

# Rights for Plants; A Historical Discussion of Plant-Life and Western Thought

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## Introduction:

In 2008, the Swiss government produced a discussion document titled “*The Dignity of Living Beings with Regard to Plants*.”<sup>1</sup> The Swiss Parliament asked a panel to consider a rule to protect the dignity of plants and as a result, a 22-page treatise was prepared regarding the “moral consideration of the plant for the plant’s sake.” The prevailing response was one of ridicule from the scientific and media communities. In the same time frame, Ecuador adopted rights for ecosystems into its constitution. Although more abstract than rights for plants themselves, this clause also faced considerable critique from other countries. In an age of increasing environmental calamity, however, it is worth considering the rights of plants, even if such a discussion is thought to be radical.<sup>2</sup> As philosopher Stanley Larmore points out, ridicule and intolerance towards the conceptions of others only impedes open conversation. Without open conversation, there can be no resolution to any controversial issue: “One wants to keep the

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<sup>1</sup> “The Dignity of Living Beings with Regard to Plants: Moral Consideration of Plants for Their Own Sake.” Federal Ethics Committee on Non-Human Biotechnology ECNH. Swiss Confederation. April 2008.

Naik, Gautam. “Switzerland’s Green Power Revolution: Ethicists Ponder Plants’ Rights; Who is to Say Flora Don’t Have Feelings? Figuring Out What Wheat Would Want.” The Wall Street Journal. October 10, 2008.

<http://online.wsj.com/article/SB122359549477921201.html>

“Several years ago, when Christof Sautter, a botanist at Switzerland's Federal Institute of Technology, failed to get permission to do a local field trial on transgenic wheat, he moved the experiment to the U.S. He's too embarrassed to mention the new dignity rule to his American colleagues. "They'll think Swiss people are crazy," he says.”

<sup>2</sup> See such articles as Smith, Wesley J. “The Silent Scream of the Asparagus; Get Ready for 'Plant Rights.'” *The Weekly Standard*. May 12, 2008. Vol. 13. No. 33.

<http://www.weeklystandard.com/Content/Public/Articles/000/000/015/065njdoe.asp> Wesley, at least, raises some serious questions; for example, plant rights may interfere with the production of GMOs, but GMOs might be able to solve starvation of human beings in other countries and so it is “immoral” to consider rights for plants before we have achieved global human well-being. See also “Plants Rights: The Latest Evolutionary Absurdity”

<http://creation.com/plants-rights-the-latest-evolutionary-absurdity><http://www.reshafim.org.il/ad/plantrights.htm>

“When an attitude is so deeply ingrained in our thought that we take it as an unquestioned truth, a serious and consistent challenge to that attitude runs the risk of ridicule. It *may* be possible to shatter the complacency with which the attitude is held by a frontal attack.” Singer, Peter. *Animal Liberation*. Avon Books. 1977. 192. (Note: Singer only supports rights for organisms with sentience and suffering.)

conversation going, in order to achieve some reasoned agreement about how to solve the problem at hand.”<sup>3</sup> Furthermore, as J.S. Mill argues, human beings are fallible, and cannot know truth with ultimate certainty. We are fortunate, however, in that “errors are corrigible”<sup>4</sup>; we are not resigned hopelessly to one unchanging conception of truth. Such is the value of human judgment.<sup>5</sup> Human judgment can change past ways of thinking for the better. Through the free expression of opinions humankind continuously strives towards the clarification of the best possible truth to guide our conduct, based both on experience and discussion.<sup>6</sup> Even when issues may inspire ridicule or disdain, to Mill it is not “conscientiousness but cowardice” for humans “to shrink from acting on their opinions and [to] allow doctrines which they honestly think dangerous to the welfare of mankind...to be scattered abroad without restraint.”<sup>7</sup> Thus, in the western liberal tradition, to eschew a full historical discussion of plants’ rights is to neglect the possibility of clarifying truth, and to impede the mitigation of ultimately dangerous mentalities and doctrines.

The present environmental plight is based on what many scholars, historians, and environmentalists do indeed believe to be dangerously flawed doctrines concerning mankind’s relationship to the earth. As these individuals have shown and as this investigation will highlight,

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<sup>3</sup> Larmore, Charles. “Liberalism and the Neutrality of the State” in *Patterns of Moral Complexity*. Cambridge University Press. 1987. 53 Larmore further argues that in making decisions a liberal government should maintain a neutral stance that does not place one group or individuals conception of the “good life” above any others.

<sup>4</sup> Mill, John Stuart. *On Liberty*. 21.

<sup>5</sup> Mill. 21. “The whole strength and value, then, of human judgment, depending on the one property, that it can be set right when it is wrong, reliance can be placed on it only when the means of setting it right are kept constantly at hand.” 21

<sup>6</sup> “The beliefs which we have most warrant for have no safeguard to rest on, but a standing invitation to the whole world to prove them unfounded. If the challenge is not accepted, or is accepted and the attempt fails, we are far enough from certainty still; but we have done the best that the existing state of human reason admits of; we have neglected nothing that could give the truth a chance of reaching us: if the lists are kept open, we may hope that if there be a better truth, it will be found when the human mind is capable of receiving it; and in the meantime we may rely on having attained such approach to truth as is possible in our own day.”

<sup>7</sup> Mill 22. “Other people, in less enlightened times, have persecuted opinions now believed to be true,”

these flawed doctrines, manifesting themselves in rampant disregard for the earth, stem from the same attitudes held towards plant life--attitudes whose flaws may be illuminated and perchance remedied by a full historical analysis of plants' rights. As any ecologist will agree, it is reckless not to concern ourselves with the protection of plant life merely because it does not appear to move or "think".<sup>8</sup> A discussion of plants' rights is imperative. Ridicule is not only insufficient, it is counterproductive. This paper will argue that, even if western media and science would like to reject the necessary consideration of plant rights, there exists a substantial rationale within the western tradition itself that demands that plants be taken into consideration. Although many scholars correctly argue that western thought is *responsible* for ideologies that have led to environmental degradation and disrespect towards plant life, there nevertheless remains evidence within the western tradition that may guide human judgment in deconstructing the status of societal "truths" today. This evidence may be even more useful in understanding the arguments of non-western philosophy, like the arguments of native nations, in order to achieve a respectful and well-informed conversation about the struggle for rights of plants like wild rice ('manoomin').<sup>9</sup> The reality is that, for better or worse, western thought continues to act as a powerful force--it has spread, often forcibly, across the earth--and so its attitudes cannot be easily ignored. By drawing forth this base of critical historical evidence, it may be possible to work constructively towards a "better" truth, one which may help to ameliorate the widespread

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<sup>8</sup> Yet that same ecologist, likely, would not object to the experimentation upon a plant or to the use of Genetically Modified Organisms (GMOs). This paradox will also be addressed in this investigation.

<sup>9</sup> Streiffer, Robert. "An Ethical Analysis of Ojibway Objections to Genomics and Genetics Research on Wild Rice." *Philosophy in the Contemporary World*. Vol 12, No. 2. 2005. 37-45. and also Walker, Rachel Durkee and Doerfler, Jill. "Wild Rice: The Minnesota Legislature, A Distinctive Crop, GMOs, and Ojibwe Perspectives." University of Minnesota. From the Selected Works of Rachel Durkee Walker, Water Resources Environmental Science PHD. 2008. See, for example Protect Our Manoomin non-profit organization, based at the Red Lake Ojibwe reservation in Minnesota. See also Belize: Maya Food Threatened - Statement Against GMO Corn In Belize, 07 October 2011 in Indigenous Peoples Issues and Resources. Accessed 4/1/2012  
[http://indigenouspeoplesissues.com/index.php?option=com\\_content&view=article&id=12566:belize-maya-food-threatened-statement-against-gmo-corn-in-belize&catid=60:central-american-and-caribbean-indigenous-peoples&Itemid=82](http://indigenouspeoplesissues.com/index.php?option=com_content&view=article&id=12566:belize-maya-food-threatened-statement-against-gmo-corn-in-belize&catid=60:central-american-and-caribbean-indigenous-peoples&Itemid=82)

negative aspects of western ideology, without hastily discarding the whole history. That is the hope of this essay, to destabilize western philosophy's destructive elements through the use of its own historical counterargument, to emphasize the potential for change, and to outline a historical conversation that may meet plant rights movements with understanding instead of ridicule. This will be achieved through the core task of outlining the plant-related history in western thought that has led up to this point. For it appears that, as the actions of Ecuador, the Swiss Constitution, and the Anishinaabeg (Ojibwe) Nations show, this subtle historical conversation has at the very least resulted in intriguing first steps towards rights and moral consideration for plants, from both within and without of western thought. We may be approaching a tipping point, whereat other nations and individuals choose to acknowledge the history that has brought them to this moment by seriously discussing the seminal attempts to formalize a solution.

Because of the human focus of the philosophy of rights, it is admittedly difficult to discuss rights with respect to plants. Certainly there are complications to consider. Proponents of rights for plants do not argue against the ethical and responsible consumption of plants, nor against the ethical and responsible usage of plants. The consumption of plants is unavoidable. Other animals consume plants, and it would be impossible to subsist without the nourishment of primary producers, like plants, which convert the energy of the sun into sugars. This paper will demonstrate, nevertheless, that a legitimate method by which to revolutionize our conceptions of plant life, and by extension conceptions of human beings' relationship to the earth, may be to account for certain rights for plants based on historical traditions within western thought itself. Numerous philosophers, ecologists and environmentalists recognize that "humanity needs

*fundamental* changes in its relationship with nature.”<sup>10</sup> These changes absolutely cannot be achieved without a reevaluation of our relationship to organisms like plants. In part, concepts within environmental ethics--of biocentrism, ecocentrism, and “deep ecology”--take these necessary attitudes into account by shifting interactions with ecosystems and non-human life away from a resource-based appreciation. That is, ecosystems and non-human organisms through these concepts are recognized to have intrinsic value, rather than value based in their usefulness or their economic return as resources to exploit. These concepts often advocate a moral consideration for non-human organisms, though not necessarily a legal consideration. Yet in western history, the argument of intrinsic value admittedly remains a difficult for society to grasp, and within conservation it is often a challenge to convince the public and fellow ecologists alike that non-human life is worth protecting--or at the very least, worth being left alone--for reasons beyond direct human benefit.<sup>11</sup> In 1986 Paul Taylor, an American environmental philosopher, outlined “biocentric egalitarianism” as one solution to our environmental disconnect. Before that, Arne Naess in 1972 proposed a system of “deep ecology”, which states directly that non-human life has intrinsic value.<sup>12</sup> Under these theories, we cannot simply recognize other organisms as “valuable”, we must also hold them with respect. Jim Mason, who has worked closely with author of Animal Liberation, Peter Singer, also writes that by discarding our misguided view that humans are “superior” to all other forms of life we can separate

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<sup>10</sup> Mason, Jim and Singer, Peter. *The Way We Eat: Why Our Food Choices Matter*. Holtzbrink Publishers. 2006. 276

<sup>11</sup> Consider Muir “preservation” vs. Pinchot “conservation.” Consider also how hard it is even for Al Gore, Wes Jackson, Bill McKibben among others to convince people of the human consequences of environmental irresponsibility.)

<sup>12</sup> “The sense in which respect for nature is an ultimate attitude must be examined with some care, since its ultimacy gives rise to a special problem concerning its justification. The practical life of moral agents insofar as they express the attitude in their conduct and character is not the result of their having adopted another, high-level moral attitude from which their respect for nature can be derived. Nor is there a broader, more general attitude toward the natural universe under which respect for nature can be derived. Adopting the attitude of respect for nature cannot, therefore, be justified by being shown to be grounded on a more fundamental moral commitment. It is itself the most fundamental kind of moral commitment that one can make.” Consider Næss, Arne 'The Shallow and the Deep, Long-Range Ecology Movement.' *Inquiry*. 1973. 16: 95-100

ourselves from a de-humanizing and ultimately destructive and mindless pattern. This can only be achieved through respect and compassion towards organisms beyond ourselves. Based on our long-standing disregard for plant life,<sup>13</sup> a discussion of plant rights appears to be all the more essential.

In tracking historical western attitudes towards plant life, leading up to modern legal arguments, it will be invaluable to look at similar examples of animal rights. The idea of plant rights is more scarcely discussed in its own context until relatively recently. Science-based arguments for plant sentience will also come into play, yet this investigation will show that a conversation about plant rights ultimately relies on ethical decisions and historical arguments broaching the central question of how human beings conduct their lives more than on scientific validation.<sup>14</sup> To some animal rights advocates like Peter Singer, in the end rights or at the least consideration should not necessitate intelligence but only suffering and feeling. The argument follows that if an organism can suffer, then we are obligated to take its well-being into consideration. Yet Singer limits his consideration to animals.<sup>15</sup> More importantly perhaps, if we are to consider figures like Albert Schweitzer, a German philosopher of the first half of the twentieth century, or Thich Nhat Hanh, a contemporary Buddhist monk and activist, we should

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<sup>13</sup> Literally billions of plants such as the white pine of the north woods, have been lost often recklessly to the lumber business. See the chapter ‘The Wealth of Nature: Lumber’ in Cronan, William. *Nature’s Metropolis: Chicago and the Great West*. 1991.

<sup>14</sup> Although, scientific proof alone should never be the only reason for action. It is generally up to humans to decide what decisions science should influence, and in this case, while science may be helpful, it is ultimately an ethical decision of “how shall we live our lives?”. Science would tell us that infants, the extremely mentally impaired, the comatose etc. are all without consciousness, yet they maintain rights. And as most would agree, that is indeed how we should live our lives.

<sup>15</sup> “In the work of Peter Singer, plants are excluded because of the presumption that they lead a “subjectively barren existence.” Such processes of exclusion are the grounds for the undervaluation of plants in Western society.” Hall, 157. “There is nothing that corresponds to what it is to be a tree... Once we abandon the interests of sentient creatures as a source of value, where do we find value? What is good or bad for nonsentient creatures, and why does it matter?” Singer quoted in Ingensiep, Hans Werner. “Consciousness and its Place in a “Natural Hierarchy”:  
Considerations Concerning the Role of Consciousness in Modern Philosophy and Ethics. *Synthesis Philosophica*. 2007. 44. 301-317. 10.

act at all times possible with compassion towards our environment and its co-inhabitants. Therefore, this investigation will go beyond Singer's call for the recognition of suffering. The prevalence of works by authors like Michael Pollan (Omnivore's Dilemma) reveals that there is something deeply wrong with our current system of exploitation and mindless consumption. Such a system, it is argued, is impossible if we truly adopt attitudes of respect towards non-human organisms. For those who require a human benefit, if we are able to recognize the rights of plants, we will be a great leap closer to achieving respect and compassion for all human beings as well. Biocentrists and egalitarians in this regard have raised an important contradiction: how can we pretend to celebrate equality within human beings if we continue to determine worth and respect through arbitrary factors like species?<sup>16</sup> Their answer is that we cannot. The line between sentient and non-sentient has been moved numerous times throughout history, and always with the goal of differentiating human beings from the rest of life. By recognizing rights for plants, argue authors like Jim Mason, we might finally escape such an elitist attitude, and only then fully appreciate the interconnectedness of existence.<sup>17</sup> It will be necessary to consider how our beliefs have changed throughout history, through the Enlightenment and Romantic periods, especially through the American movement of Transcendentalism, through the revolutions of the 60s and 70s, and up until today. The question must be asked: is there room within the historical Western tradition to make the changes needed to meet plant rights movements? If so, then it is also a task of historians to steadfastly work towards illuminating those gems of thought. If not, then perhaps it is time to move towards another philosophy.<sup>18</sup>

Although part of the purpose of this investigation is to demonstrate that while western thought

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<sup>16</sup> Singer, Peter. *Animal Liberation*. Avon Books. 1977.

<sup>17</sup> Thich Nhat Hanh. *Essential Writings*. Edited by Robert Ellsberg. 2001. See also Mason, Jim. *An Unnatural Order; Uncovering the Roots of Our Domination of Nature and Each Other*. Simon Schuster. 1993.

<sup>18</sup> "Why should not we have a poetry and philosophy of insight and not of tradition, and a religion by revelation to us, and not the history of theirs (our fathers)? There are new lands, new men, new thoughts. Let us demand our own works and laws and worship." Ralph Waldo Emerson, *Nature*. 1836.

has proven painfully destructive, through careful examination we may find a window for positive action.

Finally, history has been dominated by exclusionist western thought, and so it is vital to consider traditions outside of western thought which offer immense contributions towards repairing global attitudes. As Albert Schweitzer exemplifies, western philosophy and eastern philosophy like Buddhism and Hinduism have long influenced each other.<sup>19</sup> Most importantly of all, here in the United States we must remember what scholar and activist Vine Deloria Jr. has long emphasized, that “God is red.”<sup>20</sup> That is, our beliefs are a reflection of our environments; if we are going to speak of societal changes here in the United States, we must fully regard the knowledge of native nations, like the Anishinaabeg (Ojibwe), who defend that plants have a spirit and a right to dignity.<sup>21</sup>

### The Language of Rights

In order to discuss the historical possibility of rights for plants, it is crucial to understand the status of rights themselves. An abstract concept, rights do not exist naturally or inherently but have developed as a method of recognizing certain human values and protecting agreed upon dignities and privileges for all—though more realistically today, *certain*--human beings.<sup>22</sup> The western philosophy of rights is therefore a purely human construction, arguably beginning in written law with the Magna Carta in England in 1215 under King John, which restricted the

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<sup>19</sup> As Michael Hall’s case study of Buddhism reminds, we must also be careful “avoid constructing East-West dualisms.”

<sup>20</sup> Deloria Jr., Vine. *God is Red: A Native View of Religion*. Fulcrum Publishing. 1972. “[religion] is a force in and of itself and it calls for the integration of lands and peoples in harmonious unity. The lands wait for those who can discern their rhythms.”

<sup>21</sup> See Protect Our Manoomin environmentalist group based in the Red Lake Ojibwe Nation.

<sup>22</sup> Points out Laurence H. Tribe, constitutional law professor, however: “The widely held view that law exists for the purpose of ordering human societies, and for that purpose alone, may well prove an unassailable article of faith.” Tribe 1329



theretofore-unlimited liberties of the sovereign by binding him to law, although there are older possible examples.<sup>23</sup> In the 17<sup>th</sup> century, the English philosopher Thomas Hobbes published Leviathan, a revolutionary work for the time. In Leviathan, Hobbes sets the stage for an early theory of natural rights--that is, rights within the state of nature of self-preservation--with the idea that political practices and institutions are justified only by their tendency to promote the liberty of individuals. A political society is created through the entrusting of an individual's rights to a larger power that will enforce contracts in accordance with the First Law of Nature (that individuals will logically seek peace in order to remove themselves from a state of war). Although Hobbes discusses rights and certain liberties, his theories were themselves authoritarian. While in a state of nature individuals retain all of their rights, the act of consenting to a government implies the abdication of certain rights in order to benefit from protection. Yet the arbiter or institution, in whom the masses entrust their power, under Hobbes has almost ultimate judgment.<sup>24</sup> It would be another English philosopher, John Locke, whose theories fit more closely with the rights utilized presently. Locke's *Two Treatises of Government* are at the foundation of liberalism. According to this work, all individuals have a natural right to "life, liberty, and estate (property)."<sup>25</sup> Locke grounds these rights in reason, and the God-given equality of all men which dictates that all men have equal capacity for reason (a common morality) and equal status as creations of the same maker. Under Locke, no government or individual can practice power beyond their right, or beyond that which infringes upon the common good.<sup>26</sup> His theories contributed directly to the 1689 Bill of Rights enacted by the English Parliament. Enlightenment theories would broaden Locke's philosophies of equality and inalienable rights,

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<sup>23</sup> Ishay, Micheline. *The History of Human Rights; From Ancient Times to the Globalization Era*. 2008. See also Horsman, Reginald. *Race and Manifest Destiny*. Harvard University Press. 1981.

<sup>24</sup> Hobbes, Thomas. *Leviathan*. 1651.

<sup>25</sup> Locke, John. *Second Treatise of Government*

<sup>26</sup> *Ibid.*

culminating in both the French Revolution and the United States Bill of Rights at the end of the 18<sup>th</sup> century.

Almost exclusively, rights were reserved for white men--and in the case of the United States, white, male, landowners.<sup>27</sup> Women and most non-whites were outside of the language of rights.<sup>28</sup> Slowly, the definition of rights was broadened to include all humans, although there continued to be inequalities and infractions of those rights.<sup>29</sup> After the horrors of World War Two and the Holocaust, in 1948 the United Nations adopted the Universal Declaration of Human Rights, which preserves rights for all individuals across the globe. In 1976, the International Bill of Human Rights achieved the status of international law. It is obvious, thus, that the history of rights is one that is concerned intimately, and exclusively, with the activities of human beings. Yet that does not mean that rights cannot (and have not)<sup>30</sup> extended beyond human beings. Rights, although abstract, have an undeniable authority. As such, the language of rights is invaluable in igniting broader societal transformations-- transformations that almost always faced staunch opposition. Therefore, while it may seem a futile pursuit to extend rights to non-human organisms, historically concepts that were once termed ridiculous have become common sense. In the 1500s, the concepts of rights and equality at all would have seemed preposterous and heretical. As Peter Singer points out in Animal Liberation regarding the extension of rights to animals, “The idea of “The Rights of Animals” actually was once used to parody the case for women’s rights.”<sup>31</sup> Singer continues that in response to Mary Wollstonecraft’s publication of *Vindication of the Rights of Women* in 1792, Cambridge philosopher Thomas Taylor quipped that “if the argument for equality was sound when applied to women, why should it not be

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<sup>27</sup> Horsman, Reginald. Race and Manifest Destiny.

<sup>28</sup> Ibid.

<sup>29</sup> Even after the Civil Rights Movement of the 1960s, there remain significant inequalities, especially in the actual practice of rights.

<sup>30</sup> Animal Welfare Act (AWA) first signed in 1966, Endangered Species Act of 1973.

<sup>31</sup> Singer, Peter. Animal Liberation. 1975. 1.

applied to dogs, cats, and horses?” To Thomas Taylor, this was “manifestly absurd.” Since then, feminist movements, devoted individuals, and eventually the Women’s Liberation Movement have secured for women many of the same rights as men. The Animal Welfare Act and the Endangered Species Act have even accomplished a portion of what Thomas Taylor believed to be even more absurd, namely limited rights for non-human organisms. In the United States, as in most places, the history of rights is one of transforming perceptions. The expansion of rights from white, male, landowners to encompass all human beings has not occurred without subsequent or simultaneous dramatic transformations regarding sexism, racism, and difference. Today no one, save the racist or the sexist, would say that rights should be denied based on arbitrary characteristics like sex or race. Furthermore, those racists and sexists who cling to their exclusionary ideas of rights are regarded by the dominant culture as both incorrect and immoral. This is not because the racist or sexist has become more flagrant. It is because as a society these are now considered to be damaging and incorrect ways of thinking. The extension of these rights is grounded, presumably, in belief of the equality of all individuals. Although all human beings are, in many senses, not literally equal--an individual may be stronger, faster, smarter, or otherwise advantaged over another--that is irrelevant because “the principle of the equality of human beings is not a description of an alleged actual equality among humans: it is a prescription of how we should treat humans.”<sup>32</sup>

Yet if rights are based in a theory of equality of treatment, ecocentrists and biocentrists argue, why indeed should the scope of rights be limited to human beings? To do so, they assert, presumes that human beings and non-human organisms deserve unequal treatment. If two human beings can exhibit clear differences in ability or appearance, and yet warrant equal treatment,

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<sup>32</sup> Singer. 5.

then a difference in should species hold no weight. It would seem that, regardless of the fact that rights are a human construction, drawing arbitrary lines between life forms is no different than drawing arbitrary lines based on sex or race. Their argument becomes clear: it is impossible to truly recognize all humans as equal if the line between equal and unequal is one that can be redrawn.

Therefore, the notion that human beings are somehow--and indefinably--superior to other organisms is shown to hold little more basis than racism or sexism.<sup>33</sup> This is what Singer defines as “speciesism.” Furthermore, rights at their essence, as has been shown by their historical development, are no more than an artificial means to achieve respect and compassion. Rights force the individual to consider the well-being of others. They plant the conceptual seeds of morality in individuals who may otherwise disregard the needs of others. Rights provide a code of interaction. If human beings existed in a vacuum, void of all other life forms, then perhaps restricting rights to the human organism would be sufficient. Yet humans do not live in isolation. We are surrounded by an amazing diversity of life forms, all of which inhabit the same planet. We interact with these non-human organisms every day. If our “code of interaction” is limited to human beings, how exactly do we learn to treat these organisms? At one point in time, as activist John Trudell argues, human beings were aware of their intimate ties to the earth and to its inhabitants. Today, as escalating global ecological and environmental devastation demonstrates, all too many humans are alienated from life’s web of existence. As William Cronon

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<sup>33</sup> Consider, for example, how white male aristocrats thought there was something special about them that made them superior. We no longer believe such falsities. “The sad fact is that, when whites enslaved blacks, many “honestly” thought that slaves were morally inferior to their masters. When males legally enslaved females, many “sincerely” believed that wives were morally inferior to their husbands. But men, talking to men about their inferior women, were wrong: To think otherwise is sexism. And whites, talking to whites about their inferior blacks, were wrong: To think otherwise is racism. Now, what about humans, talking to humans about “the inferior creatures?”” 338 Johnson, Edward. “Treating the Dirt: Environmental Ethics and Moral Theory” in *Earthbound* edited by Tom Regan. 1984.

demonstrates in his historical analysis of wilderness and consumption, it is easy to forget that the human world is the same as the natural world--that there is but one earth.<sup>34</sup>

Evidenced by responses of ridicule and profound misunderstanding, the argument for plants' rights faces immense opposition--as unrealistic, as impractical, and as overly sentimental. Yet in reality, rights for plants need not be any of these. It is not from a sense of sentimentality or personal emotion that historical arguments of respect for life inherently arise. This idea can result naturally from reason, from philosophy, from science, and also from culture. It is the task of history to demonstrate this. Legislation, equally important, often plays the role of a moral and ethical compass, and guides societies towards adopting new standards.<sup>35</sup> For example, during the 1970s drunk driving was not considered to be an entirely immoral or unethical act. Those killed by drunk drivers were considered victims of misfortune, but not victims of a criminal act. Since that time, legislation has succeeded in shifting the societal perspective. A drunk driver who crashes and kills innocent bystanders is today regarded as a criminal. These changes also met significant resistance.<sup>36</sup> Another common comparison, and one which Peter Singer, Jim Mason, and Edward Johnson employ, is the fight for women's rights. Not so long ago the idea of rights and equality for women seemed preposterous and impractical. Yet no one would deny today that it is unethical and unjust to exclude women from practicing human rights.

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<sup>34</sup> William Cronon, ed., "The Trouble with Wilderness; or Getting Back to the Wrong Nature" in *Uncommon Ground: Rethinking the Human Place in Nature*, New York: W. W. Norton & Co., 1995, 69-90

<sup>35</sup> "...right" (and other so-called "legal terms" like "infant," "corporation," "reasonable time") have meaning--vague but forceful--in the ordinary language, and the force of these meanings, inevitably infused with our thought, becomes part of the context against which the "legal language" of our contemporary "legal rules" is interpreted." Stone, Christopher. *Should Trees Have Standing: Toward Legal Rights for Natural Objects*. 1972. 41.

<sup>36</sup> Haddon, William Jr. et al. "Report to Congress on Alcohol and Highway Safety." U.S. Department of Transportation, 1968. See also MADD (Mothers against Drunk Driving).

It may now be necessary for laws to redirect awareness to the wellbeing of other life forms. Laws that recognize rights reflect societal values, and if a society is able to expand those laws to include organisms like plants, then perhaps it can resolve the alienation so many scholars and environmentalists see at the heart of today's environmental crises. Legislation such as the Animal Welfare Act and the Endangered Species Act have shown that rights *can* and have been applied to non-human organisms. It has even been shown that humans are willing to extend rights to non-living entities like corporations.<sup>37</sup> Obviously, in order to survive, humans must cause damage to plants. However, biocentrism, ecocentrism, and a multitude of scholars uphold that there is no reason that we should not let respect and compassion guide our actions instead of exploitation and objectification. What is intriguing is that despite western philosophy's destructive elements, there is, in fact, historical basis stemming at least from the 19<sup>th</sup> century in support of just such a transformation. This essay will next outline these historical transformations, as they developed leading up to Transcendentalism and Romanticism, and then beyond into the development of environmentalism and culminating in legitimate demands for plants rights beginning in the 1970s and continuing into the present.

### The Western Tradition and Plant-Life

Admiration for and interaction with plants spans human history. Plants have been used for thousands of years by humans and not always disrespectfully.<sup>38</sup> It is largely to plants and photosynthesizing bacteria that we owe our existence on a hospitable planet with an oxygen-rich biosphere. If that history is too distant, consider the typical meal. Undoubtedly it is plant-based. Even a meal containing animal meat was produced through the consumption of plants, likely

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<sup>37</sup> See concept of Corporate Personhood. *Dartmouth College v. Woodward*, 1819 Supreme Court decision

<sup>38</sup> See Michael Hall's chapters on animism.

corn feed. Consider the cotton in clothes—that too, more obviously, is a product of a plant, of the genus *Gossypium* to be exact. Plant-life, more than being essential to human-life, has also sculpted human history. The spices, like nutmeg, vanilla, and cinnamon that were traded in the famous Spice Trade between eastern and western nations were products of plants. So too are corn, wheat, and many other grains. Plants are everywhere, we use them constantly, and we could not survive without them.<sup>39</sup> There is nothing inherently wrong with the usage of plants to survive. However, as Jim Mason, Matthew Hall and historian William Cronon, among others, suggest that disrespectful and wasteful attitudes have engrained themselves in western-taught human interactions.

Plant-life and “vegetation” is frequently equated with some abstract idea of “nature.”<sup>40</sup> It is important to recognize that in fact plants are organisms *within* an ecosystem, and that an ecosystem is instead the totality of the biotic and abiotic aspects of a community interacting. However, if we consider for the moment the equation of plants with nature, it is also possible to understand more clearly the development of exploitative and domineering opinions towards both nature and by extension, plant-life.<sup>41</sup> The idea of plant-life as an integral part of “nature” makes it impossible to avoid addressing attitudes towards both plant-life and nature. Furthermore, it will

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<sup>39</sup> Laws, Bill. *Fifty Plants That Changed the Course of History*. Firefly Books. 2011

<sup>40</sup> For a philosophical discussion of the differences in the term “nature”, see the introduction to Ralph Waldo Emerson’s *Nature*. When discussing nature, significant literature employs the capitalized form, ‘Nature’, to describe the phenomenon of the organic world. While capitalization of this word may be appropriate where it is discussed existentially, or as a concept of inspiration and abstraction, such usage would imply that it is somehow removed and separate from that which is human. Scientifically, human and nature have no distinction; human expression, thought, and the human organism are in fact indissoluble from nature. The division is imaginary. Thus, the capitalization of this term will only be applied as it refers to an abstract concept – an imagined innate, natural, depiction of the outdoors which contrasts the constructed habitation of civilization. For more on this, and an opposing opinion, see Earth Values, <http://www.earthvalues.org/earthcapn.pdf>

<sup>41</sup> “Within the imprecision of the term *nature*, the global dominance of the plant kingdom is seldom recognized. In a plant-dominated biosphere, it is possible that nature has become so amorphous and peripheral because of the way that plants (synonymous with nature) are themselves perceived. A long overdue study on human-plant perceptions and relationships is crucial therefore for understanding how we treat the natural world.” Hall, Michael. *Plants as Persons; A Philosophical Botany*. State University of New York Press. 2011. 3.

be necessary to examine attitudes towards animals as well, because plants are so rarely considered as holding intrinsic value themselves, perhaps because they move at a different time scale than animals, perhaps because they do not make noise, or perhaps because it is simply impractical to consider them.<sup>42</sup> A shift towards intrinsic value has still not found firm footing for animals, although pet-owners might now argue that they love their “pets.” Therefore, the argument for plants is more difficult still. Michael Hall sees the origin of human being’s denigration of plant life to the lower rungs of the biological hierarchy in the work of Aristotle (384-322BCE).<sup>43</sup> Aristotle, in describing the soul, determined that plants have only a “nutritive” soul, and not a “perceptive” soul.<sup>44</sup> Plants became passive. As reason is a human faculty, and as reason is valued above all other faculties, a hierarchy forms with humans at the top. For Aristotle, plants do not exist for their own sake but for the sake of higher creatures, like animals, and above the animals, for the sake of human beings.<sup>45</sup> Carolyn Merchant, a scholar of environmental history and ecofeminism, argues that it is Francis Bacon, the 16<sup>th</sup> century “father of modern science” who most drastically transformed human interactions with and perceptions of earth “as a living organism” to earth as something to be dominated.<sup>46</sup> When thinking of the plants

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<sup>42</sup> Says conservationist and moral philosopher Matthew Hall, in *Plants as Persons: A Philosophical Botany*, while “studies for animals proliferate, studies that focus on arguing for the moral consideration of plants are rare.” See also Wandersee, J.H. and R.M. Clary. “Advances in Research Towards a Theory of Plant Blindness.” *Proceedings of the 6<sup>th</sup> International Congress on Education in Botanic Gardens at Oxford University*. London: Botanic Gardens Conservation International. 2006. Wandersee, quoted in Hall, argue that society exhibits “plant blindness”, that is, “the literal ignorance of plants by human beings and their spontaneous preference for animal life.” See also Halle. “The majority are “generally poorly acquainted with plants, looking down on them or simply ignoring them.” Halle, F. *In Praise of Plants*. Portland, OR. Timber Press. 2002.

<sup>43</sup> Hall, Michael. *Plants as Persons; A Philosophical Botany*. State University of New York Press. 2011. 22.

<sup>44</sup> “Plants having only the nutritive, other living beings both this and the perceptive soul.” Aristotle. *De Anima (On the Soul)*, edited by H. Lawson-Tancred. Penguin Books. 1986. Quoted in Hall 24. “For the vegetative element in no way shares in reason, but the appetitive and in general the desiring element in a sense shares it, in so far as it listens to and obeys it.”

<sup>45</sup> “In like manner we may infer that, after the birth of animals, plants exist for their sake, and that the other animals exist for the sake of man, the tame for use and food, the wild, if not all at least the greater part of them, for food, and for the provision of clothing and various instruments.” Aristotle quoted in Hall. 25.

<sup>46</sup> Merchant, Carolyn. “The Death of Nature”. In *Environmental Philosophy; From Animal Rights to Radical Ecology*. 280. Merchant, an ecofeminist, also understands the connections between other organisms and the need for rights. “By pointing out the essential role of every part of an ecosystem, that if one part is removed the system is



within “nature”, the trees that make up the forest, the vines that overtake a house face, or the wheat-stalk in the field, these too became forces for humans to dominate.<sup>47</sup> Sir Francis Bacon even described the differences between plants any other organisms explicitly:

“The affinities and differences between plants and living creatures...They have both of them spirits continued and branched, and also inflamed. But first in living creatures the spirits have a cell or a seat, which plants have not...And secondly, the spirits of living creatures hold more of flame, than the spirits of plants do and these two are the radical differences.”<sup>48</sup>

Thus, as Michael Hall points out, they were “inferior to true living creatures.”<sup>49</sup> Bacon, through his prescriptions for objective, invasive scientific investigation of the earth, transformed “nature from a teacher to a slave.”<sup>50</sup> It is this mentality that has continued to the present day. Even figures like the 17<sup>th</sup> century English naturalist John Ray, who compiled the extensive *Historia Plantarum* and did not doubt of the delight of studying the “varied beauty of plants” likely saw the plants he loved as objects within a mechanical order.<sup>51</sup> Since at least the time of Francis Bacon, then, nature and by extension plant-life in the western world has been scarcely regarded

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weakened and loses stability, ecology has moved in the direction of the leveling of value hierarchies. Each part contributes equal value to the healthy functioning of the whole. All living things, as integral parts of a viable ecosystem, *thus have rights*. [emphasis added] The necessity of protecting the ecosystem from collapse due to the extinction of vital members was one argument for the passage of the Endangered Species Act of 1973. The movement toward egalitarianism manifested in the democratic revolutions of the eighteenth century, the extension of citizens’ rights to blacks, and finally, voting rights to women was thus carried a step further. Endangered species became equal to the Army Corps of Engineers: the snail darter had to have a legal hearing before the Tellico Dam could be approved, the Furbish lousewort could block construction of the Dickey-Lincoln Dam in Maine, the red-cockaded woodpecker must be considered in Texas timber management, and the El Segundo Blue Butterfly in California airport expansion.” 288

<sup>47</sup> Within the imprecision of the term *nature*, the global dominance of the plant kingdom is seldom recognized. In a plant-dominated biosphere, it is possible that nature has become so amorphous and peripheral because of the way that plants (synonymous with nature) are themselves perceived. A long overdue study on human-plant perceptions and relationships is crucial therefore for understanding how we treat the natural world.” Hall. 2.

<sup>48</sup> Francis Bacon in Hall. 50.

<sup>49</sup> Hall. See chapter “Dogma and Domination.” 45.

<sup>50</sup> Merchant 281. Humankind, “leading to you Nature, with all her children, to bind her to your service and make her your slave.” Bacon, F. *Sylva Sylvarum*. London, William Lee. 1670. quoted in Hall. 44.

<sup>51</sup> Hall, Michael. John Ray (1627-1705CE) was a botanist of immense importance at his time, and “Ray’s work greatly advanced systematics as well as plant anatomy and physiology.” 50 . “Animate bodies are either endowed with a vegetable soul, as plants; or a sensitive soul, as the bodies of animals, birds, beast, fishes and insects; or a rational soul, as the body of man.” For Ray, plants are passive and created for use by humans. Ray, J. *The Wisdom of God Manifested in the Works of Creation*. Glasgow, UK: Mundell & Son, and J. Mundell. 1798.

with respect and compassion. Rather, these organisms ought to be subdued in order to promote human progress and prosperity. It is this “mechanical ordering” of the world, a system of breaking down living things into their isolated, smallest components (atoms, quarks, what have you) that neglects the interconnectedness of these living beings.<sup>52</sup> In lieu of seeing the organism, Bacon’s methodology recognized the particles.<sup>53</sup> This would set the stage for Rene Descartes to contend in the first half of the 17<sup>th</sup> century that animals, unlike humans, are purely mechanical in nature and do not experience pain. “Under the influence of the new and exciting science of mechanics, Descartes held that everything that consisted of matter was governed by mechanistic principles, like those that governed a clock.”<sup>54</sup> If animals are no more than clocks to serve humans, then what are plants? Aristotle stated “...Plants exist for the sake of animals, and brute beasts for the sake of man.”<sup>55</sup> Plants remain commonly conceived of as inanimate objects, as foodstuff. Yet according to current research, plants are scientifically and observationally alive, though they perform the functions of life (growth, reproduction, etc.) with strategies that differ from animals. Few within western thought would question the mechanical regime until the transcendentalist movement of the 19<sup>th</sup> century, when the forces of nature and the life-forces of plants emerged tentatively from Descartes’ mechanical veil.

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<sup>52</sup> Even though, ironically, by dividing all organisms into their smallest components it is obvious that we are all composed of the same materials

<sup>53</sup> Merchant.

<sup>54</sup> “Descartes was able to escape the unpalatable and heretical view that man is a machine by bringing in the idea of the soul. There are, Descartes said, not one but two kinds of things in the universe, things of the spirit or soul as well as things of a physical or material nature. Human beings are conscious, and consciousness cannot have its origin in matter. Descartes identified consciousness with the immortal soul, which survives the decomposition of the physical body, and asserted that the soul was specially created by God. Of all material beings, Descartes said, only humans have a soul... Thus in the philosophy of Descartes the Christian doctrine that animals do not have immortal souls has the extraordinary consequence that they do not have consciousness either. They are, he said, mere machines, automata. They experience neither pleasure nor pain, nor anything else. Although they may squeal when cut with a knife, or writhe in their efforts to escape contact with a hot iron, this does not, Descartes said, mean that they feel pain in these situations. They are governed by the same principles as a clock, and if their actions are more complex than those of a clock, it is because the clock is a machine made by man, while animals are infinitely more complex machines, made by God...” It was also “at this time that the practice of experimenting on live animals became widespread in Europe. (vivisection) ...Descartes theory allowed the experimenter to dismiss any qualms he might feel under these circumstances.” Singer 208/9

<sup>55</sup> Singer, 196.

The religion of Christianity, moreover, confounded the problem. The story of Genesis, which gives “dominium” of the earth to Adam, has been widely used for just that purpose--to subdue and exploit the earth and its organisms. As Lakota activist Charlotte Black Elk<sup>56</sup> points out, Christianity sets earth as a place of banishment. Adam and Eve are exiled from the paradise of Eden, and their punishment is to inhabit earth. For the Lakota, meanwhile, the earth *is* paradise--that is, earth is a mother, and to be on earth is not a punishment but an embrace. It is not a place of banishment; it is home.<sup>57</sup> Jim Mason states that

“A diagram of Western agri-culture’s worldview would. . . Look like a ladder, with God holding up the top. God placed men at the top rung, from which they are to hold hands with [God] and serve as [God’s] stewards (or shepherds) over all below them in the hierarchy of being. This puts men in a godlike (shepherd like) position of authority on earth.”<sup>58</sup>

Christianity proliferated in Europe the idea that human beings, by virtue of their soul, are unique among living things.<sup>59</sup> Other organisms, at least according to Descartes, do not even have souls as they are not conscious beings. Explains Singer, “Descartes identified consciousness with the immortal soul, which survives the decomposition of the physical body. . . Thus in the philosophy of Descartes the Christian doctrine that animals do not have immortal souls has the extraordinary

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<sup>56</sup> The great-granddaughter of Black Elk.

<sup>57</sup> Charlotte Black Elk. Unresolved Conflict Conference at Gustavus Adolphus College, 3/10/2012

<sup>58</sup> Mason, Jim. *An Unnatural Order*. 211. He calls for a new paradigm for the human spirit: “We need a better, healthier sense of who we are as a species and of how we ought to carry on here among the other living beings in the world. That much all of the more thoughtful environmentalists already seem to be saying. Some of them, however, call for stewardship, which is hardly a fundamental or radical change in worldview. As we have seen, the stewardship model is paternalistic, and it still presumes a ladder of being with humans running the world in a kind of benevolent dictatorship. Stewardship, many believe, is simply a euphemism for dominionism; it is old wine in new bottles. Its hierarchical nature can be demonstrated by applying the model to human relations. Ask a native American or African-American woman if she would accept the stewardship of males or Euro-Americans. Animals and nature, of course, can’t be asked about such things; but human beings go ahead anyway, falling back on conceit and presumption, and some apply stewardship as the new model for living on earth. A better model, or paradigm, for the human spirit would begin with biological realities. It would square well with what actually goes on in the world in which we live. It would help keep us grounded in and bonded with the living world, for only then will we have a worldview and a spirit of living that is truly natural--that is, *of* nature.” 282. See also: “Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things.” Gen. 9, 1-3.

<sup>59</sup> “In particular, Aristotle’s rendering of plants without intellect, was used by Christian theologians to deny plants the possession of a *soul*.” Hall. 9.

consequence that they do not have consciousness either.” Instead, they are automata. This would justify at that time the practice of vivisection, for automata, like machines, do not feel pain. While there persist some today who believe that animals are merely machines this is certainly not the majority opinion. Most, even if they do not recognize intrinsic worth in other animals, will at least admit that they are sentient, can experience pain, and therefore should not be subjected to suffering.

Today plants are widely considered to be like Descartes’ clock, like the automata. Vivisections are performed upon plants (that is to say, dissections of living organisms) without even a passing thought, much in the way that Descartes was able to vivisect dogs and other animals as a result of prevailing philosophies that dictated such practices were acceptable. The reason that vivisections of and experiments on plants are considered acceptable has little to do with the physiological and biological realities of plants,<sup>60</sup> just like the vivisections performed by Descartes in reality had little to do with the actual physiological responses of other animals to pain. As societies learn, and as philosophies change, limits of acceptable interactions with other organisms also change. As Hall, Mason, Merchant and a host of scholars argue, human beings have created various means of separating themselves from other organisms in order to justify interactions that are practical or commonplace, but also to reassure themselves of the “unique” status of the human soul. They posit that if we replace the notion that human beings are separate and superior to other organisms with the realization that all organisms are formed of the same matter, and are alive through their various methods of utilizing energy—that is to say, if we

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<sup>60</sup> For the fact that plants grow shows that they have an interest in continuing to grow even if plants have not gone the route of animals in developing nerves. See Trewavas. “It is human intent, rather than the differing physiology of plants which creates radical exclusion.” Hall. 6.

disregard the idea that “different” means inferior—then there is no option but to change our interactions or consciously chose a system of hypocrisy and double standards.<sup>61</sup>

To consider the 17<sup>th</sup> century English botanist John Ray once more, Ray in some ways counteracted the ideas of Descartes by making the possession of a soul irrelevant—other organisms can be beneficial to human beings regardless of possessing a soul, and without being of direct use.

“And I believe there are many Species in Nature, which were never yet taken notice of by Man, and consequently of no use to him, which yet we are not to think were created in vain; but it's likely ... to partake of the overflowing Goodness of the Creator, and enjoy their own Beings. But though in this sense it be not true, that all things were made for Man; yet thus far it is, that all the Creatures in the World may be some way or other useful to us, at least to exercise our Wits and Understandings, in considering and contemplating of them, and so afford us Subject of Admiring and Glorifying their and our Maker. Seeing them, we do believe and assert that all things were in some sense made for us, we are thereby obliged to make use of them for those purposes for which they serve us, else we frustrate this End of their Creation.”<sup>62</sup>

According to Ray, just because an organism does not possess a soul does not mean God did not create it, and if all things were created by God for the use of man, then the mere admiration of those creations should be use enough. However, Ray still maintains the Judeo-Christian based mentality that the earth and other organisms exist for the benefit and use by humans. While humans should not disregard other organisms as “useless”, Ray is still saying that we should think of them as means for human ends. Precisely, he is reminding his contemporaries of the Judeo-Christian, and Aristotelian tradition wherein the sole purpose of plants *is* their usefulness to Man.

The German philosopher Immanuel Kant would make this statement more explicit. Kant wrote at the end of the Enlightenment, during the 18<sup>th</sup> century. “So far as animals are concerned,

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<sup>61</sup> This is not a matter of sentimentality. It is a matter of historical and societal transformations; it is a matter of our human perceptions of this earth and the other organisms upon the earth. It should be a matter of common sense.

<sup>62</sup> Ray, John. *The Wisdom of God Manifested in the Works of the Creation* (1691), 169-70

we have no direct duties. Animals are not self-conscious, and are there merely as a means to an end. That end is man.”<sup>63</sup> Following after John Ray, the famous Swedish botanist and naturalist Carl Linnaeus published *Species Plantarum* in 1753 which outlined plant nomenclature and a classification based on the number of stamen and stigma (pistils). Linnaeus’ passion for botany likely rivaled that of John Ray. Yet his classification of plants suggests that he conceived of them primarily as objects or curiosities to be studied, not necessarily organisms whose interests ought to be protected for their own sake. We must ask whether or not the interest that Linnaeus sparked in botany was one that encouraged scientific study of objects, or true appreciation of variant life forms.<sup>64</sup> Poet and naturalist Erasmus Darwin in addition to translating Linnaeus’ works into English published The Botanic Garden in 1791 which capitalized on the reproductive processes of plants through anthropomorphizing their life cycles in poetry.<sup>65</sup> His translations of Linnaeus’s work popularized botany as a pastime. The necessity of anthropomorphism to attract a larger readership suggests that E. Darwin’s audience was otherwise unable to relate to plant life cycles. What is potentially transformative of Linnaeus’ work itself is not so much his immense contribution to botanical study but his contributions in terms of species classification in general. This is because Linnaeus did not neglect to include human beings in his taxonomic classification system. In his 1735 *Systema Naturae*, he placed both human beings and monkeys within the category of ‘Anthropomorpha.’ Therefore, his system was among the first to set humans on the

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<sup>63</sup> Ironically, Kant argues that the enlightened approach and critical method required that "If one cannot prove that a thing *is*, he may try to prove that it is *not*. And if he succeeds in doing neither (as often occurs), he may still ask whether it is in his *interest* to *accept* one or the other of the alternatives hypothetically, from the theoretical or the practical point of view. Hence the question no longer is as to whether perpetual peace is a real thing or not a real thing, or as to whether we may not be deceiving ourselves when we adopt the former alternative, but we must *act* on the supposition of its being real." (the science of Right). By this argumentation, it should not matter whether plants feel or not, we can assume they do, and treat them as such.

<sup>64</sup> Linnaeus’ work sparked numerous botanical expeditions.

<sup>65</sup> See the poems *The Economy of Vegetation* and *The Loves of the Plants* by Erasmus Darwin. Through the use of anthropomorphisms, E. Darwin appealed to his readers.

same level, theoretically, as other species in a system that included plants and other animals. He was criticized strongly for this decision, but responded with equal criticism:

It does not please [you] that I've placed Man among the Anthropomorpha, perhaps because of the term 'with human form', but man learns to know himself. Let's not quibble over words. It will be the same to me whatever name we apply. But I seek from you and from the whole world a generic difference between man and simian that [follows] from the principles of Natural History. I absolutely know of none. If only someone might tell me a single one! If I would have called man a simian or vice versa, I would have brought together all the theologians against me. Perhaps I ought to have by virtue of the law of the discipline.<sup>66</sup>

He utilized a system of Kingdom, class, order, genus, and species, wherein only genus and species truly differentiated organisms, whereas the levels of kingdom, class, and order served organizational purposes only. Unfortunately, while Linnaeus did begin a process of “equalizing” human beings among other species, arguably the division made between the kingdom Plants (*Regnum vegetabile*) and the kingdom of Animals (*Regnum animale*) has not just been used for identification and organizational purposes, but also to highlight the “insurmountable” differences between plants and animals, and therefore plants and humans.<sup>67</sup> Furthermore, Linnaeus still upheld the importance of ‘reason’ as a distinguishing factor of human beings.<sup>68</sup>

Interestingly enough, the utilitarian Jeremy Bentham would suggest in 1825 that “The question is not, Can they *reason?* nor Can they *talk?* but Can they *suffer?*”<sup>69</sup> For this statement

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<sup>66</sup> Slotkin. *Readings in Early Anthropology*. Aldine Publishing. 1965. 180. Also, in *Dieta Naturales*: "One should not vent one's wrath on animals, Theology decree that man has a soul and that the animals are mere 'automata mechanica,' but I believe they would be better advised that animals have a soul and that the difference is of nobility." Frängsmyr, Tore; Lindroth, Sten; Eriksson, Gunnar; Broberg, Gunnar (1983). *Linnaeus, the Man and his Work*. Berkeley. 1938.

<sup>67</sup> Interestingly, Linnaeus also had a third kingdom, the Mineral kingdom *Regnum lapideum*, which included fossils. Fossils for many years were not considered the relics of past animals, of course, because this would suggest that the original animals that God created have somehow *changed*, i.e. evolved.

<sup>68</sup> Slotkin. *Readings in Early Anthropology*. 180.

<sup>69</sup> “The day has been, I am sad to say in many places it is not yet past, in which the greater part of the species, under the denomination of slaves, have been treated by the law exactly upon the same footing, as, in England for example, the inferior races of animals are still. The day *may* come when the rest of the animal creation may acquire those rights which never could have been withholden from them but by the hand of tyranny. The French have already discovered that the blackness of the skin is no reason a human being should be abandoned without redress to the caprice of a tormentor. It may one day come to be recognized that the number of the legs, the villosity of the skin, or the termination of the os sacrum are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? Is it the faculty of reason or perhaps the faculty of discourse?

Bentham is widely regarded as a defender of animal rights—and as has been explained, animal rights are a step in the direction of plant rights as well. It is not rational thought that is necessary in order to be defended by the state, for if that were the case, human infants and humans with mental disabilities (as well as humans in a “vegetative” state) would also not be protected by rights. According to Bentham, it is the state’s place to maintain the maximum pleasure, at the expense of the minimum pain for all those that can suffer. With regard to animals, this should be the case except where human benefits outweigh animal benefits. Bentham still held human needs above those of animals and by extension other organisms, like plants.<sup>70</sup> Nevertheless, his ideas are an improvement over those of Descartes. Around the same time, Goethe, the famous German writer, poet, and scientist suggested through his work refuted those scientists who “placed themselves above or outside of nature.” Goethe, rather, sought to prove human “continuity with nature.” Goethe, in fact, was critiquing the mechanical system of Francis Bacon, Descartes, and Newton. Says Astrida Tantillo, Goethe wanted to replace “mathematical, deductive, and analytical constructions with phenomenological ones. . . Science was to be not only for an elite class of mathematicians, but for anyone who was willing to observe nature closely.” Furthermore, “whereas Descartes advocated a complete separation between the thinker and the world, Goethe focused upon the individual’s relationship with the world.”<sup>71</sup> This era also marks

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But a full-grown horse or dog, is beyond comparison a more rational, as well as a more conversable animal, than an infant of a day or a week or even a month, old. But suppose the case were otherwise, what would it avail? The question is not, Can they *reason?* nor, Can they *talk?* but, Can they *suffer?* From Bentham, Jeremy. *Introduction to the Principles of Morals and Instruction*, second edition, 1823, chapter 17, footnote.) Quoted by Singer, [Animal Liberation](#) 211. Utilitarianism seeks the greatest good for the greatest number of people

<sup>70</sup> As evidenced by Gifford Pinchot’s idea of conservation as serving the good of the largest number of humans, utilitarianism has not always been kind to nature.

<sup>71</sup> See Tantillo, Astrida. *The Will to Create: Goethe’s Philosophy of Nature*. University of Pittsburgh Press. 2002. 5. Goethe’s work is extremely interesting, especially in relation to plants as well as science. “In contrast to Descartes, Goethe held that the most essential aspects of nature (whether animate or inanimate) are those that are not easily quantifiable. . . He discounted the possibility of ever discovering permanent truths about nature because nature is constantly changing and redefining itself. Arguing that nature could only be understood in action and in dynamic interaction with all of its parts, he assailed modern science’s propensity to conduct experiments primarily in controlled settings. In addition, he maintained that the best scientists were those who studied nature from a variety



the beginning of Romantic and Transcendentalist ideas that would challenge western philosophies regarding perceptions of nature. These philosophies occurred at the same time that Charles Darwin was formulating, and eventually publishing, scientific theories that radically challenged the Christian theological stronghold on western thought.<sup>72</sup> Darwin's Origin of Species in 1859, and theory of evolution showed that, although Christianity up to that point sought doggedly to hold humans above all other organisms, scientifically and evolutionarily humans are but one species in a much larger web. While perceptions that placed human beings "at the top of the ladder"<sup>73</sup> most certainly did not cease, Darwin's challenge opened the door for many others to come. He demonstrated empirically what many refused to accept intuitively: that humans, plants, animals and all organisms are interrelated, and share a common origin.

If Sir Francis Bacon in the 16<sup>th</sup> century transformed nature "from a teacher to a slave", then across the ocean in the United States the American essayist and transcendentalist Ralph Waldo Emerson sought to reverse that transformation by elevating nature once more to teacher. In 1836, Emerson published the essay *Nature*, in which Emerson criticized Americans for disregarding the teachings and importance of nature. Specifically, he felt that Americans, too preoccupied with progress and urban life, had lost sight of necessity of nature in human life. Man, Emerson believed, did not regard nature with the proper admiration.<sup>74</sup> Only through solitary contemplation of nature could man achieve true appreciation and learning. "Our age is retrospective," opens Emerson in *Nature*. ". . . The foregoing generations beheld God and nature face to face; we, through their eyes. Why should not we also enjoy an original relation to the universe?"<sup>75</sup>

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of approaches and perspectives, while the worst were those who saw the world through only one perspective, whether, in his words, through the eyes of a "geometer" or "mechanist".

<sup>72</sup> Goethe's work on morphology was indeed used by Darwin.

<sup>73</sup> Mason

<sup>74</sup> "The stars awaken a certain reverence, because though always present, they are always inaccessible; but all natural objects make a kindred impression, when the mind is open to their influence." Emerson, *Nature*, 11.

<sup>75</sup> Emerson. *Nature*. 1

“Philosophically speaking, the universe is composed of Nature and the Soul.”<sup>76</sup> The Soul is that which is human or Man, and Nature is that which is outside of Man. However, Man and Nature are made one through the idea of a Universal Being.<sup>77</sup> It is thus that “The greatest delight which the fields and woods minister, is the suggestion of an occult relation between man and the vegetable. I am not alone and unacknowledged. They nod to me and I to them.”<sup>78</sup> Emerson would inspire a host of others, including his friend and mentee Henry David Thoreau. Thoreau’s most famous work, *Walden*, published in 1854 describes his attempts to live simply. It outlines his experiences living in a small cabin near Walden Pond on land owned by Emerson. These works, although certainly revolutionary, still maintain that nature, although now having some value of its own, is most valuable in its relationship to human beings. The rationale for appreciating nature is in its benefits for human beings. Yet by reconnecting God or spirituality with nature, Emerson and transcendentalism make it far more difficult to disregard the intrinsic value of nature, including plant-life. The notion that Man’s soul is one with the universe also connects with philosophers and scholars that will be discussed later, particularly Albert Schweitzer and the Buddhist Thich Nhat Hanh. As Thich Nhat Hanh’s Buddhist-based philosophy of inter-being proposes, if there is indeed an “occult” connection between man and the vegetable, as Emerson suggests, then should we not at the least regard those vegetables (plants) with respect? If plants are a key part of “nature”, then plants also have something valuable to teach human beings. Not only that, but man’s soul *is* the plant, just as the plant *is* man’s soul.<sup>79</sup>

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<sup>76</sup> Emerson 7

<sup>77</sup> “Standing on the bare ground, --my head bathed by the blithe air, and uplifted into infinite space,--all mean egotism vanishes. I become a transparent eye-ball. I am nothing. I see all. The currents of the Universal Being circulate through me; I am part or particle of God.” Emerson 13

<sup>78</sup> Emerson 15

<sup>79</sup> Consider also Walt Whitman’s poetry, such as *Leaves of Grass*.

John Muir would take the writings of Emerson and Thoreau to heart. For Emerson, Thoreau, Muir, like most environmentalists today, their theories came partially out of watching what Americans once thought to be endless and inexhaustible “wilderness” and resources become mournfully finite. As historian William Cronon describes, the traditional 18<sup>th</sup> and 19<sup>th</sup> century American practice of land and resource use was wasteful, unconcerned with sustainable agricultural cultivation and resource harvesting, partially because of the idea that when resources became depleted in one location, there would always be more space, and more forests, to exploit. As far as plant resources like forests go, the lumber industry would prove that northern white pine forests, like those along Lake Michigan, in Northern Minnesota and Wisconsin, which once harbored a multitude of 100 foot tall white pines, could indeed become depleted.<sup>80</sup> Such practices also had the consequence of cementing plants, animals and the land not as something living but as a commodity.<sup>81</sup> Emerson, Thoreau, and Muir all witnessed the destruction linked to extensive deforestation and agricultural use, although they were themselves not innocent from its benefits. These experiences fueled their at the time radical ideas. The material of environmental history textbooks may imply that environmentalism was primarily the purview of men, but as Karen L. Kilcup, Carolyn Merchant, and the field of ecofeminism explains, women played an immense

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<sup>80</sup> Cronon. “In 1870, the typical sawlog reaching a Michigan mill town measured sixteen to eighteen inches in diameter, and no one considered a tree worth cutting if it was not at least a foot wide. Ten years later, the minimum size had fallen to six to eight inches...” 201.

Even as late as the early 1870s, few had believed [the exhaustion of forests] possible. “*Will* our pine timber soon be exhausted?” asked a journalist in a popular Chicago magazine in 1870. “We say no. None of our generation will see our pine forests decimated.” Cronon reveals that even the concern of conservationists that forests were “finite” and “should be used more carefully were greeted with scorn by the lumber press.” James S. Little, a Canadian lumberman, “wrote a long article in 1876 on the timber supply of the United States and Canada. In it, he suggested that Great Lakes loggers were ‘not only burning the candle at both ends...but cutting it in two, and setting the match to the four ends to enable them to double the process of exhaustion.’ In the face of Little’s estimates, the editors of *Northwestern Lumberman* simply argued that his statistics were inadequate and his economic assumptions naïve.” 200.

<sup>81</sup> Cronon. “What had begun as a natural pine tree had been progressively transformed from log to board to artificially standardized commodity.” 177. “When most nineteenth-century Americans saw a white pine, they could summarize their reaction with a single, compelling word: lumber.” 152.

role in nature writing, science, and environmental philosophies.<sup>82</sup> Variations on the ideas of Emerson, Thoreau, Muir, as well as less famous figures like Susan Fenimore Cooper<sup>83</sup>, would become increasingly prevalent by the 20<sup>th</sup> century. Largely due to the growing, inescapable observation of resource exhaustion, individuals gradually perceived that the land was at risk. Called the “Father of the National Parks”, it is great part due to Muir’s persistence that the United States created its first national parks at Yosemite and Sequoia in 1890.<sup>84</sup> The argument between Muir’s “preservation” and Pinchot’s “conservation” highlights the ideological struggle for National Parks; Muir believed the land should be set aside, and preserved mostly for the sake

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<sup>82</sup> Kilcup, Karen L. “‘I like These Plants That You Call Weeds’: Historicizing American Women’s Nature Writing. *Nineteenth-Century Literature*, Vol. 58, No. 1 (June 2003). 42-74.

<sup>83</sup> Susan Fenimore Cooper’s book *Rural Hours*, is essentially a nature journal documenting a year following the seasons in Cooper’s life amongst the forests and fields around Cooperstown, New York. Published in 1850 in the United States, it actually precedes Thoreau’s *Walden* (1854). In *Rural Hours*, Fenimore Cooper expresses that those who have a sense of place are more humble towards the land. She emphasizes the need for “moral obligation” towards understanding natural history. “Tuesday, 7th.—Walked in the Great Meadow. The old trees which bordered this fine field in past years are fast falling before the axe. A few summers back, this was one of the most beautiful meadows in the valley; a broad, grassy lawn of some twenty acres, shut out from the world by a belt of wood sweeping round it in a wide circle; it was favorite ground with some of us, one of those spots where the sweet quiet of the fields and the deeper calm of the forest are brought together. . . . The branchless shafts of those aged oaks, pines, chestnuts, hemlocks, and ashes are very impressive objects, forming in such positions a noble forest portal. We have frequently stood upon the highway, perhaps half a mile off, to admire those great trunks lighted up by the sunshine, with which they had so lately made acquaintance; there are few such forest colonnades left in our neighborhood, and this is now falling rapidly before the axemen.” “It frequently happens that the same man who yesterday planted some half dozen branchless saplings before his door, will to-day cut down a noble elm, or oak, only a few rods from his house, an object which was in itself a hundred-fold more beautiful than any other in his possession. In very truth, a fine tree near a house is a much greater embellishment than the thickest coat of paint that could be put on its walls, or a whole row of wooden columns to adorn its front; nay, a large shady tree in a door-yard is much more desirable than the most expensive mahogany and velvet sofa in the parlor. Unhappily, our people generally do not yet see things in this light. But time is a very essential element, absolutely indispensable, indeed, in true civilization; and in the course of years we shall, it is to be hoped, learn further lessons of this kind. “In these times, the hewers of wood are an unsparing race. The first colonists looked upon a tree as an enemy, and to judge from appearances, one would think that something of the same spirit prevails among their descendants at the present hour. It is not surprising, perhaps, that a man whose chief object in life is to make money should turn his timber into bank-notes with all possible speed; but it is remarkable that any one at all aware of the value of wood, should act so wastefully as most men do in this part of the world. Mature trees, young saplings, and last year’s seedlings, are all destroyed at one blow by the axe or by fire; the spot where they have stood is left, perhaps, for a lifetime without any attempt at cultivation, or any endeavor to foster new wood. One would think that by this time, when the forest has fallen in all the valleys—when the hills are becoming more bare every day—when timber and fuel are rising in prices, and new uses are found for even indifferent woods—some forethought and care in this respect would be natural in people laying claim to common sense.” *Rural Hours*.

<sup>84</sup> Along with President Theodore Roosevelt. And also at the expense of those lands’ original inhabitants. See the website of the Ahwahneechee tribe of the Pawnee Nation, who were forced out of the area of Yosemite. <http://sites.google.com/site/ahwahneechee/about-us>

of preserving it. Gifford Pinchot, the first chief of the U.S. Forest Service, argued that forests should be conserved explicitly for human usage, through effective methods of exploitation and renewal, using forestry practices such as those exemplified by silviculture. From the perspective of plant rights, Muir seems to support the government's protection of trees for their own sake. Says Muir: "How narrow we selfish conceited creatures are in our sympathies! How blind to the rights of all the rest of creation! With what dismal irreverence do we speak of our fellow mortals!"<sup>85</sup> Furthermore, says Muir: "Few are altogether deaf to the preaching of pine trees. Their sermons on the mountains go to our hearts; and if people in general could be got into the woods, even for once, to hear the trees speak for themselves, all difficulties in the way of forest preservation would vanish."<sup>86</sup> Muir, at last, seems able to forgo the notion of human superiority.<sup>87</sup> In fact, he goes so far as to consider the voices of the trees. It is not just for the sake of human beings that he believed lands should be preserved; he also believed it was for the protection of other organisms—and explicitly, the protection of other organisms against the "blind progress" of humans! It is at this point that what Edward Johnson calls "respect-for-life" theories come into play most clearly. The compassion that Muir holds for the pine trees comes as a result both of Muir's ability to recognize himself in the pine trees, as a kindred creation and as kindred matter, but also as a result of his respect for the lives of those trees. "The idea behind the respect-for-life theories is that something about the nature of *living* organisms requires our respect."<sup>88</sup>

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<sup>85</sup> Mckibben, Bill quoting Muir in *The Comforting Whirlwind: God, Job, and the Scale of Creation*. Cowley Publications. 2005. 31

<sup>86</sup> "The National Parks and Forest Reservations", *Sierra Club Bulletin* Vol. 1, No. 7 (January 1896)

<sup>87</sup> Unfortunately, it would seem that for all Muir's words, and although he may not have seen humans as superior organisms, he did appear to believe that some humans were better than others simply due to their race or culture. Muir expressed

<sup>88</sup> Johnson, Edward. "Treating the Dirt" in *Earthbound* 345

Albert Schweitzer (1875-1965), a German philosopher and medical missionary, would propose the idea of “Reverence for Life.”<sup>89</sup> Following this philosophy, human beings should seek to do as little harm as possible to other organisms; if possible, indeed, Schweitzer believed that individuals should do what they can to help other living beings. Of course, human beings must eat, but the injuries that humans cause should never be thoughtless, and only in defense of their own lives. Schweitzer summarizes his theory as follows: “A man is truly ethical only when he obeys the compulsion to help all life which he is able to assist, and shrinks from injuring anything that lives. He does not ask how far this or that life deserves one’s sympathy as being valuable, nor, beyond that, whether and to what degree it is capable of feeling. Life as such is sacred to him.”<sup>90</sup> For Schweitzer, then, we should be mindful even of plucking a flower.<sup>91</sup> Although Edward Johnson criticizes Schweitzer’s theory as lacking sufficient argumentation, and as being “obscure” in its basis,<sup>92</sup> there is something to be said for accepting other life as deserving of respect, without needing to address its sentience, intelligence, or capacity for pain. Schweitzer was greatly influenced by Hinduism. Buddhism as well as Hinduism have important contributions to make in any consideration of the well-being of non-human organisms like plants, and the beliefs of ahimsa (non-violence) in addition to ideas of interconnectedness, like those of Thich Nhat Hanh, have inspired a number of western philosophers.<sup>93</sup>

During the same time as Schweitzer, the American ecologist Aldo Leopold was formulating his “land ethic.” Working for the United States Forest Service, Leopold witnessed and participated in the extirpation regimes of the Forest Service, which sought to eliminate large

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<sup>89</sup> Schweitzer would win a Nobel Peace Prize in 1952 for “Reverence of Life.”

<sup>90</sup> Schweitzer, Albert. *The Philosophy of Civilization*. New York: Macmillan, 1959, 310.

<sup>91</sup> Johnson “Treating the Dirt” 346

<sup>92</sup> Ibid.

<sup>93</sup> See Michael Hall’s discussion of Buddhism, Hinduism and Jainism. These religions, it must be noted, also generally place plant-life as a less desirable life to humans. *Plants as Persons*.

predators from nature reserves in order to create large ungulate herds. However, the elimination of large predators, like wolves and mountain lions, had numerous negative effects on ecosystems—effects known as trophic cascades.<sup>94</sup> Leopold eventually recognized this problem and its consequences and sought to reverse the destructive extirpation philosophy. After seeing a wolf that he had shot die, and watching the “green fire” fade from her eyes, Leopold proposed the notion of “Thinking Like a Mountain.”<sup>95</sup> To think like a mountain meant to consider the entirety of an ecosystem; to think holistically, from the scale not of an individual, but from the scale of the community.<sup>96</sup> As a direct result of his own experiences as a forester and ecologist, Leopold composed his “land ethic,” which states famously that “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”<sup>97</sup> This way of thinking required that the land be seen “as a community of interdependent parts,” of which humans are but one interconnected part. “The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.”<sup>98</sup>

From Leopold’s land ethic would develop numerous variations. The theme of acknowledging a community of organisms and the need to consider the interconnectedness of an ecosystem before making dramatic alterations would become what is today the scientific field of ecology. Leopold’s land ethic would also help to inspire the idea of “deep ecology”, which, according to Arne Naess, acknowledges "the right of all forms [of life] to live is a universal right which cannot be quantified. No single species of living being has more of this particular right to

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<sup>94</sup> Ripple, William J. and Beschta, Robert L. “Linking Wolves and Plants: Aldo Leopold on Trophic Cascades.” *BioScience*. Vol. 55. No. 7. 2005.

<sup>95</sup> Beschta.

<sup>96</sup> Johnson, “Treating the Dirt”

<sup>97</sup> Leopold, Aldo. Sand County Almanac. 1949.

<sup>98</sup> Johnson. 352

live and unfold than any other species." <sup>99</sup> Its central idea is that ecosystems can only tolerate a certain amount of disturbance by human beings. Deep ecology is also inspired by religions like Buddhism, Hinduism, and Jainism. It is today a major aspect of conservation. Philosopher Paul Taylor in 1986 published Respect for Nature, which outlines a philosophy of "biological egalitarianism", sometimes called biocentrism. This philosophy upholds that all organisms have intrinsic value. Regardless of their usefulness to humans, organisms are valuable by virtue of their life, and no organism can be held as more valuable than any other. Taylor's biocentrism is most applicable to a discussion of plant rights.<sup>100</sup> From this perspective, they argue, if plants do individually hold intrinsic value, then the needless destruction of a single plant is similar to the wanton killing of a human being. What is most interesting in the 20<sup>th</sup> century, however, is that there are scholars demanding not just the recognition of the *value* of life forms, but also scholars demanding that those lives be treated in a specific way, with respect. To require specific positive treatment of a life form is similar to the practice of rights, though still from it in a literal sense. Curiously enough, in 1949 a short story called the "The Sound Machine" by British writer Roald Dahl was published in *The New Yorker*.<sup>101</sup> "The Sound Machine" introduces Klausner, a man obsessed with sound. Believing there to be many sounds which humans are unable to hear because their frequencies are too high for human ears, he invents a machine in order to convert those frequencies to an audible range.<sup>102</sup> Using this machine, he hears something terribly unexpected: the screams of roses as his neighbor cuts them. The next day, Klausner experiments

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<sup>99</sup> Næss, Arne 'The Shallow and the Deep, Long-Range Ecology Movement.' *Inquiry*. 1973. 16: 95-100

<sup>100</sup> Kenneth Goodpastor, environmental ethics philosopher and law professor, also advocates biocentrism, as a non-anthropocentric basis of moral consideration for non-human life.

<sup>101</sup> Dahl, Roald. "The Sound Machine," *The New Yorker*, September 17, 1949.

[http://www.newyorker.com/archive/1949/09/17/1949\\_09\\_17\\_029\\_TNY\\_CARDS\\_000222363#ixzz1qfXzOzKi](http://www.newyorker.com/archive/1949/09/17/1949_09_17_029_TNY_CARDS_000222363#ixzz1qfXzOzKi)

<sup>102</sup> "There is a whole world of sound about us all the time that we cannot hear. It is possible that up there in those high-pitched inaudible regions there is a new exciting music being made, with subtle harmonies and fierce grinding discords, a music so powerful that it would drive us mad if only our ears were tuned to hear the sound of it. . ." Dahl



by striking a beech tree with an axe. “He is horrified to hear the deep and pathetic moan that the tree makes in response.” Klausner calls frantically calls his doctor. "Please come. Come quickly. I want someone to hear it. It's driving me mad!" he says. Klausner wants another human being to confirm these sounds. The doctor arrives and dons the headphones as Klausner swings again at the tree. As he does so, a large branch falls and destroys the machine. Klausner is mortified by the experience, and tells the doctor “to paint the tree's cuts with iodine.” Although the doctor says that he heard nothing, he nonetheless dresses the wounds. The story, though little known, is certainly a reflection of the history that has accumulated thus far. Dahl’s full intention in composing the story is difficult to know. Nevertheless, more than just a curious piece of literature, it is an intriguing commentary on the inability of many human beings to perceive the plight of the plants around them. Written just after World War Two, it seems to incorporate the international sense of horror from the war<sup>103</sup>, but also a strikingly sharp analysis of human interactions with plants. The character Klausner is considered by his neighbor, for example, to have gone mad. His doctor, although obliging in listening through the machine, remains skeptical. The story emphasizes that society frequently labels radical or controversial ideas, like the idea that plants have rights, perception, or even pain, as madness even if their claims might be legitimate. In 1954, J.R.R. Tolkien’s *The Lord of the Rings* series would also touch upon the issue of voices for the plants. Tolkien, reacting to the destruction of the countryside which he loved, placed industry and technology as the destructive forces within his trilogy. Technology and industry were the artifices of what Tolkien called the “Robot Age,” which he never failed to

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<sup>103</sup> Dahl served in the Royal Air Force and was an intelligence officer. He received serious injuries after a crash over Africa, including a skull fracture and temporary blindness. See Warren, Alan. Roald Dahl. Starmont House, 1988. 12, 87.

describe with distaste.<sup>104</sup> Even more curiously, Tolkien created Ents, tree herders in the likeness of various tree species, who could themselves walk and talk. Not only that, but Tolkien's trees themselves could speak; in fact, they could move, if they felt so inclined. Says Treebeard in reaction to the deforestation of his forest: "Many of those trees were my friends, creatures I had known from nut and acorn; many had voices of their own that are lost for ever now. And there are wastes of stump and bramble where once there were singing groves."<sup>105</sup> Tolkien's plants are not passive; they are active. What is interesting is that Tolkien himself was deeply religious, yet he was able to see within Christianity a call for harmony, or "Communion", with the earth.<sup>106</sup> Tolkien expresses in his writings that all aspects of the world, whether mountain or stream, forest, plain, or beast, have some character or life of their own. The mountain of Caradhras is not mere stone; it possesses a will of its own, and as much personality as any living, breathing being. The stream Nimrodel has a voice and a memory, and the Old Forest is both seeing and hearing.<sup>107</sup> Ultimately, in addressing the relationships of his fictional cultures with nature, Tolkien is searching for a strategy to human being's estrangement from the natural world.<sup>108</sup> From a

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<sup>104</sup> Tolkien, J.R.R. *Tales from the Perilous Realm*. "On Fairy Stories." Houghton Mifflin Company. 2008. 382. "It is full Maytime by the trees and grass now. But the heavens are full of roar and riot. You cannot even hold a shouting conversation in the garden now, save about 1 a.m. and 7 p.m.—unless the day is too foul to be out. How I wish the 'infernal combustion' engine had never been invented. Or (more difficult still since humanity and engineers in special are both nitwitted and malicious as a rule) that it could have been put to rational uses—if any..." *The Letters of J.R.R. Tolkien* by Christopher Tolkien. Mariner Books. 2000. Letter #64 (Letter to Christopher Tolkien. 30 April 1944)

<sup>105</sup> Tolkien, J.R.R. *The Lord of the Rings*. Houghton Mifflin Company. 2003 edition.

<sup>106</sup> Tolkien, J.R.R. *Tales from the Perilous Realm*. "On Fairy Stories." Houghton Mifflin Company. 2008. 382. See also Oser, Lee. *The Return of Christian Humanism: Chesterton, Eliot, Tolkien, and the Romance of History*. University of Missouri Press. 2007.

<sup>107</sup> "There are profounder wishes: such as the desire to converse with other living things. On this desire, as ancient as the Fall, is largely founded the talking of beasts and creatures in fairy-tales, and especially the magical understanding of their proper speech. This is the root, and not the 'confusion' attributed to the minds of men of the unrecorded past, an alleged 'absence of the sense of separation of ourselves from beasts.' A vivid sense of that separation is very ancient; but also a sense that it was a severance: a strange fate and a guilt lies on us. Other creatures are like other realms with which Man has broken off relations, and sees now only from the outside at a distance, being at war with them, or on the terms of an uneasy armistice. There are a few men who are privileged to travel abroad a little; others must be content with travellers' tales." "On Fairy Stories". 382.

<sup>108</sup> Tolkien seems to argue that there must be a balance, however. Other animals cannot be loved at the expense of hating man. Hopefully, society can instead express love both for Man and for other living beings. Tolkien still

historical perspective, it is important to consider popular literature just as much as ecological or nature writing in gleaning perspectives on plants. Dahl and Tolkien indicate that the historical conversation of human being's relationship with "nature", and indeed with the voices of plants, is one that involves their audiences as well, and one that was changing by the dawn of the 1960s.

### The Nineteen-Seventies and The Environmental Movement

By the late 1960s and early 1970s, a time of numerous societal changes, activists like Peter Singer and Tom Regan began to criticize a system that caused the widespread suffering of animals, and for that reason published Animal Liberation in 1975. It is during the 1970s, when environmentalism took off as a movement of national proportions that rights for non-human organisms began to emerge expressed in precise terms and demands. Reacting against issues such as nuclear-proliferation, overpopulation fears<sup>109</sup>, chemical and pesticide poisoning, and city smog pollution it is at this time that the conservation ideas of Muir, Thoreau and Leopold were popularly adopted. Rachel Carson's *Silent Spring* in 1966, demonstrating the impacts of chemical usage on the environment, especially bird populations had also brought attention to environmental concerns to wider public awareness. Therefore, it is not surprising that around the decade of the 1970s, demands for legal recourse in solving environmental destruction grew in prominence.<sup>110</sup> It was a time of cultural transformation, as well as uncertainty.<sup>111</sup> Many minority groups, as well as the Women's Liberation Movement, also became immensely vocal in their

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maintains the idea that human beings are somehow unique, even though he acknowledges the loss of understanding and communion. "We now get men who love animals more than men; who pity sheep so much that they curse shepherds as wolves; who weep over a slain war-horse and vilify dead soldiers. It is now, not in the days when fairy-stories were begotten, that we get "an absence of the sense of separation." On Fairy-Stories, (Note G)

<sup>109</sup> See Paul Ehrlich's "Population Bomb" theory (that human populations had reached their limit and would soon crash. Ehrlich maintains that human populations have reached such numbers that the earth's resources simply cannot provide for.)

<sup>110</sup> The Lord of the Rings, curiously, also saw a resurgence in popularity.

<sup>111</sup> For more on the societal transformations of the 1970s, see Schulman, Bruce. *The Seventies: The Great Shift in American Culture, Society, and Politics*. Da Capo Press. 2002.

own concerns for equality and justice. It is during this time that, in reaction to the growing environmental movement, the United States passed legislation such as the Animal Welfare Act (1966), Clear Air Act (1970), the Clean Water Act (1977), and the Endangered Species Act (1973). The demand for rights for non-human organisms was extended by others in defense of ecosystems, and less often, for plants themselves. The children's author Dr. Seuss also reacted to the growing environmental degradation. In 1971 he published *The Lorax*, a now well-known children's book.<sup>112</sup> In *The Lorax*, a young boy encounters a creature called the Once-ler, who explains that the land was once filled with plants and animals, until he greedily begins to deforest the region. A creature called the Lorax speaks up for the trees, yet the Once-ler's greed results in the destruction of the ecosystem, and the disappearance of the previously abundant plants and animals.<sup>113</sup> Dr. Seuss's work broached serious themes about human beings relationship to their forests and to the earth—themes that were echoed in the environmental movement.

#### Legal Philosophies – Moral and Legal Consideration for Plant-Life

The following year in 1972, Christopher Stone created an essay on environmental law, the aim of which was to design a system of recognizing rights for ecosystems and non-human organisms.<sup>114</sup> Stone proposes a system in which humans could represent the interests of non-human organisms or ecosystems, like forests or rivers, in a court of law. Under common law at the time of the essay in the United States, disenfranchised or negatively effected individuals could present a legal case against those who polluted land or water sources that negatively

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<sup>112</sup> Geisel, Theodor Seuss ('Dr. Seuss'). *The Lorax*. Random House for Young Readers. 1971.

<sup>113</sup> Dr. Seuss is, coincidentally, showing a similar experience to that of Emerson, Thoreau, Emerson, and especially Leopold in that it frequently took the exploitation of the land for individuals to realize destructiveness of resource use practices. In particular, like Seuss's 'Once-ler', Leopold's experience in extirpating wolf populations in order to bolster deer populations for hunting showed him graphically that greed, hastiness, and anthropocentrism led to environmental catastrophe.

<sup>114</sup> Stone, Christopher. *Should Trees Having Standing? Toward Legal Rights for Natural Objects*. Southern California Law Review. 1972.

affected the individual plaintiff, or in the name of some other human interest. However, in so doing, firstly the issue was shifted from one valuing the non-human entity, and secondly, the monetary awards from these cases inevitably went to the human.<sup>115</sup> Under common law practices, “none of the natural objects, whether held in common or situated on private land, has any of the three criteria of a rights-holder. They have no standing in their own right; their unique damages do not count in determining outcome; and they are not the beneficiaries of awards.”<sup>116</sup> Stone argues instead for a system wherein humans could represent ecosystems and natural objects, like trees or plants that cannot represent themselves, similar to the practice of guardianship and for the sake of those ecosystems.<sup>117</sup> Trust-funds might be created where the monetary awards from such cases could accumulate and be used for restoring damages to the affected non-human party.<sup>118</sup> Stone admits that, practically, it is not always possible to uphold rights for non-human organisms so strictly as for humans, he nevertheless suggests an interesting system that at least acknowledges rights for non-human organisms, even if it is still possible to violate those rights. “...Co-existence of man and his environment means that *each* is going to have to compromise for the better of both.”<sup>119</sup> Nevertheless, it is a system that fully acknowledges the concept of rights and moral consideration for plants. In his essay, Stone not only proposes a system of rights for the “environment,” he explains each step with detail. To understand just how forward-

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<sup>115</sup> “Now, what is important to note is that, under our present system, even if a plaintiff riparian wins a water pollution suit for damagers, no money goes to the benefit of the stream itself to repair *its* damages.” Stone. 15.

<sup>116</sup> Stone. 16-17.

<sup>117</sup> A “proposal was recently advanced by Christopher Stone, who suggested the appointment of guardians or trustees for objects in the environment<sup>124</sup> as institutional embodiments of a perceived obligation to treat the world about us with respect, and as symbols of a recognition that persons are not the only entities in the world that can be thought to possess rights.” Tribe, Laurence H. “Ways Not to Think about Plastic Trees: New Foundations for Environmental Law.” *The Yale Law Journal*. Vol. 83, No. 7. 1974. 1315-1348. 1341.

<sup>118</sup> “The natural object’s portion could be put into a trust fund to be administered by the object’s guardian. . . The fund would be available to preserve the natural object as close as possible to its condition at the time the environment was made a rights-holder. The idea of assessing damages as best we can and placing them in a trust fund is far more realistic than a hope that a total “freeze” can be put on the environmental status quo. Nature is a continuous theatre in which things and species (eventually man) are destined to enter and exit.” 34.

<sup>119</sup> Stone. 34.

looking Stone is, it should be remarked also that while he is reluctant to justify his legal argument in terms of “what’s in it for us”, when he does so he in fact mentions the greenhouse effect, threats to the atmosphere, and “melting the polar ice caps.”<sup>120</sup>

In 1974, partially in reaction to Stone, Laurence H. Tribe, a constitutional law professor at Harvard, published an article framing a discussion of extending rights to non-human organisms with what he saw as a highly problematic and growing trend of using artificial trees and artificial plants, or “plastic trees.” The problem Tribe sees with “plastic trees” is that they “are tangible symbols of a view of nature which coincides with the currently myopic premises of environmental law and policy. The trees represent nature abstracted to pure categories of human need: They provide shade, decoration and the aesthetic semblance of a natural environment.”<sup>121</sup> Tribes finds in these “plastic” replicas a metaphor for the environmental law policies of that time, which invariably establish conceptions of rights for nature, animals, plants and other non-human entities through an anthropocentric lens. That is, such extended rights are not rights for the sake of the non-human, but placed in terms of their usefulness to human beings.<sup>122</sup> Tribe agrees with Stone in his solution. In an ever-evolving legal system based on changing human reason:

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<sup>120</sup> Stone. 45. “For my part, I would prefer a frank avowal that even making adjustments for esthetic improvements, what I am proposing is going to cost “us,” I.e., reduce our standard of living as measured in terms of our present values. Yet this frankness breeds a frank response--one which I hear from my colleagues and which must occur to many a reader. Insofar as the proposal is not just an elaborate legal fiction, but really comes down in the last analysis to a compromise of *our* interests for *theirs*, why should we adopt it? “What is in it for us?” This is a question I am prepared to answer, but only after permitting myself some observations about how *odd* the question is. It asks for me to justify my position in the very anthropocentric hedonist terms that I am proposing we modify.” 44.

<sup>121</sup> Tribe. 1347.

<sup>122</sup> “Policy analysts typically operate within a social, political and intellectual tradition that regards the satisfaction of individual human wants as the only defensible measure of the good, a tradition that perceives the only legitimate task of reason to be that of consistently identifying and then serving individual appetite, preference, or desire. This tradition is echoed as well in environmental legislation which protects nature not for its own sake but in order to preserve its potential value for man.” Tribe. 1325.

“At a minimum, we must begin to extricate our nature-regarding impulses from the conceptually oppressive sphere of human want satisfaction, by encouraging the elaboration of perceived obligations to plant and animal life and to objects of beauty in terms that do not falsify such perceptions from the very beginning by insistent "reference to human interests." Thus environmental impact surveys and statements might make explicit reference to obligations felt toward nature. Resources might be devoted to improving our technical capacity to incorporate such felt obligations in policy analyses. And legislation might be enacted to permit the bringing of claims directly on behalf of natural objects without imposing the requirement that such claims be couched in terms of interference with human use.”<sup>123</sup>

Whereas Stone’s primary goal is to outline a feasible legal system to account for non-human rights, Tribe’s focus is on removing the anthropocentric language of environmental law, in addition to confirming Stone’s suggested system.<sup>124</sup> If we rely on a system that accounts for non-human rights for human benefits, he argues, then we are not constructing anything more than “plastic trees.” If it is to be a truly effective system, recognizing intrinsic value in non-human organisms may be necessary. Otherwise, there remains the risk of the present “ideological bias of the system...a system that has come to treat the human will and its wants as the center around which reason as calculation must revolve.”<sup>125</sup> Furthermore, because environmental and non-human law such as the Animal Welfare Act (1970) or even the National Parks Act (1916)

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<sup>123</sup> Tribe. 1341.

<sup>124</sup> “At least so long as we re-main within empathizing distance of the objects whose rights we seek to recognize, it seems reasonable to expect the acknowledgment of such rights to be regarded as more than fictitious. Thus, protecting cats and dogs from torture on the basis of their desire to be free from pain and hence their right not to be mistreated seems less jarring conceptually than protecting a forest from clear-cutting on the theory that the threatened trees have an inherent "right to life." It is not surprising that one of the few pieces of existing federal law aimed unambiguously at protecting nonhuman interests—the Federal Laboratory Animal Welfare Act limits its protection to mammals, whose perceptions of pain and discomfort we presume to be similar to our own. In addition to supporting a general hypothesis that the needs of creatures close to man on the evolutionary scale are easier to assimilate into contemporary value systems than are the needs of our more distant relatives, the legislative history of the 1970 amendments to the Act also provides a graphic illustration of the process of anthropomorphic validation: The House committee report proclaims that the purpose of the legislation is to ensure that animals are "accorded the basic creature comforts of adequate housing, ample food and water, reasonable handling, decent sanitation . . . and adequate veterinary care including the appropriate use of pain-killing drugs . . ." The statutory terms reveal an obvious transference of human values to the nonhuman rights-holders: The words "com-fort," "decent sanitation" and indeed "pain" refer to human experiences and perceptions. By incorporating such terms into legislation protecting animals, the draftsmen are equating the perceptions of animals with those of humans; the terminology subliminally rein-forces our sympathy for the plight of mistreated animals by evoking images of human suffering. As a result, the propriety of legal protection in the interest of the animals themselves becomes more apparent. “n Tribe 1332.

<sup>125</sup> Ibid.

theretofore relied on evoking human sympathies, “as the evolutionary distance between man and nonhuman rights-holders increases, the difficulty of analogizing to human experiences mounts.”<sup>126</sup> A consequence that Tribe recognizes is that it becomes considerably more difficult to analogize between humans and *plants*. Tribe points to a growing base of scientific research that may alleviate this difficulty.<sup>127</sup> Beyond science, however, “to recognize that humanity is a part of nature and the natural order a constituent part of humanity” may be another method. To recognize the value in non-human organisms may even have unforeseen human benefits by liberating human beings from a position of “exploiter” and “manipulator.” At the very least, Tribe’s legal suggestions for rights for non-human organisms, like plants, act as “procedural devices far less cumbersome than class actions would become available for challenging environmental [or botanical] abuses.”<sup>128</sup>

It is at this same time, in 1972, that Arne Ness laid out the concepts of deep ecology, drawing upon Leopold’s “land ethic.”<sup>129</sup> Deep ecology, acknowledging the interconnectedness of ecosystems and emphasizing the intrinsic value of all organisms. As a scientific field, it fits well with both Stone and Tribe’s systems of rights for non-human organisms in that, if all living beings have intrinsic value, just as all human beings are “created equal”, then there is reason to support the rights of non-human organisms without attaching anthropocentric justifications. In

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<sup>126</sup> Tribe. 1344. “As the evolutionary distance between man and nonhuman rights-holders increases, the difficulty of analogizing to human experiences mounts. Torturing a dog evokes a strong sympathetic response; dismembering a frog produces a less acute but still unambiguous image of pain; even pulling the wings off a fly may cause a sympathetic twinge; but who would flinch at exterminating a colony of protozoa?”

<sup>127</sup> “When legal protection is sought for plant life, the obstacles towards a convincing analogy are greater still. Yet even here the prospects are not altogether hopeless. Humans share certain fundamental needs with plants. Humans and plants both require water, oxygen and nutrition; both grow and reproduce; both die. A set of basic reference points for analogizing plant requirements to human needs thus exists. Some research even suggests that plants exhibit electrical and chemical reactions which are functionally analogous to pain. And, once the bases for empathy are thus established, biologists and ecologists can obviously enrich our understanding of what “needs” exist for the other life forms with whom we have begun to feel new kinship.” Tribe. 1344.

<sup>128</sup> Tribe 1343.

<sup>129</sup> “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.” Leopold, Aldo. *A Sand County Almanac*, 1949.



*Respect for Nature* (1986) Paul Taylor would lend further weight to the argument for non-human rights by more clearly stating that not only do non-human organisms have intrinsic value, their value is equal to that of human beings. That is, no organism is any more or less valuable. Eventually, the ideas of biocentrism and the ideas of ecocentrism would conflict. Biocentrism recognizes the value of individual organisms while ecocentrism, which is most closely related to Leopold's "Land Ethic", is mostly concerned with the intrinsic value of the ecosystem as a community. Therefore, in any argument for *plant* rights, biocentrism would provide a platform for the defense and dignity of individual plants whereas ecocentrism would place the individual plant under protection within an ecosystem only if its continued existence remained vital to the health of that ecosystem. At present, the controversies over GMOs touch upon this legal decision. The genetic modification of individual plants may be seen, through a biocentric system of rights, to be a violation of those rights yet not necessarily through an ecocentric system.

### The Controversy Over Genetic Modification and the Dignity

#### of Plants – Native Perspectives :

It is, in fact, the topic of Genetically Modified Organisms (GMOs) that has formed some of the most recent discussion of rights and dignity for plants in the United States. As this essay has shown, experimentation on plants has occurred in western tradition for hundreds of years, with Linnaeus and Darwin as leading figures amongst a host of botanists and researchers. It is during the 20<sup>th</sup> century in particular that genetic sciences developed to the point that genetic engineering and modification of organisms is now commonplace in research institutes and universities. Of course, human beings have "genetically modified" organisms through domestication and horticulture since the start of any form of agriculture. However, genetic technologies today make

the sequencing of a genome (the total genetic material of an organism), as well as the alteration of those genetic sequences a far more common and far quicker practice. Many plant products found in grocery stores today are genetically modified in some way. The controversy comes down to a question of ethics, but also to a question of how a society conceives of the lives of plants. Therefore, it is also a question of history. In terms of this investigation, it is also a matter of the dignity of plants. If, in the way of Sir Francis Bacon and so many others within western thought, plants are mere automata that exist for the benefit of humankind, then their genetic modification is not as controversial--although there may remain objections as to what consequences may occur down the line for ecosystems where Genetically Modified Organisms (GMOs) have been introduced. Yet if plants are seen as organisms with lives and interests in their own right--especially, if they are seen as possessing dignity or intrinsic value such as biocentrism would suggest--genetic research becomes more objectionable. To make the controversy clearer: most individuals would not support the genetic modification of human beings in order to produce some "superior" quality in those individuals. That is called eugenics, and especially following World War Two, the dominant society is often suspicious of such associations. Likewise, if the DNA of a human being, particularly one that could not express their consent in the matter, was altered in order to grow taller more quickly, to glow in the dark, or to possess some other quality, society might also object. The arguments of figures such as Muir, who heard the voices of the pines and saw the value in their preservation, might also express concern. Given the history of western thought outlined in this essay, it is clear that the controversy also lies at the culminating point of a long historical conversation about the relationship between human beings and plants. Understanding this conversation, it may be easier to see its influences playing out in the present day, and it is certainly worthwhile to address this

controversy within any discussion of rights and dignity for plants. It is in part this same issue that the Swiss panel sought to address in 2008. If plants are to be regarded with dignity, and if plants are to be given certain rights, history may alert us to some practical solution.

Some of the strongest objections to genetic modification of plants have come from native nations. In Minnesota especially, these differences in world-view have collided over the issue of wild rice.<sup>130</sup> The Anishinaabeg (Ojibwe) culture recognizes that plants, like wild rice, have a spirit. To perform genetic research and modification is to disregard the dignity of the plant, and to disregard its spirit. Moreover, wild rice is culturally sacred. Says Winona LaDuke, Anishinaabe (Ojibwe) environmentalist and activist, “my community, the Anishinaabeg, calls the rice *Manoomin*, or a gift from the Creator. Every year, half our people harvest the wild rice, the fortunate ones generating a large chunk of their income from it. But wild rice is not just about money and food. It’s about feeding the soul.”<sup>131</sup> The wild rice (manoomin) spoke to Nenaboozhoo, a prominent figure in Anishinaabeg stories and traditions, when he sought food to tell him that they were edible. It is a staple of Anishinaabeg culture. In the Anishinaabeg migration story, they were told to settle where food grew on the water. For the Anishinaabeg, plant-life is not mechanical, as Francis Bacon dictated, nor is it so separate from human beings as the “natural hierarchy” of parts of western tradition would suggest.<sup>132</sup> “Native American teachings describe the relations all around—animals, fish, trees, and rocks—as our brothers,

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<sup>130</sup> “In the 2005 legislative session, the Minnesota Senate tabled S.F. 1566, a version of the “wild rice bill” that prohibited the release and sale of genetically engineered wild rice in Minnesota.16 The 2006 bill, H.F. 3915, emerged, in part, after discussions between interested parties.17 H.F. 3915, titled, “A Bill for an Act Relating to Agriculture; Providing for a Wild Rice Study,” was heard in the House Agriculture, Rural Economies, and Veterans Affairs Committee; the bill passed through the House, but it did not reach the Senate.18 In 2007, Senate File 2096, an Omnibus Environment, Natural Resources, and Energy Appropriations bill, contained language regulating the release of genetically engineered wild rice; the bill passed the House and Senate and was signed by Governor Pawlenty on May 8, 2007.” See Walker 5.

<sup>131</sup> LaDuke, Winona. *All Our Relations: Native Struggles for Land and Life*. South End Press. 1999. 115.

<sup>132</sup> Ingersiep. 5.

sisters, uncles, and grandpas.”<sup>133</sup> The issue of wild rice is specific to North America, explains Dr. Rachel Durkee Walker of the University of Minnesota, “Minnesota’s situation, however, is not unique to the extent that it shares in common with other states’ discussions stemming from larger debates over the regulation of crop biotechnology.”<sup>134</sup> Currently, Anishinaabeg non-profit organizations like Protect Our Manoomin are seeking literal rights for wild rice, incorporating their own world-view with the western technical language of rights.

### Sentience and Science

As mentioned, Jeremy Bentham and Peter Singer as well use utilitarianism to argue for Animal Rights. This essay has proposed that if we can extend rights to animals, we ought in many ways to consider the rights of plants. Yet historically utilitarianism is not so friendly a tool towards plants. If its goal is to achieve the greatest good for the greatest number, then the good of some may be jeopardized for the many. Furthermore, although Singer and Bentham are able to understand that animals suffer and should therefore have rights, not only do they draw the line at plants, they also admit that human life is generally more valuable than non-human life. Their argument is merely that non-human life should be given consideration, when possible.<sup>135</sup> Singer and utilitarianism can only help insofar as an organism can be proven sentient. Evidence for sentience, as Laurence H. Tribe admits, may be a window to increased moral and legal consideration of plants. In fact, there is research to suggest that plants *are* sentient. This is important, for as Tribe points out in “Ways Not To Think About Plastic Trees”, “research

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<sup>133</sup> LaDuke 2.

<sup>134</sup> Walker, Rachel Durkee and Doerfler, Jill. “Wild Rice: The Minnesota Legislature, A Distinctive Crop, GMOs, and Ojibwe Perspectives.” University of Minnesota. From the Selected Works of Rachel Durkee Walker, Water Resources Environmental Science PHD. Hamline Law Review. 2008. 502.

<sup>135</sup> Johnson 340. Also, quoting Singer: “Suppose that we apply the test of imagining living the life of the weed I am about to pull out of my garden. I then have to imagine living a life with no conscious experiences at all. Such a life is a complete blank: I would not in the least regret the shortening of this subjectively barren form of existence. This test suggests, therefore, that the life of a being that has no conscious experiences is of no intrinsic value.”

indicating that plants display physiological reactions analogous to the "pain" reactions of animals would provide a theoretical basis for extending Bentham's theory to the plant kingdom."<sup>136</sup> Darwin in the late 1800s studied the reactions of touch sensitive plants like *Mimosa pudica* as well as plant's ability to move according to the sun ('phototropism'). In 1880 after extensive study Darwin published *The Power of Movement in Plants*. Darwin's work indicated clearly that plants exhibit a multitude of responses to their environment.<sup>137</sup> In 1900, a small number of scientists attempted to go further, suggesting plants' ability to communicate, and even to feel pain.<sup>138</sup> However, these experiments were not regarded as highly as Darwin's work.<sup>139</sup> In 2003 Anthony Trewavas, a cell biologist at the University of Edinburgh, published a 20 page scientific article titled "Aspects of Plant Intelligence" which summarizes the current scientific position. In this article, Trewavas presents scientific examples of reactions in plants that fit definitions of intelligence. Says Trewavas in his abstract:

"Intelligence is not a term commonly used when plants are discussed. However, I believe that this is an omission based not on a true assessment of the ability of plants to compute complex aspects of their environment, but solely a reflection of a sessile lifestyle. . . To commence use of the term intelligence with regard to plant behavior will lead to a better understanding of the

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<sup>136</sup> Tribe. Also, consider the idea of a "Sentience Quotient," proposed by Robert A. Freitas Jr. in the 1970s to describe information processing rates for both living organisms and technology. See Freitas, Robert A. Jr., "Analog Science Fiction/Science Fact." *Xenopsychology*. 1984. Vol. 104. 41-53

<sup>137</sup> Many individual plants were also killed in the process: "I think we have proved that the sleep of plants is to lessen the injury to the leaves from radiation. This has interested me much, and has cost us great labour, as it has been a problem since the time of Linnæus. But we have killed or badly injured a multitude of plants: N.B.—*Oxalis carnosa* was most valuable, but last night was killed."

<sup>138</sup> Physicist and botanist Sir Jagdish Chandra Bose, who contributed valuably to plant physiology studies, in 1900 proposed that plants vibrate differently depending on their treatment. More importantly, and more scientifically accepted, he demonstrated the reaction of plants to outside stimuli. He invented the Crescograph, which measures plant growth rates under different stimuli, which was similar to animal cell responses. Oddly enough, his research prompted CIA Specialist Cleve Backster in 1966 to suggest that when plants are attached to lie detectors, they exhibit emotion responses to outside stimuli. In 1975 K.A. Horowitz et al. published a paper titled "Plant 'Primary Perception': Electrophysiological Unresponsiveness to Brine Shrimp Killing", refuting Backster's suggestions that plants could perceive the fear or pain of other organisms. Since that time, plant physiologists like Trewavas have indeed shown that plants respond to outside stimuli through complex chemical pathways. See Horowitz, K.A., Lewis, D.C, and Gasteiger, E.L. "Plant 'Primary Perception': Electrophysiological Unresponsiveness to Brine Shrimp Killing." *Science, New Series*,. 1975. Vol. 189, No. 4201. 78-480

<sup>139</sup> Many of these experiments, like Cleve Backster's, were regarded as ridiculous, and some of them in their presentation do border on slightly more fantastical than scientific mostly because they approach plant perception from a human perspective as opposed to considering plants as sentient in their own way.

complexity of plant signal transduction and the discrimination and sensitivity with which plants construct images of their environment. . .”

To be clear, Trewavas does not go so far as to say that plants and humans are of equal intelligence. Yet he is at least willing to admit that intelligence is not an evolutionary strategy unique to *Homo sapiens*.<sup>140</sup> Trewavas reveals that, evolutionarily, the strategy of plants is one that rejected movement in favor of collecting energy through photosynthesis via readily available sunlight. Although plants do indeed move, that movement is on a much slower time scale than animals and so we do not perceive an individual plant’s progression movement unless it is as obvious as the touch-sensitive *Mimosa pudica* or the Venus fly-trap.<sup>141</sup> Nonetheless, the roots of trees can crack concrete or stone. Creeping vines will climb walls and trellises, leaves will follow the sun (‘phototropism’), and blossoms will open and close with the time of day. Those who have spent enough time observing plants take notice. Plants, however, do not *rely* on their ability to move, at least not to move particularly quickly.<sup>142</sup> Animals do. “Once animals started to prey upon each other, the development of highly differentiated sensory systems and specialized nerve cells to convey information rapidly between sensory tissues. . . was an inevitable consequence.” The predator-prey relationship has accelerated this evolutionary process.<sup>143</sup> But movement alone is not necessarily intelligence, as Trewavas realizes, and while there are many definitions of intelligence, Trewavas follows a basic one: Stenhouse’s 1974 description of intelligence as “adaptively variable behavior within the lifetime of the individual.” Trewavas proceeds that, as behavior for plants is defined as “the response to internal and external signals” such as expressed in flowering, germination, regeneration, etc., then the definition of intelligence that we must

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<sup>140</sup> Trewavas, Anthony. “Aspects of Plant Intelligence.” *Annals of Botany*. 2003. 92. 1-20.

<sup>141</sup> “Whereas human beings operate in seconds, plants usually operate in weeks and months. Even though bamboo can grow a centimeter an hour, without some sort of recording device it would be extremely difficult for any human to observe this phenomenon.” Trewavas, Anthony.

<sup>142</sup> Except maybe bladderworts, flytraps, and other electrical signal/trigger using carnivorous plant species.

<sup>143</sup> Ibid.

apply to plants is as follows: “adaptively variable growth and development during the lifetime of the individual.” While it might be objected that if we use such a definition of intelligence, then the growth and division of cells in animals is also an expression of intelligence. But as Trewavas realizes, the growth of a plant and the growth of an animal are not the same. Plants are modular, and animals are (generally) unitary. This is, a limb might be severed from a plant, and it will likely survive and regrow. If a limb—or more dramatically, a torso, or vital organ—is severed on an animal, the animal is likely to die. It cannot regenerate itself as dramatically as can the plant.<sup>144</sup> Plants, through their growth, must use intelligence to adapt to their environments. They are not able to pick-up and move should their environment prove “sub-optimal.” Those plants which are able to survive must utilize intelligent growth strategies. As Trewavas shows, this is often the case. The article describes scientifically observed aspects “such as learning, memory, individuality and plasticity” as well as exploratory behavior in plants. To give just a few examples, plants are able to detect up from down and react accordingly, plants are able to sense and map their surroundings through pH, microbial bacteria, chemicals, temperature, and water availability. Rhizomes in one experiment even “veered away from patches of grass and thus obvious competition. Intentional choice of habitat is clear.” In fact, in 1880 as a result of his extensive research of plants, Darwin himself noted the functional similarity of plant roots to the spinal cord of animals: ‘. . .the tip of the root acts like the brain of one of the lower animals, the brain being seated within the anterior end of the body receiving impressions from the sense organs and directing the several movements.’<sup>145</sup> As Trewavas argues, most plants are truly reacting to their environments, and making *intelligent* (that is, adaptively variable behavior)

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<sup>144</sup> Certainly there are, for example, worms or lizards that can do so to an extent.

<sup>145</sup> Darwin, Charles. *The Power of Movement in Plants* (1880). Cambridge University Press. 2009. quoted in Trewavas, Anthony. “Response to Alpi et al.: Plant neurobiology – all metaphors have value” *Trends in Plant Science*. Vol.12 No.6

decisions in directing their growth. Trewavas is well aware of the criticisms that his article may receive, and counters them scientifically and effectively. “The major problem,” he admits, is not one of science or evidence, but rather “a mind-set, common in plant scientists, that regards plants basically as automatons.” Just as animals were regarded by Descartes, so too are plants now regarded by many plant scientists, and certainly by society in general<sup>146</sup>. Following Trewavas, if we are to speak of sentience in animals, we must be willing to examine sentience in plants. Plants, he supports, clearly have an interest in living, for they grow. If they did not, they would not persist. Furthermore, if we are to draw lines at levels of awareness and rationality, as Singer suggests, then there are numerous plants that act with more awareness and rationality than the average *Homo sapien*.<sup>147</sup>

If we are to use sentience and intelligence as a measuring stick for dealing out rights, even disregarding the incongruities for the infant or mentally incapacitated human individual, there are scholars and biologists that suggest we should be prepared to consider a broader range of experiences. They question whether intelligence, sentience, and experience are so concrete, or if they are not more fluid. Their main problem is outlaid as follows: why should we, as organisms that have only experienced *human* intelligence, assume that other organisms do not have their own forms of intelligence, tailored to their own uses? We should not be as hasty as Singer to assume, moreover, that the experiences of other lifeforms are any less meaningful to them, just

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<sup>146</sup> Trewavas. “Do plants exhibit intelligent behavior? The use of the term ‘vegetable’ to describe unthinking or brain-dead human beings perhaps indicates the general attitude.”

<sup>147</sup> Edward Johnson shows that Singer’s argument that “the typical human life is more important than the typical nonhuman life” comes from his statement that “It is not arbitrary to hold that the life of a self-aware being, capable of abstract thought, of planning for the future, of complex acts of communication, and so on, is more valuable than the life of a being without these capacities.” Singer, Peter. *Animal Liberation*. New York: New York Review/Random House. 1975. 23. He goes on. “In general it does seem that the more highly developed the conscious life of the being, the greater the degree of self-awareness and rationality, the more one would prefer that kind of life, if one were choosing between it and a being at a lower level of awareness.” Singer, Peter. *Practical Ethics*. Cambridge, England: Cambridge University Press. 1979. 90. Also, as Trewavas has shown, plants *can* and *do* plan for the future and communicate, even if they do not use neurons, nerves, and brains to formulate strictly human “abstract thought.” For more, see Trewavas’ ‘Mindless Mastery.’ 2002.



because their methods of perception are different from our own. A recent article by Sy Montgomery broaches just such a topic with regard to octopi. As the article reveals, octopi are slowly gaining recognition for their intelligence. Many are able to perform incredible feats, such as opening jars, eluding their keepers, and solving puzzles. Their intelligence, likely, evolved for reasons completely different from our own. As Montgomery explains, human intelligence may be tailored towards our social living or towards our relative longevity. Octopi are neither social nor long-lived, yet they are clearly intelligent.<sup>148</sup>

Explains Mather, one of the main researchers and an author on octopus intelligence: “the octopus is actively discovering his environment, not waiting for it to hit him. The animal makes the decision to go out and get information, figures out how to get the information, gathers it, uses it, stores it. This has a great deal to do with consciousness.” Therefore, although the consciousness and intelligence of the octopus is not like our own, it is consciousness nonetheless, and no less useful in fulfilling the purposes for which it arose evolutionarily. Montgomery quotes a philosopher on the topic. “Octopuses,” writes Godfrey-Smith, “are a separate experiment in the evolution of the mind.” Plants, too, are a separate experiment in the evolution of the mind—a mind that is radically different from humans in that it is not a brain with neurons, but a form of consciousness and a strategy for survival called “life”.<sup>149</sup> Continues Mather: ““I

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<sup>148</sup> “One octopus Mather was watching had just returned home and was cleaning the front of the den with its arms. Then, suddenly, it left the den, crawled a meter away, picked up one particular rock and placed the rock in front of the den. Two minutes later, the octopus ventured forth to select a second rock. Then it chose a third. Attaching suckers to all the rocks, the octopus carried the load home, slid through the den opening, and carefully arranged the three objects in front. Then it went to sleep. What the octopus was thinking seemed obvious: “Three rocks are enough. Good night!” The scene has stayed with Mather. The octopus “must have had some concept,” she said, “of what it wanted to make itself feel safe enough to go to sleep.” And the octopus knew how to get what it wanted: by employing foresight, planning—and perhaps even tool use. Mather is the lead author of *Octopus: The Ocean’s Intelligent Invertebrate*, which includes observations of octopuses who dismantle Lego sets and open screw-top jars.” Montgomery, Sy. “Deep Intellect: Inside the Mind of the Octopus.” *Orion Magazine*. Dec. 2011.

<sup>149</sup> “...The mind, perhaps: different from the rest of nature, but different as a man’s brain is from his lungs.” Stone. 52.

think consciousness comes in different flavors. Some may have consciousness in a way we may not be able to imagine.” The argument is of Laurence Tribe remains comes to mind: currently, we are not able to imagine the consciousness of a plant, but that does not mean that it does not exist. As Tribe upholds, this does not mean that as a society we cannot choose to value plant life through protecting it in law.

However, this essay argues from historical basis that sentient or not, there is evidence within western thought which supports that all organisms--and perhaps all matter--need be treated with respect and compassion. From the arguments of the Transcendentalists to the arguments of environmentalists in the 1970s and today, there exists western philosophy that might guide society toward be regarding plant-life with respect and compassion. Thus, the Swiss Constitution requirement that experiments, if necessary, should be performed efficiently, ethically and respectfully is not so much ridiculous as an acknowledgement of evolving human judgment based on a long-standing historical conversation. Says Tribe, “Acceptance of the notion that some previously "right-less" entity enjoys legal protection is largely a matter of acculturation.”<sup>150</sup> The development of rights proves the case for human beings, and the Animal Welfare Act along with the Endangered Species Act show that in the United States, society is not wholly unwilling to uphold their moral obligations to non-human organisms. Internationally, the incorporation of ecocentrism into the Ecuador constitution, as well as the work of the Swiss constitution panel indicates that the historical conversation is beginning to emerge as legitimate discussion. Works like *Plants as Persons; A Philosophical Botany* by Michael Hall in 2011 indicate that the conversation is one that is gaining momentum. Although, based on the arguments contained within this investigation, a society shift in general may be required to fully address human usage

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<sup>150</sup> Tribe. “Plastic Trees.”

and interaction with plant-life, the language of rights and the language of law can do much to bring about societal change.

“In a system which spoke of the environment “having legal rights,” judges would, I suspect, be inclined to interpret rules such as those of burden of proof far more liberally from the point of the environment. If my sense of these influences is correct, then a society in which it is stated, however vaguely, that “rivers have legal rights” would evolve a different legal system than one which did not employ that expression....”<sup>151</sup>

A strong base of scholars argue that this is the case for plant-life as much as for the environment. The changing philosophies within history towards plant-life, outlined within this essay, may allow western thought not only to address the legitimate call for plant rights and moral consideration with an open-mind, but also to reflect upon its own practices and actively seek revision from within. Concludes Christopher Stone, “the Court may be at its best not in its work of handing down decrees, but at the very task that is called for: of summoning up from the human spirit the kindest and most generous and worthy ideas that abound there, giving them shape and reality and legitimacy.”<sup>152</sup> The ideas supporting rights for plant-life do indeed abound within the western tradition, although they have been shrouded in otherwise destructive thoughts

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<sup>151</sup> Stone 42. Full quote: “In a system which spoke of the environment “having legal rights,” judges would, I suspect, be inclined to interpret rules such as those of burden of proof far more liberally from the point of the environment. There is, too, the fact that the vocabulary and expressions that are available to us influence and even steer our thought. Consider the effect that was had by introducing into the law terms like “motive,” “intent,” and “due process.” These terms work a subtle shift into the rhetoric of explanation available to judges; with them, new ways of thinking and new insights come to be explored and developed. In such fashion, judges who could unabashedly refer to the “legal rights of the environment” would be encouraged to develop a viable body of law--in part simply through the availability and force of the expression. Besides such a manner of speaking by courts would contribute to popular notions, and a society that spoke of “legal rights of the environment” could be inclined to legislate more environment-protecting rules by formal enactment. If my sense of these influences is correct, then a society in which it is stated, however vaguely, that “rivers have legal rights” would evolve a different legal system than one which did not employ that expression, even if the two of them had, at the start, the very same “legal rules” in other respects.”

<sup>152</sup> Stone, 53. “The problems we have to confront are increasingly the world-wide crises of a global organism: not pollution of a stream, but pollution of the atmosphere and of the ocean. Increasingly, the death that occupies each human’s imagination is not his own, but that of the entire life cycle of the planet earth, to which each of us is a but a cell to a body. To shift from such a lofty fancy as the linearization of consciousness to the operation of our municipal legal system is to come down to earth hard. Before the forces that are at work, our highest court is but a frail and feeble--a distinctly human--institution. Yet, the Court may be at its best not in its work of handing down decrees, but at the very task that is called for: of summoning up from the human spirit the kindest and most generous and worthy ideas that abound there, giving them shape and reality and legitimacy.”

and practices. Based on western tradition's own historical conversation, plant-rights within a western framework are anything but absurd; they appear, in fact, to be necessary.

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