

Are There Any Environmental Rights?

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## 1. A Right against Pollution

In this paper I argue that there is an environmental right against being subjected to pollution. The argument, briefly, is that by assuming that we have an environmental right against pollution, we are able to explain the ethical justification or lack of justification for various actions. As the title suggests, this paper extends H. L. A. Hart's argument in 'Are There Any Natural Rights?' (1955). Like Hart, I shall argue conditionally that if there are any moral rights, then there is an environmental right against pollution. This avoids some questions about where such rights come from, or what their ontological status is.

Adapting Hart, I first claim:

- (1) Any human being capable of choice has the right that all other human beings refrain from negligently, recklessly, or intentionally imposing risks on him or her, except to prevent such negligent, reckless, or intentional risk impositions.

This formula is adapted from Hart's, but Hart's formula deals with coercion and restraint rather than negligent, reckless, or intentional risk impositions. I claim that such risk impositions have the same moral status as coercion and restraint in Hart's original formula. This claim requires an argument. The argument is that this claim is confirmed by moral reasoning in actual cases in which environmental rights are violated. But before I get to this confirmation, it is useful to see the reasonableness of an extension of natural rights to an environmental right against pollution.

The negligence and recklessness in my formula are meant in a moral sense, rather than restricted by legal usage and precedent. The purpose of the concept of moral negligence in particular is to mark the lower limit of an agent's responsibility for action. Events that do not

qualify even as negligent, let alone as reckless or intentional, are merely accidental, and an agent is not responsible for them. Moral negligence in this sense is more fundamental than rights. An investigation into the nature of moral negligence is beyond the topic of this paper. This paper does not discuss the foundations of ethics. Nor does it attempt to discuss how environmental rights fit into a broader ethical theory. This paper is set in the middle conceptually between these. For the purposes of this paper it suffices to say that not all risk impositions violate anyone's rights, and there are acknowledged ethical concepts for describing those that do. Also, it should be noted that the rights discussed in this paper are overrideable or prima facie.

Further adapting Hart, I also claim:

(2) Any human being capable of choice is at liberty to do (that is, is under no obligation to abstain from) any action that does not impose risks negligently, recklessly, or intentionally on other persons.

The scope of this second formula depends on how we describe the decisions human beings can make in a given situation, as I explain below. This formula is also adapted from Hart's by replacing his references to coercion, restraint, and injury, by reference to negligently, recklessly, or intentionally imposed risks. Again, I propose this formula as a way of extending Hart's definition of a right to freedom. I shall explain how the second formula, together with the first, explains how risk impositions are justified when they are.

Suppose it is a beautiful summer day and I open the windows of my study facing out onto the backyard of my house. Unfortunately, my upwind neighbor has chosen that moment to begin spraying pesticide on his plants. I am sufficiently healthy that I am not in immediate danger. The pesticide poses a risk to me but not any direct harm. Suppose also

that the small chance of my being harmed by the pesticide is outweighed by the certain harm to my neighbor's rare and valuable plants if my neighbor does not spray. Nonetheless, the pesticide interferes with my enjoyment of the summer breeze, and I shut the study windows.

But suppose further that a week before, my neighbor had warned me that he planned to spray pesticides. I did not lecture him about benefits of a pesticide-free garden. Instead, in the interest of neighborly tolerance, I replied: 'Oh, that's okay. I'm glad you mentioned it. It makes a big difference that you said something first.' My neighbor even offered to compensate me for my loss of the enjoyment of the summer breeze.

It does make a moral difference if my neighbor warns me, and if I agree. The two formulas adapted from Hart explain why. It makes a moral difference because, according to the second of my formulas for an environmental right against pollution, I am at liberty to agree to my neighbor's spraying. By making the agreement, I am not imposing any risks. It is sufficient for me to agree, in order for his spraying not to violate my environmental right against pollution.

The first of my formulas says that it is morally necessary that my concession be justified somehow, since otherwise my neighbor's spraying imposes risks on me and thus violates my environmental right against pollution. In this case, my concession is justified by my agreement.

Why is my free choice so valuable that it outweighs the risk of harm to me from the pesticide, however small this may be? This is a good question, but it is not necessary to try to answer it here. All we need to see for now is that my decision to agree to my neighbor's spraying is sufficient to make his spraying permissible.

My agreement is sufficient to justify the arrangement between my neighbor and me only if we also obey various social rules. Our

agreement may fail to be a genuine agreement if it is made under threat or deception, or in ignorance or duress. The scope of our liberty under the second formula is limited this way. Also, there are constitutive rules for what counts as the practices of agreeing or promising (Rawls 1999). My neighbor follows a rule of this kind simply by approaching me to ask me about spraying before doing it. My acquiescence would not have the same moral force without this.

My agreement to my neighbor's spraying also does not mean that my neighbor is entitled to spray whatever poison my neighbor chooses. If I consent to your stroking my arm, this does not entitle you to stroke my arm with sandpaper. There are limits on what counts as spraying pesticide.

Hart refers broadly to the 'mutuality of restrictions', that arises 'when a number of persons conduct any joint enterprise according to rules and thus restrict their liberty' (1955: 185). Such rules may perhaps be justified by appeal to a hypothetical social contract. But they may also be justified as a means for ensuring that our freedom has effective value. There is also a question as to whether the moral force of an agreement or promise can exist apart from a practice or institution of agreeing or promising (Thomson 1990: 303-304). But it is not necessary to answer this difficult question here.

Social rules of these kinds are necessary for efficient outcomes of bargaining in all but the most idealized cases. Suppose that despite our agreement, in order to avoid compensating me for the loss of the summer breeze, my neighbor waits until the wind shifts so as to direct the poison toward another neighbor. If this new victim is not as healthy as I am, the rare plants' value may no longer outweigh the risk to the new victim. More generally, efficient outcome of bargaining may not result if the parties differ as to their knowledge of the risks, or

their ability to insure themselves or shift costs onto others.

(Calabresi 1970: 161-173)

There may not be an explicit social decision on these rules, but they are real. (Suppose my neighbor sprayed when I was asleep and unable to close windows. Suppose he used chlorine gas.) Unless we are prepared to read minds, we have to look at such rules in order to find criteria for negligence and recklessness, and what counts as intentional guidance of behavior.<sup>1</sup>

Also, in other cases my agreement may not be necessary for justifying the permissibility of my neighbor's spraying. Suppose that an insect-borne epidemic has broken out, and my neighbor has been deputized to spray the neighborhood. Because of the time pressure of the emergency, my neighbor has not warned me, and because of my scholarly isolation I do not know about the epidemic or pesticide spraying.

There may be other kinds of moral considerations in addition to those described by my two formulas for a right against pollution. In this paper I shall not investigate this broader question.

## 2. Risk and Harm

Risks are different from harms. Coercion normally occurs by means of a threat of harm, but merely to impose a risk is not necessarily to threaten harm. It may be objected that, after all, life is full of risks.

This objection brings up the important point that any environmental harm is really a risk. Some of these are certainly high risks. But if my neighbor sprays a poison in the air, I have a probability of inhaling some of it, which then gives rise to a probability that the poison may interact with my lung tissue in various

ways, which in turn gives rise to a probability of damage, which has a probability of harm to me. Environmental harms are stochastic.

In this connection it is important to note that there are violations of human rights that do not involve harm. (There are violations of property rights that do not involve harm. But let us set aside property rights as too distant from the cases we are concerned with.) Suppose that while talking with students after class, I reach over to stroke the arm of a young woman student. Then I would not have harmed her, though I would have violated her human rights by a kind of trespass.<sup>2</sup>

Similarly, there are cases in which a risk imposition violates someone's rights, but without causing harm to that person. Suppose I play Russian roulette on someone with a gun loaded in one of its six chambers. (Thomson 1986) This reckless act, I suggest, is coercive, just as much as it would be if the gun were fully loaded. So I have violated the rights of the person I aim at, even if the chamber is luckily empty when I pull the trigger.

Similarly, suppose I do not intend to play Russian roulette, but I inadvertently drop my revolver, loaded with one bullet, in a school playground. Despite the probabilistic nature of the harm that may result, this is negligent. The school system has a duty to care for the children attending school. We can suppose this duty to follow from an implicit agreement with the parents of the children. My negligence with the revolver then violates the rights of the school system, since the school can no longer carry out its agreement.

I was able to agree to tolerate my neighbor's pesticide spraying. It is also logically possible, but not likely, that the children's parents might agree with the school to tolerate guns on school grounds. By getting behind the wheel of my car I have implicitly agreed to a

mutual imposition of risks among all drivers, and we have many reasons for doing this. Analogously we might imagine the children's parents and the school may agree to tolerate guns for the sake of liberty with respect to gun ownership. (I do not think so, but perhaps the US Supreme Court does.<sup>3</sup>)

The hypothesis that we have a right against negligent, reckless, or intentional risk imposition goes some of the way toward clarifying what the Precautionary Principle might mean. The Wingspread Statement of the Precautionary Principle says, 'When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.' (Raffensperger and Tickner 1999: 8) This statement does not tell us what should count as justifying action. It tells us only that full confirmation is not required. I suggest that negligent, reckless, or intention risk impositions require scrutiny of the kind envisioned by advocates of the Precautionary Principle.<sup>4</sup> But my suggestion must be qualified by the need to explain what negligence is. A full explanation of the Precautionary Principle also needs to explain what is meant by an 'activity'.<sup>5</sup>

### 3. Knowledge of Risks

Suppose now that the pesticide my neighbor sprays is odorless. Since my neighbor is quiet and I am intent on my work, I do not look up. I do not know that he is spraying pesticide outside my open study window. We already supposed that although the pesticide poses a risk, it does not actually harm me. Since the pesticide is odorless, I continue to enjoy the summer breeze. Is my neighbor's spraying coercive if I do not know he is doing it?

There is a tricky issue about whether coercion is possible without the knowledge of the putative victim. But there are cases in which a person's rights are violated despite that person's not knowing it. Suppose someone is ill and unconscious, and he requires an injection of a drug to save his life. But suppose further that he is a Christian Scientist so that his religion forbids the injection. Then I suggest that an injection would violate his rights.<sup>6</sup>

But not many people are Christian Scientists. Indeed, false beliefs about the riskiness of pollutants are widespread. Suppose my neighbor is merely spraying soap on his bushes to keep insects away temporarily. But suppose I have an irrational fear of my neighbor's spraying and I refuse to tolerate it. We would not conclude that my rights are violated if my neighbor insists on spraying.

The difficulty here is made worse by the lack of genuine knowledge of the risks posed by many pollutants. There are some 11,000 organochlorides on the US market today, and an unknown number of these pose health risks. (Thorton 2000: 83) I would suggest that this lack of knowledge indicates a pervasive negligence on the part of chemical companies. It is, however, difficult to know what to do in the midst of the combination of public ignorance and a lack of genuine knowledge. But it suffices for the purpose of this paper if it is possible that a human being's rights may be violated without his or her knowledge, and this can happen with respect to environmental rights.

#### 4. Love Canal

Thus far I have argued that Hart's account of natural rights can be extended to an environmental right against negligent, reckless, or intentional risk imposition, and this amounts to a right against pollution. But it may rightly be objected that this does not show that

any environmental right exists. Instead this argument shows only that Hart's plausible way of thinking about rights can be reasonably extended. To confirm that an environmental right against pollution exists requires us to look at particular cases or types of cases. An environmental right against pollution is not understood here as inherent in the concept of human rights. Instead, it explains our reasoning in actual cases.

The Love Canal disaster is both a particular case of toxic waste pollution and a stand-in for thousands of similar cases around the world. At Love Canal, residents of a Niagara Falls, NY neighborhood found themselves in 1978 to be living nearly on top of a huge amount of toxic waste chemicals buried by the Hooker Chemical Corporation (now Occidental) in a large lightly-covered disused canal. Despite the residents' proximity to these poisons, it remains unclear whether any resident suffered any illness as a result of the toxic chemicals. (National Research Council 1991; Tesh 2000; Wildavsky 1995) In most people's intuitive judgment, however, the Love Canal residents were in some way wronged (beyond the loss of the property values of their houses). But this judgment is difficult to support on the basis of harm. Wildavsky (1995) and Sunstein (2002) conclude that the Love Canal residents were not wronged, and instead were caught up in a panic (which explains the loss the of the property values of their houses).

There are, however, violations of rights that occur without harming those whose rights are violated, such as in the case of my trespass against a student. If we suppose there is an environmental right against pollution, as described above, then it is possible for Hooker to have violated this right without harming any residents. (Of course, actual harm would be clearer evidence of a violation of this right.) This explains the ruling by Federal District Judge John Curtin

(1994) that Hooker/Occidental had been negligent in its handling of the waste and the sale of the Love Canal land to the Niagara Falls School District. The land was subsequently used for an elementary school on top of the canal itself, and the remaining parts were sold to developers for building the houses that eventually became the neighborhood.

It may be objected that Curtin's focus on Hooker's actions may reflect the needs of his court more than the need for moral understanding. So it would be helpful to get confirmation of this rights-based reasoning from a consequentialist view. If we look at harms to health as the only relevant outcomes, however, and if we assume that the risks must be small since they are not known, then we get no consequentialist agreement with the conclusion that the Niagara Falls School Board's rights were violated. But we also have a social goal that we should have a society in which our fellow citizens are able to participate in decision-making. This outcome was not served by transfer of the Love Canal land to the School Board which was not able to deal with chemical waste, and then passed the problem on to Love Canal residents. An environmental right against negligent, reckless, or intentional risk impositions would be useful in preventing such ill-considered transfers of risks. Also useful would be to encourage direct negotiations between managers of polluting facilities and nearby residents. Also especially useful is scientific assistance to help residents measure pollution and evaluate risks for themselves.<sup>7</sup>

Cass Sunstein diligently discusses how an appeal to rights would work in environmental issues and he objects to such appeals:

Even if rights are involved when people are subject to small risks, people should be permitted to waive those rights at an agreeable price .... The proper response to an apparent rights violation is not to force people to buy protection that they do not want but to

provide a subsidy that will give them the benefit for free or enable them to receive the benefit at what is, for them, an acceptable price. But regulation - and this is the key point - often does no such thing. (2005: 372)

As I understand it, this proposal would mean that instead of regulations, say, forbidding sales of contaminated land or requiring prior inspection for health threats of land put on sale, we should subsidize health and property insurance or inspection of land. This would put the initial burden of risks on the buyer or recipient of the risks, rather than the seller or generator of the risks. But this is what proved unsatisfactory at Love Canal. The federal government, acting as insurer of last resort, stepped in to pay the Love Canal residents for the loss of their houses, and then had to sue to recover their costs from Hooker/Occidental. A better arrangement would put the initial burden on the seller or generator of the risks, through taxes, liability standards, or both. This is the purpose of the Superfund law set up as a result of the Love Canal disaster.

##### 5. Environmental Racism

It is widely-recognized that in the US pollution is inequitably distributed, in such a way that African-Americans bear a disproportionate burden. (Bullard 2000; Goldman 1993) The historical, social, and political reasons for this disparity are clear. Inequality with respect to pollution fits the historical pattern of racism and oppression of African-Americans in the US. But if our ethical reasoning about pollution depends on showing that harm has resulted from it, our ethical picture of pollution inequities is not so clear. The hypothesis that there is an environmental right against pollution, however, brings

our ethical reasoning into line with historical, social, and political reality.<sup>8</sup>

Suppose there is a medical prosthetic device made of plastic such that a certain amount of toxic pollution is unavoidable in making it. But suppose also that by any reckoning it is clear that the aggregate benefits of this device outweigh the aggregate costs of pollution involved in making it. Suppose further, however, that the pollution involved in making the device falls disproportionately on African-Americans. I suggest that the aggregate benefit of the device does not eliminate the reasons for concern about pollution.

An environmental right against pollution, as described above, explains the moral concern that persists even if the device is clearly beneficial in the aggregate. According to the hypothesis of an environmental right against pollution, African-Americans have both a right against negligent, reckless, and intentional risk impositions, and the liberty to waive that right. But the disproportionate impact of pollution on African-Americans is a reason to conclude that this distribution of risks would not arise voluntarily.

The environmental right against pollution as explained here is an individual right, not a group right. But disproportionate impact is an effect on a group, rather than an individual. It is conceivable that every member of a disproportionately affect group might be affected slightly in nearly the same degree. Nevertheless, disproportionate impact normally is evidence that some individuals' rights are violated, although perhaps we may not know which.

In contrast, suppose that in each African-American family there is a family member who benefits from the prosthetic device. Perhaps in this case there would be a justification for a disproportionate distribution of risks, based on the hypothesis that African-Americans

might exercise of their liberty to waive their rights. But without this last (perhaps far-fetched) supposition, the disproportionate distribution of risks of pollution on African-Americans as a group is evidence that some individuals' rights are violated. Whether all African-Americans are among these individuals, or only some, depends on which risk impositions are sufficiently careless as to be negligent or worse. Whether there is a violation of rights also depends on whether there is a voluntary waiver of rights. But there must be some recognition of an environmental right in order to consider whether a waiver of this right is justified.

#### 6. Cap and Trade Regulation of Mercury Emissions in Air

Differences in the severity of risks give rise to new issues concerning environmental rights. An example is provided by the EPA proposal for cap and trade regulation of mercury air emissions from electric power plants.

In a cap and trade program a regulatory agency sets an overall cap on pollution of a certain kind, and allocates allowances to polluters so that the total allowances are equal to the cap. The allowances function as licenses to pollute, and penalties for exceeding allowances are an indirect tax on pollution. Polluters are then able to buy and sell their allowances in order to meet their needs. The regulatory agency gradually reduces total pollution by lowering the cap.

Sulfur dioxide and nitrogen oxides from electric power plants are currently regulated in this way by the EPA. There are geographic inequities in the distribution of these pollutants, or "hotspots," and this issue is well-recognized. People downwind of the Ohio River get more than their share. But it is not implausible to argue that these disparities are not so great as to make the program unjustified, in

comparison to other regulations that would be politically more difficult to enact. Because electricity is so valuable, it is not implausible to argue that cap and trade regulation of these emissions would get the hypothetical agreement of even those who bear a disproportionate burden.

Disparate impact, however, does not explain all the moral objections to cap and trade programs. The EPA proposal for cap and trade regulation of mercury emissions from electric power plants has provoked sharp opposition from US environmental organizations. The Attorneys General of eleven US States have sued the EPA to block the program, citing 'hot spots'. (Harvey 2005) But unless the geographic inequality of distribution of mercury is worse than that of sulfur dioxide and nitrogen oxide emissions from the same plants, this argument fails. The transport of mercury emissions varies for different mercury chemical compounds. (North American Commission for Environmental Cooperation 2001) Elemental mercury vapor can remain aloft for about a year, while ionic mercury tends to form compounds that adhere to particles in the air, which may precipitate in a few days. This is complicated and poorly understood, but the geographic inequities are not dramatically worse than those for the pollutants for which cap and trade regulations seem to be acceptable. (US EPA 1997)

It is plausible that cap and trade regulation of sulfur dioxide and nitrogen oxides has the consent of the US public. So it is plausible that the US public considers it worthwhile to run some health risks in exchange for electricity at a lower price than would result from stricter and less flexible regulations. Is there any reason that the same considerations that justify cap and trade regulation of sulfur dioxide and nitrogen oxides do not apply to mercury?

An important fact about mercury is that mercury tends to become bound in organic compounds, among which methyl mercury in particular

bioaccumulates. The result is that that some people's eating habits will direct of large amounts of mercury to them, or pass large amounts of mercury through them to a fetus or nursing child. This bioaccumulation makes it different from sulfur dioxide or nitrogen oxides. The dose to a human being from sulfur dioxide or nitrogen oxides depends directly on how much is in the atmosphere that the human breathes. Only a few unlucky human beings are in the path of severe mercury poisoning, while everyone is affected more nearly in the same way by sulfur dioxide and nitrogen oxides.

Suppose that there are two hypothetical kinds of air pollution, pollutants *A* and *B*. Suppose that these two kinds of pollution are distributed in a completely random way. Suppose further, however, that pollutant *A* randomly kills outright one in a million of the human beings exposed to it, while pollutant *B* shaves a millionth from the length of every human life exposed to it (about a half hour).

Would we be justified in treating these two kinds of air pollution differently? I think we would be. Nearly everyone would agree that if we had to choose between the two kinds of pollution, *A* is much worse. In this case the aggregate risks are equal. There nevertheless is a distinction in the stringency of rights against pollution. The risks differ in quality even if not in total quantity.

The real difference between mercury poisoning and the effects of sulfur dioxide and nitrogen oxides is greater than that between pollutants *A* and *B*. Mercury causes nervous system damage from which a poisoning victim may not recover, even he or she is not killed. Sulfur dioxide and nitrogen oxides exacerbate heart and respiratory illnesses. The qualitative difference in the severity of these real pollutants is greater than that between hypothetical pollutants *A* and *B*.

Even if we may suppose, then, that the US public has given its

consent to a cap and trade program for sulfur dioxide and nitrogen oxides, this social decision gives no reason to conclude that this consent extends to mercury emissions. Such consent would suffice to justify a cap and trade program for mercury. Perhaps the US public is willing to bear the risks of mercury for the sake of slightly less expensive electricity. But there has been no genuine negotiation. (Lee, 2003a and 2003b) So there is no reason to conclude that the US public is willing to make this trade-off.

It may be objected that I cannot show that hypothetical consent is necessary to justify a cap and trade program for mercury. There may be other ethical considerations not based on an environmental right against pollution, and perhaps these justify a cap and trade program for mercury. This is correct, but this paper has been concerned only to explain how an environmental right against pollution can be used to justify moral judgments concerning toxic waste, environmental racism, and quality of risks. In each case, hypothetical consent is sufficient to justify the imposition of a risk. But the hypothesis of a right against negligent, reckless, or intentional risk impositions explains why some such justification is needed. Even if hypothetical consent is not necessary, some sort of justification is.

## 7. Conclusions

Hart argues there is nothing 'mysterious' about how we create obligations and other restrictions on our own and others' behavior by promises, contracts, concessions, social decisions, and licenses. It would be mysterious if, for example, saying the words, 'I promise', suddenly made an act good. But we are obligated by promises because saying, 'I promise', redistributes the freedom of the promisor and promisee, which the promisor's liberty entitles him to do. (1955: 184)

Hart cannot claim, however, that this is the only possible explanation. Perhaps restraints on freedom can be justified in other ways. The practice of promise-making and promise-keeping can also be justified by having good consequences on the whole. Likewise, Hart's principle of a natural right to freedom is logically compatible with injustices, since excuses may be found that are independent of the natural rights of the victims. (1955: 189)

Nonetheless, Hart provides one way of justifying the obligations to keep promises and other restrictions on our behavior. This explanation is based on a natural right to freedom from restraint and coercion possessed by every adult human being capable of choice, and his or her liberty to do whatever does not restrain or coerce others. On this basis, human beings are entitled to redistribute their freedom.

The argument in this paper has the same limitations as Hart's. I merely argue that we have a right against negligent, reckless, or intentional risk imposition, which is analogous to the natural right Hart hypothesizes, and constitutes a right against pollution. I have argued that this right against pollution explains how the residents of Love Canal were wronged, even if they were not harmed; and explains how African-Americans are wronged by the disproportionate impact of pollution, even if for the sake of argument we suppose that this is done for the sake of a worthwhile end; and explains how US citizens are wronged by mercury emissions trading without their consent, even if inexpensive electricity is very important to them.

## Notes

1. Such criteria are defined for a human being with a normal capacity of action. Hart (1968: 168) explains, 'What is crucial is that those whom we punish should have had, when they acted, the normal capacities, physical and mental, for doing what the law requires and abstaining from what it forbids, and a fair opportunity to exercise these capacities'. Oliver Wendell Holmes (1948: 110) agrees, saying more simply, '[T]he law presumes or requires a man to possess ordinary capacity to avoid harming his neighbors, unless a clear and manifest incapacity be shown'. On this basis, Holmes stipulates that 'law only works within the sphere of the senses', (1948: 110) and about negligence, 'The standard which the defendant was bound to come up to was a standard of specific acts or omissions, with reference to the specific circumstances in which he found himself'. (1948: 111) I suggest that this reasoning applies to ethics as well as to law. This does not, however, at all exclude the claims that those lacking in normal capacities, such as children, have on those having such capacities.
2. Thomson (1990: 205-208) goes on to distinguish this kind of case from an insult.
3. In *US v. Lopez*, (1995) the US Supreme Court ruled that a federal law against guns on school grounds exceeded the constitutional limits on federal power.
4. Hayward (2005) also sees a need to base the Precautionary Principle on environmental rights.
5. This requires an account of 'polluting acts' (Lercher 2004).
6. Thomson (1990: 187-191) argues that his rights are violated and then uses this example to investigate hypothetical consent. She argues that hypothetical consent does not help explain this case, and instead we should look to the reasons why it is on balance wrong for the Christian

Scientist to give him an injection. In this paper I am simplifying by simply assuming that hypothetical choice is valuable, rather than trying to explain why.

7. University of Buffalo Chemistry Professor Joseph Gardella explains his community education projects (2003; 2004) on his website.

8. Bullard's first principle of environmental justice is: 'The environmental justice framework incorporates the principle of the *right* of all individuals to be protected from environmental degradation'.  
(2000: 122)

## References

- Bullard, Robert. 2000. *Dumping in Dixie: Race, Class, and Environmental Quality*, 3rd Edition. Boulder: Westview.
- Calabresi, Guido. 1970. *The Costs of Accidents*. New Haven: Yale University Press.
- Curtin, John. 1994. U.S. v. Hooker Chemicals & Plastics Corp., 850 Federal Supplement 993 (W.D.N.Y., March 17, 1994).
- Gardella, Joseph. 2003. *Not Love Canal, Part 1*. Retrieved October 3, 2005 from <http://www.acsu.buffalo.edu/~gardella/>
- Gardella, Joseph. 2004. *Not Love Canal, Part 2*. Retrieved October 3, 2005, from <http://www.acsu.buffalo.edu/~gardella/>
- Goldman, Benjamin. 1993. *Not Just Prosperity*. Washington: National Wildlife Federation.
- Hart, H. L. A. 1955. 'Are There Any Natural Rights?' *Philosophical Review* **64**: 175-191.
- Hart, H. L. A. 1968. 'Negligence, Mens Rea, and Criminal Responsibility', in *Punishment and Responsibility*. New York: Oxford University Press.
- Harvey, Peter (New Jersey Attorney General) et. al. 2005. 'Eleven States Sue EPA to Block Second Mercury Rule: Cap and Trade Rule Will Perpetuate "Hot Spots" of Mercury Deposition from Power Plants'. New Jersey Office of the Attorney General. Retrieved September 25, 2005 from [www.state.nj.us/lps/newsreleases05/pr20050518b.html](http://www.state.nj.us/lps/newsreleases05/pr20050518b.html)
- Hayward, Tim. 2005. *Constitutional Environmental Rights*. Oxford: Oxford University Press.
- Holmes, Oliver Wendell. 1948. *The Common Law*. Boston: Little Brown.
- Lee, Jennifer 8. 2003a. 'US Proposes Easing Rules on Emissions of Mercury', *New York Times*, December 2, 2003
- Lee, Jennifer 8. 2003b. 'E.P.A. Plans to Expand Pollution Markets', *New*

- York Times*, December 15, 2003.
- Lercher, Aaron. 2004. 'Is Anyone To Blame for Pollution?' *Environmental Ethics* **26**(4): 403-410.
- National Research Council. 1991. *Environmental Epidemiology*, Vol 1.: *Public Health and Hazardous Wastes*. Washington: National Academy Press.
- North American Commission for Environmental Cooperation. 2001. *Addressing Atmospheric Mercury: Science and Policy*. Retrieved December 2, 2004, from [www.cec.org/pubs\\_docs/documents](http://www.cec.org/pubs_docs/documents)
- Raffensperger, Carolyn and Joel Tickner, editors. 1999. *Protecting Public Health and the Environment: Implementing the Precautionary Principle*. Washington: Island Press.
- Rawls, John. 1999. 'Two Concepts of Rules', in *Collected Papers*. Cambridge, Mass.: Harvard University Press.
- Sunstein, Cass. 2002. *Risk and Reason: Safety, Law, and the Environment*. Cambridge: Cambridge University Press.
- Sunstein, Cass. 2005. 'Cost-Benefit Analysis and the Environment', *Ethics* **115**: 351-385.
- Tesh, Sylvia. 2000. *Uncertain Hazards: Environmental Activists and Scientific Proof*. Ithaca: Cornell University Press.
- Thomson, Judith Jarvis. 1986. 'Imposing Risks', in *Rights, Restitution, and Risk*. Ithaca: Cornell University Press.
- Thomson, Judith Jarvis. 1990. *The Realm of Rights*. Cambridge, Mass: Harvard University Press.
- Thorton, Joe. 2000. *Pandora's Poison: Chlorine, Health, and a New Environmental Strategy*. Cambridge, Mass.: MIT Press.
- US Environmental Protection Agency. 1997. *Mercury Study Report to Congress* (EPA-452/R-97-003, December 1997), Volume III: *Fate and Transport of Mercury in the Environment*: 5-25. Retrieved December

2, 2004, from [www.epa.gov/oar/mercury](http://www.epa.gov/oar/mercury)

US Supreme Court. 1995. *U.S. v. Lopez*, 514 U.S. 549.

Wildavsky, Aaron. 1995. *But Is It True? A Citizen's Guide to Environmental Health and Safety Issues*. Cambridge, Mass.: Harvard University Press.