no possibility to protect them against climate changes as such, does it have a duty to help them face the consequences of having to migrate? Has state A the duty to make sure that no activity going on within the borders of its territory contributes to climate changes very likely to provoke migration of citizens living within the borders of state B? And if it is already too late to prevent the phenomena causing migration, as for example the rising of sea-levels, has state A the duty to help citizens of state B who have no other choice left but to migrate? And if so, how?

A Right Not to Have to Migrate

According to Simon Caney, the human rights discourse, though it should not be the only kind of discourse deployed in the context of a global strategy against climate change and its consequences, should nevertheless occupy a central place in such a strategy. Whatever else climate change may do, it also leads to the violation of some basic human rights. Caney insists on three such rights: the right to life, the right to health and the right to subsistence. In order to make his case as universally acceptable as possible, Caney proposes a very weak reading of these three rights and conceives them only as negative rights.

Though he concentrates on these three rights, Caney nevertheless suggests that other rights might also have a role to play. One of these is a right to be protected against forced migration: 'Furthermore, one might argue that there is a human right not to be

forcibly evicted (HR 5) and that climate change violates this because people from coastal settlements and small island states will be forced to leave'.[21]

In the traditional sense, forced eviction happens when the government displaces people. We will here concentrate on forced eviction of great numbers of people. This may happen for example when the state intends to construct a barrage where people used to live. In such cases, thousands of people are asked to leave their houses and to settle somewhere else. But forced eviction may also happen when a certain population – for example an ethnic minority – is declared *populatio non grata* on a given national territory. The crucial difference between the two cases is that in the first case, the evicted population is allowed to resettle somewhere else within the national territory, whereas in the second case, the evicted population has to find a state that accepts it on its national territory.

In modern liberal democracies, forced evictions, especially of large numbers of persons, is very rare. It may happen with individuals who have no valid authorization to stay on the national territory. It sometimes happens that such people are forcibly evicted from the national territory by being put on a plane and flown back to their country of origin. It also sometimes happens that some persons are evicted from their houses because a motorway or a railway line will pass exactly where they happen to live. In a case like that, the persons concerned will be financially compensated for their loss and they will also generally be helped by government.

In the case evoked by Caney and which is also the topic of this contribution, the eviction is forced not because the government forces people to leave their place of residence *manu militari*, but because the people have apparently no other choice left but to leave their place of residence. When your house stands completely under water, you won't wait until military forces come and chase you from there. You just leave by yourself because it is so to say physically impossible for you to continue living where you used to live. Though migration is in a certain sense voluntary – you are moved by a decision of your own will and not by soldiers or the police carrying you away –, it is nevertheless not voluntary in the sense of free, as freedom, if it means anything, means at least that you can choose between several options.

At this stage, someone might wonder why forced eviction is a bad thing, which one must be protected against. Or to put it in more neutral terms:[22] Why is it bad to have to go and live somewhere else? After all, many people all over the world freely and voluntarily leave their usual places of residence to live somewhere else. Or to put it still differently: What values does the right not be forcibly evicted protect?

In the case of forcible eviction *manu militari*, the answer is rather simple, as such an eviction violates the right not be subjected to violence. The answer is more complicated when we turn to the case of the persons who will have to leave coastal regions submerged by rising sea levels. They are not subjected to any kind of physical violence. So what is wrong with their having to go and live somewhere else?

Many people, so it can be argued, are sentimentally attached to their place of residence, especially if they have lived there for a long time. Having to leave a place

[21] Simon Caney, 'Climate Change, Human Rights, and Moral Thresholds', in *Climate Ethics. Essential Readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 163-177, at p. 169.

[22] 'Forced eviction' contains already an implicit moral condemnation.

where your parents and grandparents already lived, where you spent most of your life and where you 'feel good' is not always an easy matter. They also have adapted to that place and they have also adapted that place to their needs and interests, at least insofar as such adaptations are possible. By having to leave their usual place of residence, they will have to readapt to a new place, which will take time and energy. Then, even if we assume that it may be easy to leave a place of residence, it may not be so easy to find a new place of residence which has more or less the same advantages as the old one. Thus, having to leave a very fertile coastal region with a moderate climate, to resettle in a sterile mountain region with severe winters is not really attractive. Another point to be mentioned is the risk that one will not be accepted by the population of the new place of residence, especially if that population suffers economic distress or if there are important cultural differences between the migrants and the autochthones. This may create social tensions or even conflicts.

Besides all these problems, there is the more fundamental problem of finding a place to go to. In the case where internal migration is an option, this problem is not too acute, as there is at present no country that is so densely populated that it would be physically impossible to resettle the population of its coastal regions. The problem becomes acute, however, once we envisage the disappearance of a whole state, as it will be the case with some island states in the Pacific Ocean. Once sea levels will have risen above a certain threshold, their inhabitants will have no other choice left but to migrate to another country if they want to survive. If it would be possible to prevent these islands being submerged by stopping greenhouse gases at once, then we would at least have a *prima facie* duty to do so. Yet it is to be expected that even if we stopped all such emissions *hic et nunc,* the sea level would still rise to such a height that at least some of these islands would be completely submerged. So the question is: Which countries have a duty to help the populations of countries very likely to exist no more in a not too distant future?[23]

The Duty to Protect Against Forced Migration

As a principle of international public law, the first addressee of the duty to protect citizens of state A is the government of state A.[24] Let us suppose that state A is Kiribati, a

[23] Is the right in question a collective or an individual right? Personally, I do not think that there are – in a strong ontological sense – collective rights. If anything, there is an individual right to be part of a collective that is a locus of identification for the individual. Or to put it differently: rights of collectives are derivative rights and collectives have a value only insofar as individuals belonging to them value them. So if individual Kiribatians value their collective life, their relocation in another country should, as far as possible, give them the possibility to continue to share their common life as Kiribatians. There is no doubt that this might lead to serious problems which, due to lack of space, can only be mentioned here: Should Kiribatians continue to have their own Parliament? Should they be given a territory with no native inhabitants of the country? And if they are given a territory where there are native inhabitants, should these be treated as foreigners? To solve these problems or even to come nearer to a solution it would be necessary to rethink the notion of citizenship, distinguishing clearly between a purely political republican notion of citizenship and a cultural notion.

[24] It is the so-called principle of subsidiarity.

conglomerate of South Pacific islands covering about 900 square kilometers. In a few decennia, these islands are likely to be submerged, so that about one hundred thousand persons – its actual population – will have to find a new state of residence. If a massive reduction of greenhouse gas emissions could still prevent the submersion of Kiribati, the government of Kiribati would have the duty to make itself heard on the international scene in order to convince other governments to take the necessary measures for such a reduction. Kiribati would certainly find allies, as it is not the only state to risk partial or even total submersion. Yet it is doubtful whether even with these allies, Kiribati would be able, just with arguments,[25] to bring about a reduction of greenhouse gas emissions.

One of the major characteristics of a state is its national territory, and whatever else a state must do, it must protect the integrity of its national territory, as this territory is the place where its citizens can live. This protection means, on the one hand, that the government may not cede a part of the national territory and, on the other hand, that it must protect its territory against other states wanting to annex a portion of it. But it should also mean that the government must take the necessary steps to prevent the territory to disappear. Preventing this disappearance is preventing the disappearance of a state.

If Kiribati is submerged, it will cease to exist as a state. But Kiribati has, like any other state, a right to exist. And all states have the duty to respect Kiribati's existence, which means among other things that no state should tolerate on its territory activities likely to have the disappearance of Kiribati as a consequence. Or should they tolerate such activities, they have duties of compensation.

Is there a possibility for Kiribati to continue to exist despite rising sea levels? Suppose that we know that whatever we do, sea levels will rise to a level that will place Kiribati below sea level. Is it possible to have Kiribati continuing in existence below sea level? Let us imagine that dams with a height of about ten meters are placed all around the islands composing Kiribati and let us suppose that these dams are efficient to protect the islands. If this is the only possibility for Kiribati to continue to exist as an independent state, the government of Kiribati has a *prima facie* duty to have such dams built.[26] To take another example: If a much frequented road is threatened by falling stones, public authorities must protect the users of the road against these falling stones, for example by putting nets or whatever else prevents the stones from killing automobile drivers.

It is important to note that it is only a *prima facie* duty. For it might well be that the inhabitants of Kiribati would prefer to go and live somewhere else rather than live in what might be seen as a kind of prison-island. If in a referendum a majority of the inhabitants of Kiribati reject the project of building dams, the government does no more have the duty to build dams.

But suppose that the inhabitants want dams to be built. Who is to bear the probably astronomical costs? It is very unlikely that the budget of Kiribati will suffice. In that case, it might be just to turn towards those nations that have until now most benefited from greenhouse gas emissions. As was said before, their contribution is not to be seen as a punishment, but as a measure of compensation. Some countries have hugely benefited from greenhouse gas emissions whereas other countries will have to bear the

[25] And states like Kiribati generally have nothing else but arguments to offer.

[26] Such dams exist in the Netherlands. Shue imagines a 'Great Sea Wall of China' (Shue, 'Subsistence Emissions and Luxury Emissions', p. 205).

negative consequences of these emissions, consequences that, for some countries, amount to their disappearance as independent nations. Fairness requires that the latter countries should at least be helped in preventing the worst consequences and that they be helped by the countries benefited, because by allowed the massive emission of greenhouse gases on their territory they were able to get wealthy. In order to finance a project of dam building, the countries hosting the entities mainly responsible for greenhouse gas emissions could tax those emissions more heavily than they do today.[27]

In this context one could also mention a fundamental duty of the community of states to protect the independence of one of their members. This duty should not be restricted to the protection of independence when a country has been invaded – like Kuwait by Iraq –, but it should also at least be extended to cases where the very existence of a state is in danger because of human activities.

But suppose that for technical reasons the dams cannot be built.[28] In that case, there is no other option but to emigrate. If there were still habitable territories belonging to nobody, the population could go to these places and colonize them. But such territories don't exist anymore – at least not on our planet. Hence if the population of Kiribati has to emigrate, at least one state must accept that population on its territory. Is any state more obligated than another to accept the emigrants on its territory?

Here again it seems as if fairness required looking first to those countries that are responsible for the climate change. If we are in a situation where population of country A must emigrate and where it can emigrate either to country B – which doesn't bear any causal responsibility with regard to the necessity to emigrate – or to country C – which bears a causal responsibility –, *tertium non datur* and *ceteris paribus*, there is one morally relevant reason more for saying that C should accept the migrants on its territory.

But what if the country mainly responsible cannot bear the burden of massive immigration? Or what if the cultural differences between the migrants and the autochthones is so important that an integration seems impossible or at least extremely difficult, creating the risk of social tensions and conflicts? In such a case, a third country might decide, or might even be morally obligated, to accept the migrants on its territory, but it would be justified in asking financial support from the country responsible for the consequences which led to migration.

[27] At this point, it is important to distinguish two principles, *viz*. the beneficiary pays and the polluter pays principle. Often, though not always, the polluter also benefits, at least economically, from the polluting activity. He can, of course, also become himself a victim of his polluting activity. In this latter case, he will have to make a cost-benefit analysis in order to see whether the benefits are worth the cost. It may also happen that a third party who is not polluting benefits from the polluting activity. This benefit can be the result of an agreement between the third party and the polluting party – with the latter getting some benefit in exchange – or it may just happen without anybody having consciously willed it. In this last case, only the polluter should pay. In the former case, i.e. where there is an agreement, the polluter and the benefiter should both pay. Costs related to pollution should be internalized and benefits related to consciously willed and accepted pollution should be – at least partly – externalized.

[28] One could also suppose that the inhabitants of Kiribati do not want to live imprisoned by high dams. Though it that case they would have an alternative option to migration and the question would be whether this alternative option to migration is so bad, that it couldn't just be imposed on Kiribatians.

If we suppose that any nation has a right to exist as an independent nation, we might even come to the conclusion that the fact of having contributed, even if unknowingly, to the disappearance of the national territory of a nation involves the duty of giving that nation a part of one's own territory so as to allow it to continue to exist as an independent nation. In our concrete example this would mean that the United States should part with some 900 square kilometers of their national territory so as to allow the inhabitants of Kiribati to live there as an independent nation once their own national territory has been submerged. And these 900 square kilometers should be such as to allow at least a minimally decent life.

The Strength of Nations

Suppose that on one of the many islands of Kiribati a very huge industrial plant emits greenhouse gases in massive quantities. And suppose further that American scientists analyzing the effects of these emissions come to the conclusion that if nothing is done to stop them, the whole West Coast of the United States will be submerged, provoking the migration of millions of people and economic damages likely to amount to thousands of billions of dollars. What would the United States do?[29]

They would probably begin by using the diplomatic way and ask the government of Kiribati to close the plant. If it should refuse, the government would probably be promised billions of dollars to compensate the financial losses from a closing. If it should refuse this many as well, maybe because it does not want to be 'bought', the United States government would exercise economic pressure upon Kiribati. But suppose that Kiribati remains insensitive to all promises and pressures. And suppose also that the UN Security Council can't agree on any resolution, Russia blocking any initiative by using its veto-right.[30] It is to be expected that in such a situation the US will launch several missiles and destroy the plant on Kiribati, with Kiribatians having nothing else but their eyes to weep.

Now reverse the scenario. Due to the pollution of industrial plants in the US, Kiribati is threatened in its territorial existence. What means of pressure does Kiribati have? Whereas the American government can protect its citizens by using military means, this is not the case for the government of Kiribati. And what holds true for military means also holds true for economic threats and promises. The government of Kiribati just has no efficient means to act on the US government. Kiribatians may appeal to public opinion in the US and worldwide, but it is hardly to be expected that this will change the politics of the US government *vis-à-vis* its national industry.

From the standpoint of international law, a military intervention by Kiribati against the United States would have a higher degree of justification than an intervention of the United States against Kiribati – in the hypothetical case of the massively polluting

[29] This scenario is hypothetical. It is intended to discuss, in the context of just war theories, the threat that human-induced climate change may pose to the existence of states.

[30] The introduction of the Security Council into discussion of this hypothetical event is here intended to draw attention to a distinction between two approaches to migration due to climate change. Whereas some conceptualize it as a global security problem, others conceptualize it as an individual rights problem. On this issue see, for example, Gregory White, *Climate Change and Migration* (Oxford: Oxford University Press, 2011).

plant on an island of Kiribati. Whereas the United States will only be deprived of a part of their territory by submersion, so as to allow the victims to move to other places within the United States, this is not the case for the inhabitants of Kiribati.[31] There is a huge and morally relevant difference between a mere violation of territorial integrity and a violation of a state's territorial existence. And as long as there will be a huge difference between the power of nuisance of Kiribati and the United States, there is hardly any hope that Kiribati will survive.[32]

Conclusion

In this contribution, I have tried to show that climate change already produces and will continue to produce – even if we immediately stopped greenhouse gas emission – climate migrants. Some of these climate migrants will have the opportunity to resettle within their own countries, whereas others will have no other choice but to migrate to another country.

I showed that we have good reasons to accept the idea of a human right not to have to migrate. If this is the case, then this right should be protected. At the very least, every country has a *prima facie* duty of not allowing on its territory activities that, through their consequences, will force people to migrate another country. If such activities have already taken place in the past and if the consequences cannot be stopped, then the countries that authorized the activities have a duty to help those populations who are placed in front of the option of migration. Wherever possible, these populations should be presented with a set of measures that will allow them to remain where they used to live, and these measures should be financed by the countries which have most benefited from the aforementioned activities.

Where internal migration is possible, the government of the country should be financially and logistically helped to make a decent internal migration possible. The financial help should again come from the nations that bear the causal responsibility for the migration. If internal migration is not possible and where protective measures aren't possible either, external migration is the next option. And here again, the countries

[31] It is not only, as Singer notes (Peter Singer, 'One Atmosphere', in *Climate Ethics. Essential Readings*, edited by Stephen Gardiner, Simon Caney, Dale Jamieson, and Henry Shue (Oxford: Oxford University Press, 2010), pp. 181-199, at p. 183), richer nations that can more easily remove people from flooded areas. One must also consider the dimension and the topography. Luxembourg is a rich nation, but if 2586 square kilometers of its national territory were to be submerged, there would be no placed left to resettle the country's population. But if 2586 square kilometers of Nigeria were to be submerged, the victims could be removed to some other place within Nigeria.

[32] These reflections show that ethics cannot be separated from politics. Byravan and Rajan have made an important contribution to discussion of this issue, and I agree with much of what they say (Sujatha Byravan and Chella Rajan Sudhir, 'The Ethical Implications of Sea-level Rise due to Climate Change', *Ethics and International Affairs* 24:3 (2011), pp. 239-260). Yet to my mind they do not insist enough on what we might call the 'ethical implications of power asymmetry'. If small and imperiled island states were militarily much more powerful than the states allowing activities dangerous for them, they would be in a position to influence these states to cease allowing those activities. I do not question Byravan's and Rajan's conclusions, but put these conclusions in a larger perspective.

bearing causal responsibility should provide help, either by providing land and all the necessary infrastructures for the migrants or by helping another country to do so if migration to that country is better for the migrants.

Norbert Campagna, University of Luxembourg
norbertcampagna@hotmail.com

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Enhancing Humans and Sustainability: The Reunion of Bioethics and Environmental Ethics

Joan McGregor

Emerging technologies are hyped as 'transformative' by their proponents, who prophesize that these new technologies will significantly and beneficially change our world. Concerns have been raised about the potential environmental impacts of these technologies. Emerging technologies and their implications on humans, society, and the environment challenge our understanding of our responsibilities to the environment and future generations. Utilizing Van Potter's sense of bioethics that meant the normative study of humanity's place in the biosphere, I attempt to reintegrate bioethics and environmental ethics, to address questions about human well-being in the future, its dependence on complex environmental systems, and the impact of emerging technologies particularly enhancement technologies upon it. Ultimately, I argue that the future envisioned by proponents of human enhancement technologies is not consistent with our responsibilities to future generations which including leaving certain amounts of natural capital, including human ones.

How many goodly creatures are there here! How beauteous mankind is! O brave new world! That has such people in it!

Shakespeare, *The Tempest*, Act V, Scene I

If science cannot lead us to wisdom as well as power, it is surely no science at all.

Aldo Leopold, *Ecology and Politics*

Emerging technologies, viz., nanotechnology, biotechnology, information technology, and cognitive science are hyped as 'transformative' by their proponents who prophesize that these new technologies will significantly and beneficially change our world – in medicine, communication, transportation, agriculture, energy, and even in the very

makeup of human beings.[1] Like technologies of the past (for example, the internal combustion engine or nuclear power) these new technologies will provide fundamental and pervasive changes to society and the environment. Concerns have been raised about the potential environmental impacts of these technologies, for example, the 'grey goo' of nanotechnology ('out-of-control nanotech replicators wipe out all life on Earth') the unintended proliferation of the 'terminator gene', (gene technology developed (and subsequently abandoned) for genetically modified plants so that the second generation seeds would be sterile), or the detrimental impacts on future generations from the transformation of humans, through genetic engineering and other hardwired changes to human beings. The implications of emerging technologies on humans, society, and the environment challenge our understanding of our responsibilities to the environment and future generations.

The two broad areas of research, emerging technologies and sustainability, although not wholly indifferent to one another's perspectives (for example, some emerging technologies are thought to address sustainability challenges) are largely apathetic to the implications raised by the central concerns of the other. The areas of ethics that addresses the problems raised by emerging technologies and sustainability, bioethics and environmental ethics, though their genesis were one and the same, have drifted far apart. Contemporary discussions of bioethical topics, like the ethical dimensions of emerging technologies, rarely address the environmental issues and vice versa environmental ethicists concerns seem not to overlap with topics standardly covered in bioethics, such as emerging technologies.[2] Van Potter who coined the term 'bioethics' in the 1970s meant the subject matter for the field to be both the stuff of contemporary bioethics and environmental ethics.[3] In other words, he meant bioethics to apply to the integration of what we currently think of as bioethics and environmental ethics. For Potter, bioethics was the consideration of the values constitutive of our relationship with nature necessary to ensure our continued well-being into the future. Potter, inspired by Aldo Leopold's concern about our treatment of the land and the survivability of humans, forged a field of study that would consider humanity's place in the biosphere. He was explicitly concerned to address emerging technologies' role in that survivability. Potter's insight about the unity of the problems we face about acceptable human survival on the planet was correct. In this paper, I will attempt to reintegrate these fields addressing questions about human well-being in the future, its dependence on complex environmental systems, and the impact of emerging technologies particularly enhancement technologies upon it.

[1] For instance, see National Science and Technology Council, 'Nanotechnology: Shaping the World Atom by Atom', Washington, DC. (1999); Mihail C. Roco and William S. Bainbridge, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science (*Washington DC: National Science Foundation, 2002); Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: Penguin, 2006).

[2] See, for instance, Peter Whitehouse, 'The Rebirth of Bioethics: Extending the Original Formulations of Van Rensselaer Potter', *American Journal of Bioethics* 3:4 (2003) pp. 26-31, and James Dwyer, 'How to Connect Bioethics and Environmental Ethics: Health, Sustainability, and Justice', *Bioethics* 23:9 (2009), pp. 497–502.

[3] Van Potter, *Bioethics: Bridge to the Future* (New Jersey: Prentice-Hall, 1971); Van Potter, *Global Bioethics: Building on the Leopold Legacy* (Lansing: Michigan State University Press, 1988).

Proponents of emerging technologies, including ones that envision the technologies converging on enhancements for human beings, have not adequately addressed the implications of those technologies for sustainability (not the term that Potter used but certainly what he was referring to when he did address 'acceptable human survival'[4]). Although there is no consensus on the meaning of 'sustainability' there is some general agreement that its focus is on our responsibility to the future. Sustainability requires human survival beyond the current generation; hence it requires that our scope of moral consideration include the effects of our actions and practices on the future of humans. Institutionally, politically, and economically, however, we (the 'we' I am thinking about is Western society) have in policy deliberations been notoriously negligent reflecting on and accounting for the effects on future generations and the planet. Though there are individuals and some states, notably the EU, who are concerned with the environment, encouraging the use of frameworks such as the 'precautionary principle' a cautionary approach to the uncertainty of risks to the environment from new technologies, they have failed to garner widespread support for restraints on technological advancements by all the major industrial nations. And those discussions are usually framed in terms of more proximate risks rather than our responsibility to the future. Current deliberation on climate change legislation and the recalcitrance of governments such as the US to implement restrictions on greenhouse gases illustrates the distance we have to go to integrate widening the scope of our moral consideration to include future generations.

What I want to explore is whether the vision of the future coming from proponents of the transformative effects of emerging technologies on human beings, the range of human enhancements, is in conflict with the demands of sustainability. The proponents of human enhancements provide a vision of the future, one where humans are not plagued by disease or disability, they have technologically enhanced capacities, including merging with machines, and they have radically extended lives. Since the transhumanist's philosophy has this articulated vision of the future, focusing on the implications of those envisioned technological changes provides a felicitous vantage point from which to begin to assess the sustainability of all emerging technologies (although that analysis is beyond the scope of this paper). Coming full circle to the roots of bioethics, I too will draw wisdom about human survival or sustainability in the biosphere from Aldo Leopold. Though he didn't use the term 'sustainability' as it is used today, it is clear that his moral vision of 'land health' and our responsibilities growing out of the land ethic are ones that can ground a rich notion of sustainability.[5] That moral vision was one that requires that we change our normative framework of our relationship to the land. Implementing Leopold's proposed change in our relationship with the land would have significant and positive implications for future generations. The question is whether the implications of emerging technologies and the prescriptive implications of Leopold's moral vision are consistent with one another.

[4] Van Potter, *Global Bioethics*, p. 51.

[5] Leopold did, however, critique the Progressive Era notion of 'sustainability yield'; see Julianne Newton and Eric Freyfogle, 'Sustainability: a Dissent', *Conservation Biology* 19 (2005), pp. 23-32.

Emerging Technologies Converging on Making 'Better' Humans

Proponents of transhumanism argue that the effects of emerging technologies on humans will make us 'better' humans, ultimately transforming us into a posthuman species. The idea of transcending the human condition has a history, Frederick Nietzsche's Zarathustra contends: 'Man is something that shall be overcome...What is ape to man? A laughing stock or painful embarrassment. And man shall be that to overman: a laughingstock or painful embarrassment'.[6] For Nietzsche, overcoming the human condition is done through the will, his so-called 'will to power' – a kind of self-actualization, 'a mastery of the will'. The current transhumanists' methods of transformation (often they call it 'evolution'), on the other hand, are technological. Modern transhumanists (leading academic proponents include: Max More, James Hughes, and Nick Bostrom) concur with Nietzsche's assessment of the condition of man as something that we should overcome because it limits us. More says: 'Our creativity struggles within the boundaries of human intelligence, imagination, and concentration.'[7] He also sees transhumanism, as Nietzsche did, as breaking from among other things the oppression of religion. 'The concept of God has been oppressive: a being more powerful than we, but made in the image of our crude self-conceptions. Our own process of endless progression into higher forms should and will replace this religious idea.'[8] When asked why not accept our human limitation, More says:

> The Enlightenment and the humanist perspective assure us that progress is possible, that life is a grand adventure, and that reason, science, and good will can free us from the confines of the past...Aging and death victimize all humans…to Extropians and other transhumanists, the technological conquest of aging and death stands out as the most urgent, vital, worthy quest of our time. Some fear that life will lose its meaningfulness without the traditional stages of life produced by aging and the certainty of death … Meaningfulness and value require the continual making and breaking of forms, a process of self-overcoming, not a stagnant state.[9]

Transhumanists suppose that beyond triumphing over disease and death we can make our lives better by making ourselves more physically attractive, sexually potent, athletically superior, more intelligent, and less controlled by our emotions.

Proponents of transhumanism argue that the 'technologies that push the boundaries of humanness, can radically improve our quality of life, and that we have a *fundamental right* to use them to control our minds and bodies.'[10] They envision that we will be genetically engineered cyborgs with nano-implants and neuroenhancers. Ray Kurzweil argues that we are heading for what he calls the 'Singularity' where humans emerge with machines and our intelligence, since it will be mostly not biological, will be tremendously more powerful than it is today.[11] For Kurzweil, this is the beginning of a

[6] Frederick Nietzsche, *Thus Spoke Zarathustra* (London: Penguin Classics, [1883-1891] 1961), §§ 3–4.
[7] Max More, 'On Becoming Posthuman', available at http://eserver.org/courses/spring98/76101R/readings/becoming.html (accessed 2014-12-01).
[8] *Ibid*.
[9] *Ibid*.
[10] Robert Hughes, *Citizen Cyborg* (Boulder: Westview Press, 2004), p. xii.
[11] Kurzweil.

new era where we transcend our biological limitations and there is no bright line between humans and machines, reality and virtual reality. Given the transhumanist's vision of the use of these technologies and the resulting transformation of humans, is the transhumanist's vision of the future a sustainable one? Answering that question requires consideration of a number of factors, but central to that endeavor is determining what is meant by 'sustainability'.

Leopold's View of Sustainability

The term 'sustainability' is ubiquitous in academic institutions and in marketing products yet its normative dimensions have been insufficiently explored. One definition often relied upon is from the Brundtland Commission of the United Nations (1987). It states that: 'sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'[12] This doesn't tell us much since we also need to know something about the 'needs' of the present and future, and furthermore whether there are interests beyond the needs of humans that should be taken into account. Nor does the Brundtland's definition provide a justification for taking the future's interests into account.

Following Potter in trying to understand the 'optimum environment' for human survivability, I look to Leopold's 'land ethic' as a foundation for a normative framework for sustainability. Leopold path to his land ethic started as a Progressive era scientist in 1909, a forester, and eager to implement the conservation method within the larger Progressive ideals. 'Enlightened management' entailed using science and technology to achieve the Progressive era ends. One of Leopold's initial forays into enlightened management was addressing the predator problem in the Southwest of the United States. Predators were seen as problematic since they killed 'good' animals (deer and cattle) that humans wanted for their own ends. In recounting an experience some thirty years later of shooting a mother wolf, he reflects on the beginnings of his normative transformation:

> We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain. I was young then and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.[13]

The 'fierce green fire' draining from the wolf's eyes and the effects on the mountain due to too many deer suggested to Leopold after years of experience and reflection that there were complex forces in the natural world that were not accounted for in his scientific theory. There was a natural equilibrium regulating the mountain hillside with prey and predator; his prior theory incorporates neither the wisdom nor experience to appreciate the complexity of the natural system. Here Leopold began his intellectual journey, he gained an 'ecological conscience' which is based on an understanding of ecological

[12] Brundtland Commission of the United Nations (1987). Available at http://www.un-documents.net/wced-ocf.htm (accessed 2013-03-01).
[13] Leopold, *Sand County Almanac* (Oxford: Oxford University Press, 1949), p. 130.

interdependence, thinking in different scales, and the moral affections of care and love. We need, according to Leopold, to 'think like a mountain,' recognizing the necessity of the various members of the 'community', including humans, and their inter-dependence on one another and the differences in physical and temporal scales. This requires that we stop seeing the land as an economic resource only and start seeing our relationship with the land in moral terms.

Leopold argued that history demonstrated a steady evolutionary expansion of our sphere of moral concern and respect. Ethical concern started with one's tribe, then expanded to one's nation, then to all humanity and the 'extension of ethics' will eventually include animals and the land. Notice that for Leopold, 'land', meant everything on the land, animals, rocks and soil. Also it meant all land, developed and undeveloped wilderness. Ethics has 'evolved' to include more in its domain of 'considerability' or those entities toward which humans have moral responsibilities. For Leopold, the central vice was to see land and natural resources as property only, something to be used any way we see fit without moral ramifications. Using the story of Odysseus' killing nine slave girls, Leopold illustrated how at the time of writing the *Odyssey*, slaves were property only and did not have any moral status. The story exemplifies how our moral sensibilities and what we think is morally relevant can and does change. Hearing that story now we are horrified by Odysseus' callous indifference to the lives of those women, his failure to see them as moral subjects. But the example is meant to challenge us to interrogate our current views about what we consider as property.

The problem, according to Leopold, was: 'We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.'[14] The change required in humans' relationship to land is detailed in Leopold's conception of the land ethic: 'In short, the land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it.' The 'land ethic simply enlarges the boundaries of the community to include soils, water, plants, and animals, or collectively, the land.'[15] Concern for what Leopold calls 'land health' – the land's capacity for self-renewal – 'expresses the cooperation of the interdependent parts' and 'it implies a collective self-renewal and collective self-maintenance'.[16] Our attention to land health should be viewed in synchronic as well as diachronic terms.

Leopold was well aware that we are in a relationship with the past and future, our lives are shaped, both enriched and sometimes impoverished by the past's behavior and the future is dependent on our choices. Illustrating our interdependence with the past, Leopold showed that our treatment of land determines our history and, hence will determine whether our civilization is sustainable and in what form it continues. As a cautionary tale about what we are currently doing, he says,

[14] Leopold, *Sand County Almanac*, pp. 203-204.

[15] *Ibid.*, p. 204.

[16] Aldo Leopold, 'Land-use and Democracy', *Audubon Magazine* 44 (1942), pp. 249-265.

> We inherit the earth, but within the limits of the soil and the plant succession we also *rebuild* the earth —without plan, without knowledge of its properties, and without understanding the increasingly coarse and powerful tools which science has placed at our disposal.[17]

We have tremendous power over future generations. We have the power to make their lives go well or poorly, in other words, they are vulnerable to us. Vulnerability is a powerful basis of responsibility, Robert Goodin has argued the 'vulnerability of succeeding generations to our actions and choices seems to be the strongest basis for assigning to present ones strong responsibilities for providing for them.'[18] Leopold acknowledged this basis for responsibility claiming that

> the privilege of possessing the earth entails the responsibility of passing it on, the better for our use, not only to immediate posterity, but to the Unknown Future, the nature of which is not given us to know.[19]

This is a sustainability norm, using but not abusing the land, caring for 'land health' for the sake of the future. By land health 'he meant a vibrant, fertile, self-perpetuating community of life that included people, other life forms, soils, rocks, and water.'[20] Leopold was not arguing that we merely preserve the land, rather that we use it responsibly.

Leopold's land ethic is an ethic of responsibility, focusing on relationships as opposed to a juridical model focused on rights, duties, and abstract principles. He wasn't conceptualizing the land or animals as having rights which we are obligated to respect (although he does speak of a biotic right to exist); rather Leopold was arguing that given our interdependent relationships with other human beings, animals, the land, and the future, being in a community with them generates a web of responsibilities to those entities. The land ethic provides that there is an 'individual responsibility for the health of the land' and by implication the future since land health is creating a resilient on-going and self-perpetuating community of life.[21] 'Our community' has different scales and natures, namely, local and global, physical ones, temporal ones, past, current and future, and social and cultural ones. Like Potter, I see deep affinities between Leopold's ethical approach and feminist ethics.[22] Throughout his writings, Leopold uses narrative, as do feminist ethicists, to discover and illustrate what are moral understandings about our responsibilities and what they should be.[23] He recounts stories about some of the practices where individuals were deflecting their responsibility, such as farmers seeing their land as merely a commodity that they own and individual owners required only to 'practice what conservation is profitable on your own land; the government will do the rest'.[24] Leopold's detailed explanation of his experiences and empirical research forms the

[17] Aldo Leopold, 'The Conservation Ethic' [1933], in *The River of the Mother of God*, edited by Susan Flader and Baird Callicott (Madison: University of Wisconsin Press, 1991), pp. 181-193, at p. 185.
[18] Robert Goodin, *Protecting the Vulnerable* (Chicago: University of Chicago Press, 1985), p. 177.
[19] Leopold, 'The Conservation Ethic', p. 94.
[20] Newton and Freyfogle.
[21] Leopold, *Sand County Almanac*, p. 221.
[22] Van Potter, *Global Bioethics*, p. 86.
[23] Margaret Walker, *Moral Understanding* (London and New York: Routledge, 1998).
[24] Leopold, *Sand County Almanac*, p. 207.

justification for his account of our responsibilities to the land and others. Rather than starting, as many philosophers have done, from ideal theory – abstract universalizable norms such as those of Immanuel Kant or Jeremy Bentham – and 'applying' them to problems, Leopold starts with historical, cultural, and empirical circumstances to develop his normative account. He evaluates and critically reflects on our moral understandings, whether they are intelligible and coherent, about what we can do to the land, to animals, what we must do for whom, who is responsible for do what and who is not responsible. Leopold's answer is that our current moral understandings are not intelligible and coherent (even for our prudential interests in survival) and that we must evolve our moral understandings about our relationship to the land if humans are to survive into the future. Leopold's land ethic requires that we have responsibility for the land's health for the sake of the land, since it is valuable beyond its instrumental value to us, but also to carry out our responsibilities to the future generations who will depend upon that land for their well-being.

The conception of sustainability arising from Leopold's model is a 'strong sustainability' conception of sustainability.[25] Two notions of sustainability are discussed in the literature: so-called weak sustainability and strong sustainability. These notions were first developed by Herman Daly and John Cobb in *For the Common Good,* where they challenged the economic paradigm that economic growth and saving rates are the primary indications of sustainability.[26] What these two notions of sustainability represent are two ways of conceptualizing what we owe the future and thereby provide an evaluative framework for our behavior. Weak sustainability measures the welfare of humans in the future, and strong sustainability measures the 'stuff' left in the world for the future (this includes pluralists who measure both welfare and stuff).

On the welfare account of intergenerational obligations, weak sustainability (WS), we are required to maintain at least as much in terms of levels of individual welfare as we currently have. Regardless of how we understand 'welfare,' namely as happiness or pleasure, preference satisfaction, or some objective list of goods (knowledge, friendship, peace), we need to preserve for future generations at least the same level of welfare which we currently have. WS puts no constraints on where the welfare comes from, so that there can be trades between types of capital and other forms of wealth to achieve the welfare satisfaction. If certain natural resources are used up but the society has more economic resources that can compensate agents and 'make up' any welfare decline, then that depletion of natural resources is justified.

Strong sustainability (SS), requires that we save 'stuff' for the future, for example, intact ecosystems, adequate supplies of natural resources, healthy soil, that is, 'natural capital'. SS puts limits on substituting natural assets with human-built ones. In other words, an increase or equivalence in welfare cannot be purchased with the destruction of other kinds of goods. SS supposes that we can't know for certain what future generations will want or need, but that whatever their interests are having certain natural resources will facilitate their ability to live fulfilling lives. In addition, SS supposes that there is value in more than human welfare so that trading off entities without economic value is wrong. This version of sustainability requires us to decide what stuff is important and valuable to preserve for future generations. We can't know what they want in fact

[25] Bryan Norton, *Sustainability* (Chicago: University of Chicago Press, 2005), p. 307ff.
[26] Herman Daly and John Cobb, *For the Common Good* (Boston: Beacon Press, 1994).

whatever policy about resource use and preservation we end up adopting will affect the identities and preferences of future generations and will be optional for the people that it created.[27]

Leopold's land ethic is a strong conception of sustainability since he does not believe that all things are fungible and that they can be traded for human welfare interest. Leopold would not support a WS model that supposes that human happiness (whatever its source) is the only thing of importance and thereby willing to trade natural 'stuff' for more happiness. For instance, on a WS model if the future is 'happier' than we are (think of humans hooked up to a machine as in the Matrix experiencing 'happiness') even though all the natural places are gone, the current generation has satisfied its intergenerational responsibilities. Leopold argued that 'land health' was a community value and not merely for its instrumental value for the interests of humans. Ensuring the health of the land is protecting natural 'resources' for the future. We are not merely passing on 'natural resources' but our commitment to them as valuable.[28] This could be seen as a kind of paternalism about the 'character of future individuals' not a 'paternalism about the welfare of future individuals'.[29] We want future generations to be people who value what we think is worthy of value and we believe that they will lead better lives with these things we believe are valuable. Just as we think that democratic institutions, great art and literature should be protected for the future because we think they are worth protecting, so too should some aspects of nature be protected. It is because we have connections with the future, in Leopold's term are in a 'community' with the future, that we are responsible to preserve things of value for them. Leopold's land ethic, with its expansion of our understanding of community to include the land and attention to its 'health' provides a foundation for a normative framework for strong sustainability.

Emerging Technologies, Transhumanism, and Sustainability

Successes with emerging technologies have fueled the current transhumanists' optimism about the possibility of pushing evolution forward quickly to transform human beings. Is the transhumanists' future consistent with any version of sustainability? On a weak sustainability account, transhumanism may not violate our responsibilities to the future. WS requires that we ensure that future generations' welfare is at least as good as our welfare. On a happiness (hedonist account) account of welfare, transhumanism could come out pretty well in advancing human welfare. This is particularly true since on the WS account the source of the welfare improvement (or equilibrium) doesn't matter. Neuroenhancers, for example, created by pharmacology, implants, or genetic manipulation, designed to enhance our mood and eradiate negative emotions, should make people happier. If what we are required to ensure is that future generations' subjective states are as good as or better than ours and genetic changes, new drugs or implants can eliminate depression and make people 'happier', then we will have satisfied our obligation to them by creating a world with widespread access to neuroenhancers.

[27] For instance, see Derrick Parfit, *Reasons and Persons* (Oxford: Oxford University Press, 1986), and Mark Sagoff, *The Economy of the Earth* (Cambridge University Press, 1988), p. 64.
[28] See Sagoff and Norton.
[29] Sagoff, p. 64.

This is true even if those future generations are denied many of the natural resources that we currently experience, viz., relatively clean air and abundance of water, wild lands, and biodiversity. In fact, some predictions of the posthuman world, humans will merge with machines, and consequently, these merged humans presumably wouldn't experience any deprivation from the depletion of natural resources since their 'experiences' will be in the virtual world and not as we currently experience the world.[30] If this prediction comes to pass, it would have profound and devastating effect on our relationship to the land according to Leopold since he believed that a direct experience with the land was necessary in order to evolve to the land ethic.[31]But for the WS theorist, the relationship to the land is not necessary for achieving human welfare, consequently Leopold's concerns are not salient.

Turning to Leopold's conception of sustainability and whether transhumanism is consistent with his version of SS, we might start by asking whether the changes brought by transhumanism are fundamentally different from other ways technology has been changing us for centuries. In other words, is there something different about the implications of the transhumanists' technological advancements from those of other technologies? Vaccines and other medical developments are good examples of human advancements that have enhanced our lives, extending the average life span of populations where there is widespread access to them. Agricultural advancements that have led to a steady supply of nutritious food have significantly increased many human characteristics, such as the height of those populations. Nevertheless, such enhancements (extending life spans and increasing height) have changed human lives in degrees, so the question may rest upon when enhancements move from the incremental changes in humans to a fundamental change, possibly making humans into a different species from earlier versions of humans. Many of the developments that led to the changes up to this point were designed as 'therapeutic' correctives of diseases or disabilities in humans as opposed to intentional improvements or enhancements of humans—overcoming man as Nietzsche put it.

Both critics and proponents of human enhancements argue that the enhancements being contemplated are different in kind from the ones of the past. According to historian Michael Bess,

> They will affect the qualities we deem most centrally and deeply human. Personality, emotions, cognitive ability, memory, perception, physical sensation, the boundaries between one person and another—all these will be subject to deliberate manipulation.[32]

Some of the most ardent critics of transhumanism raise the following types of alarm: Francis Fukuyama claims that it is the 'world's most dangerous idea', because it threatens human nature, moving us to a posthuman stage of history.[33] Loss of human nature means loss of our continuity of experience and values, and the kind of political regimes possible.

[30] See, for instance, Kurzweil.

[31] Julianne Lutz Newton, *Aldo Leopold's Odyssey* (Washington: Island Press, 2006), p. 348.

[32] Michael Bess, 'Icarus 2.0: A Historian's Perspective on Human Biological Enhancement', *Technology and Culture* 49:1 (2008), pp. 114-126, at p. 123.

[33] Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (New York: Picador, 2002).

Bill McKibbon contends that human enhancements would undermine the necessary context for human experience. Tampering with fundamental characteristics of humans in order to overcome human limitations (such as aging, limitations of cognition and physical abilities) will, according to McKibbon, remove the conditions that are necessary for meaningful human choice. If limitations could be overcome technologically, human lives would be meaningless. Moreover, McKibbon argues that parents will be 'forced' to engineer their children, eliminating traits and dispositions that can lead to self-reflection, self-doubt, and depression, states that can lead to real emotional growth. With 'widespread use, they will first rob parents of their liberty, and then strip freedom from every generation that follows. In the end, they will destroy forever the very possibility of meaningful choice.'[34] Michael Sandel argues that engineered humans would see their talents as fully their responsibility rather than gifts for which we should be grateful:

> [I]f bioengineering made the myth of the 'self-made man' come true, it would be difficult to view our talents as gifts for which we are indebted rather than achievements for which we are responsible.[35]

The secular problem with eroding our appreciation of the 'giftedness' of our talents and powers is that 'it will transform three key features of our moral landscape—humility, responsibility, and solidity.'[36] Ultimately he argues that proposed enhancements undermine the dignity of man since they diminish our humanity by threatening human freedom and human flourishing.

Dangerous idea or not to humanity, will the transhumanists' endeavors be sustainable according to a Leopoldian view of sustainability? At minimum, sustainability dictates that we refrain from harming the future; already, according to Leopold, our treatment of the land is violating that responsibility to the future. Does the transhumanist project harm future generations or the land in some other distinct fashion? The projected trajectory of human enhancements includes enhancements done by individual agents to themselves or their children. The current enhancement agenda is sheltered under the banner of individual freedom and welfare, often with a libertarian favor. This libertarian approach takes form in a defense of fundamental rights against government interference into one's reproductive and morphological freedom. This characterization distinguishes the current enhancement movement from the earlier ones, such as the eugenics movement, wherein the state was imposing its coercive measures upon often unwilling individuals.[37] Parents' reproductive choices (for example, genetically designing their offspring) are motivated to help, not harm, their offspring.[38]

[34] Bill McKibbon, *Enough: Staying Human in an Engineered Age* (New York: Times Books, 2002), p. 190.

[35] Michael Sandel, *The Case Against Perfection* (Cambridge: Harvard University Press, 2007).

[36] *Ibid*., p. 86.

[37] Allen Buchanan, Norman Daniels and Daniel Wikler, *From Chance to Choice: Genes and Social Justice* (Cambridge: Cambridge University Press, 2000).

[38] It should be noted that there has been considerable debate in the literature about the moral appropriateness of genetic alterations of children for enhancement purposes due among other reasons to the potential risks of those procedures to those children. Let's assume for the sake of this argument that all of those risks to one's progeny will be reduced or eradicated as technology advances.

The transhumanists' libertarian framework is problematic to the Leopoldian conception of sustainability, which requires responsibility to the community (in Leopold's sense) and not merely a narrow self-interested focus that the libertarian condones. For example, the goal of radical life extension for those with resources to afford the technological enhancements could have significant impact on the carrying capacity of the land. Just as over-population of any species can be destructive to the ecosystem, so too could too many individuals who extend their lives far beyond what is the 'norm'.[39] Questions of comparative fairness arise as well, namely whether it is fair that some have access to the technology that extends some people's lives while others do not have that access to those technologies and cannot extend their lives. As a consequence of their use of the emerging technologies, those with extended lives could be seen as using more than their 'fair share' of the global resources. If it were feasible to ensure universal access to human enhancing technologies then the fairness to current individuals would be addressed, but we are left with the question of the fairness of resource use issue for the future. Transhumanists contemplate eradicating disease and death altogether. What the prospect of humans living indefinitely would mean for the planet is unfathomable and certainly troubling for the earth. Presumably, new people are being added to the world every year but if roughly equal numbers are not expiring then overpopulation would very quickly overwhelm the resources of the planet. Transhumanism's reliance on libertarian ethics would discount the negative externalities that their activities generate, for example, the effects on the globe of radical life extension. They also undervalue public goods, healthy soil, clean air and water, and the role of the community or state to secure them. Libertarians reject responsibilities outside of those that they have voluntarily chosen or involve direct harm to others; consequently, that moral framework would reject the notion of responsibility to future generations outside of ones voluntarily assumed or directly attributable to their actions.

We owe the future on Leopold's SS account, natural resources and other features of the environment. The human genome arguably is a 'natural resource', part of the natural capital owed to the future in at least some similar form as we received it. In genetically engineering humans we are dramatically altering the natural resources for future humans and dictating the state of their existence. A number of theorists have worried that human enhancements, or designing future people, objectionably dictates the state of existence for future humans. For example, Hans Jonas, philosopher and theologian, was one of the first in the 1970s to raise ethical questions about new technologies used to change humans. Jonas said:

> Technologically mastered nature now again includes man who (up to now) had, in technology, set himself against it as its master… But whose power is this—and over whom or over what? Obviously the power of those living today over those coming after them, who will be the defenseless other side of prior choices made by the planner of today. The other side of the power of today is the future bondage of the living to the dead.[40]

[39] Granted the notion of 'normal' life span is difficult to discern but lives that went significant beyond what is statistically average would have a greater impact on resource use of the globe.

[40] Hans Jonas, quoted in Jürgen Habermas, *The Future of Human Nature* (Maldon, Mass.: Wiley-Blackwell, 2003), pp. 47, 48.

Jonas argues for a 'right to ignorance' as a 'condition for the possibility of authentic action'. The 'ethical command' Jonas claims is 'to respect the right of each human life to find its own way and be a surprise to itself'.[41] Jonas's objection is that human enhancement, specifically genetic enhancement, would 'constitute a kind of parental tyranny that would undermine the child's dignity and capacity for autonomous choice.'[42] Bostrom's response to Jonas's objection to genetically engineering humans is that our descendants will be much more technologically advanced than we, and if they don't like our expansion of their capacities they can reverse them. He says:

> If, for some inscrutable reason, they decide that they would prefer to be less intelligent, less healthy, and lead shorter lives, they would not lack the means to achieve these objectives and frustrate our designs.[43]

Bostrom misses the point of Jonas's objection to genetic enhancements that dictate the characteristics of their children. Joel Feinberg developed a version of the objection to certain interferences of parents on their children, which Feinberg called the violation of the right to an 'open future'.[44] The idea is that parents must not constrain children (and by extension future generations with human enhancements that can continue well into the future) and should provide them with opportunities so that when they grow up they will have choices about the kind of life they want to live.[45] In other words, children have a right not to have all the details of their life (for example, not to have their height, weight, career path, athletic and intellectual abilities, traits and dispositions) dictated in advance. Whether this right to an open future is violated with any given modification is open to dispute. It is arguable, however, that altering the human genome, for instance, so as to eliminate certain human emotions such as compassion or empathy that expand our understanding of ourselves, other humans, and animals might well cross over the threshold and violate that right. Eliminating those emotions would be problematic for Leopold's account since he thought we needed more than a scientific understanding of the land to evolve to the land ethic. 'No important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions.'[46] Once those opportunities to experience those emotions are lost, by genetically precluding them, it is difficult to imagine how they could be retrieved. Because of the long term effects of germ line genetic alternations (modification of germ cell or gametes), modifications to the germ line have come under much more criticism than somatic cell alterations (somatic cell modifications are any cells other than the gametes and thereby are not passed on to progeny). Germ line modifications make changes to future generations and not merely to the individual who is affecting the change. These types of changes might well violate their right to an open future or put the

[41] Hans Jonas, 'Biological Engineering – A Preview', *Philosophical Essays: From Ancient Creed to Technological Man* (Englewood Cliffs, NJ: Prentice-Hall, 1974), pp. 141-167, at p. 163.
[42] Nick Bostrom, 'In Defense of Posthuman Dignity', *Bioethics* 19:3 (2005), pp. 202-214, at p. 211.
[43] *Ibid*.
[44] Joel Feinberg, 'The Child's Right to an Open Future' [1980], in Joel Feinberg, *Freedom and Fulfillment: Philosophical Essays* (Princeton: Princeton University Press, 1994), pp. 76-98.
[45] Jürgen Habermas, *The Future of Human Nature* (Maldon, Mass.: Wiley-Blackwell, 2003), p. 79.
[46] Leopold, *Sand County Almanac*, pp. 209-210.

'future in bondage with the dead' and thereby adopting those changes might violate responsibilities we have to the future.

But we said earlier and argued that we ought to identify resources, whether natural or man-made (democratic institutions and art, for example), worth preserving for the future. In doing so we are hoping to cultivate the character of future persons, making certain ways of living possible for them and other ways of living not possible. And I argued that we should make these decisions on the basis of what we believe is worth preserving, what we believe is valuable. How is this determination different from the engineering of future individuals, why in the one case it is violating the 'right to an open future' and in the other, our picking resources to save, it is not violating the right to an open future? Leaving future generations with a wide variety of natural resources, including human resources such as the genome, expands the range of opportunities that they will be able to experience, thereby opening the possibly life choices. Providing one's children with a range of educational and recreational experiences expands their breath of choices, opens their future options in a way that requiring them to play only tennis five hours a day does not. Making a public commitment to preserve wilderness areas, fisheries, wildlife, works of art, and not necessary NASCAR race tracks, we hope that the future will appreciate the value of those things we committed to preserving because we believe they are of value. They may decide otherwise, but they have the option to appreciate those things. Genetically designing or other altering a person so they can only be particular ways and value particular things is to immorally constrain them by violating their right to an open future.

Beyond the argument that genetic enhancements would objectionably constrain or dictate the lives of future generations, are there other reasons to think that we have a responsibility to the future to preserve some semblance of human genetic heredity, if not against all changes, at least changes that amount to transforming humans into another species? Fiction writers have dealt with versions of this issue, portraying various dystopias with genetic engineering of humans. In addition to Aldous Huxley's well known *Brave New World*,[47] Margaret Atwood in her novel *Oryx and Crake,* imagines a world where genetically engineered 'humans', the 'Children of Crake' are produced to be peaceful, polite, and happy, feel no jealousy, with thick skin that is impervious to the damaging sunlight, and with naturally insect-repellant properties, as well as vegans 'perfectly suited' to their environment.[48] The Crakers were created to solve perceived problems with humans. There seemed to be good reasons for excluding each of the characteristics. For instance, Craker's skin that isn't damaged by sunlight, so people didn't have to worry about prolonged sun exposure. The fact that Crakers turn a certain color when they are fertile and ready to copulate eliminates all the problems of romance and interpersonal sexual relationships! These fictional depictions expose an important truth and one of which Leopold was well aware: that scientific interventions done even with the best intentions and based on the 'best' science can have unintended consequences to society and the planet. Further the hubris of humans implementing scientific innovations without caution for the future can and sometimes does result in disasters. Our predictive abilities, particularly with complexity and when projected far

[47] Aldous Huxley, *Brave New World* (New York: Harper: Perennial Classics, [1932] 1998).
[48] Margaret Atwood, *Oryx and Crake* (New York: Anchor Books, 2004).

into the future, are not really reliable.[49] Even if the individual genetic changes don't have downstream detrimental effects, the cumulative effects of enhancements on future generations might well be detrimental and limit the wellbeing of the future as well as having injurious impacts on the land.

Notice that Bostrom's response to Jonas also presupposes that there will be no unintended consequences of these alternations to humans, that is, they will all be 'good' changes, making us smarter, better looking, and longer lived. Not only is that naïve about the possibility of unintended bad consequences from good changes but also begs the question about whether we always have an accurate insight about what is 'good'. The elimination of what we consider 'bad' traits in favor of 'good' ones is reminiscent of Leopold's early misguided thinking about the varmint problem and the supposed solution of ridding ourselves of 'bad' animals.

On the Leopoldian account of sustainability we have a responsibility to preserve natural 'stuff', which includes arguably includes human genetics and human nature. What is meant by 'human nature' is multifaceted; it is conceived from a number of different perspectives: religious, psychological, 'folk', and biological. If we think of human nature as traits or characteristics or dispositions that all humans share then it may be difficult to define human nature. If rather we define human nature as a cluster of those characteristics and dispositions, supposing that all humans have most of them, but that none are necessary for being human, then we have a plausible account. Recognizing that this is a superficial analysis of human nature but that a full account of the nature of human nature is beyond the scope of this paper, we can nevertheless plausibly argue that preserving human nature is some of the natural 'stuff' worth preserving on the strong sustainability account. Human nature connects us with the past and the future since we assume that humans will react to experiences in roughly the same way that we currently do and that similarity of experiences permits us to understand and empathize with others' lives. What makes enduring literature engaging to us, for example, is the exploration of human emotions and paradigmatic themes products of human nature. The hero's journey, a trope in literature, is based on common human experiences that are based (loosely) on some conception of human nature. Ensuring that the future has that cluster of characteristics and dispositions that comprise human nature is our responsibility and arguably human enhancement threatens it. Some philosophers, for example, most of the transhumanist philosophers and others such as Alan Buchanan have challenged this argument that there is something wrong

> with altering or destroying human nature, because, on a plausible understanding of what human nature is, it contains bad as well as good characteristics and there is no reason to believe that eliminating some of the bad would so imperil the good as to make the elimination of the bad impermissible.[50]

[49] Fritz Allhoff, 'Risk, Precaution, and Emerging Technologies', *Studies in Ethics, Law, and Technologies* 3 (2009); Cynthia Selin, 'Diagnosing Futures: Producing Scenarios to Support Anticipatory Governance of Technology' (2010), Paper presented at the annual meeting of the 4S Annual Meeting - Abstract and Session Submissions, Crystal City, VA. Abstract available at http://www.allacademic.com/meta/p380481_index.html (accessed 2014-12-01).

[50] Allen Buchanan, 'Human Nature and Enhancement', *Bioethics* 23:3 (2009), pp. 141-150, at p. 141.

But given Leopold's experience with so-called 'enlightened management' of the natural environment where we thought we could know what was bad and remove the 'bad' animals (predators) and leave only the 'good' ones, should make us less sanguine about our ability to make those judgments that effect the existence of what ought to be the characteristics of humans.[51]

The future, then, on this Leopoldian account is owed some 'natural resources', including healthy land and other natural 'stuff' since they are required to ensure human well-being. On this account of sustainability, we believe that some things besides human happiness are valuable outside their instrumental value that we want to preserve those things for the future community, a community we conceive ourselves as a part, with shared values. We are responsible to preserve things such as wilderness areas, national parks, and 'land health', treasures of art, democratic institutions, and so on. Some of those natural resources would be human ones, for example, human genetic heredity and human nature. Just as we can marvel and see the value in the majesty of natural places (the Grand Canyon) we can marvel at the complexity and diversity of human beings and want to preserve humanness. Our community includes the past and future; we rely upon past generations for current bequests, including natural and human-made ones (great works of literature, music and art, as well as cultural traditions we believe are worth preserving), and the future relies upon us for the same. We rely upon the future to carry out our current projects that we believe are worthwhile, including preserving values of democracy and responsibility to nature.

Back to the Future: Bioethics and Sustainability

Many theorists have been concerned about modern technology's power to radically change the planet and even perhaps destroy humans; Leopold was among them. Particularly given human hubris and lack of moral consciousness toward our treatment of the land, he was concerned about the potential destructive effects of modern science and technology. His concern for humans' 'cosmic arrogance' that lead them to practice 'power science', attempting to control the world rather than an earlier practice of science which tried to understand the world and learn to live in harmony with the world. Leopold's most important contribution to contemporary ethical discussion has been to expand our thinking about our responsibilities, particularly to the land, focusing on the goal of 'land health' that idea of a 'vibrant, fertile, self-perpetuating community of life.'[52] I have tried to argue that the focus on land health, implemented through exercising our responsibilities entailed by the land ethic, will provide a rich foundation for sustainability. Conceptualizing ourselves as 'fellow-voyagers' with the land community, recognizes our interdependent relationships with all the entities in our community. The land ethic not only changes our thinking about our responsibility to the land community today, but acknowledges our responsibility for the far-reaching impacts of our current actions on the future. Leopold's sustainability charges us with the responsibility to consider the community, physical, cultural, biological, the current and future one of which we are a part.

[51] Leopold, *Sand County Almanac*, pp. 129-133.
[52] Newton and Freyfogle, p. 29.

Leopold's land ethic provides a foundation for sustainability prescribing responsibilities to preserve and protect some of the natural 'stuff' for the future. Transhumanists may be thinking like virtual mountains, not real ones, that is, they are not thinking about their responsibilities to other species, the land, and future with their vision of building 'better' people. Transhumanists suppose that they are doing what evolution has done but just more quickly. Leopold made an astute response to such assertions that 'Man-made changes [in the land-community] are of a different order than evolutionary changes, and have effects more comprehensive than is intended or foreseen.'[53] Leopold, though he was not aware of the technology of the twenty-first century, experienced what human hubris based on our science could do to the planet and our ability to survival on it. Leopold would be dismayed with the transhumanist use of science. He said: 'We of the machine age admire ourselves for our mechanical ingenuity... But are these not in one sense mere parlor tricks compared with our utter ineptitude in keeping land fit to live on?'[54] Leopold saw himself as a scientist; nevertheless, he worried about the direction of science. He said 'Science has no respect for the land as a community or organism, no concept of man as a fellow passenger in the odyssey of evolution.'[55] Leopold's vision of sustainability would have us respect and be responsible for the land's health as a good community member for current members and future members. Potter's original use of the term 'bioethics' meant for the field to consider our technologies' and practices' effects on the future existence on the planet. Returning to the genesis of bioethics we should consider the morality of emerging technologies in light of their effects on sustainability.

Joan McGregor, Arizona State University
joan.mcgregor@asu.edu

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[53] Leopold, *Sand County Almanac*, p. 218.

[54] Leopold, 'The Conservation Ethic'.

[55] Aldo Leopold, 'On a Monument to the Pigeon' (1946), quoted in Curt Meine, *Aldo Leopold: His Life and Work* (Madison: University of Wisconsin Press, 2010) p. 483.

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