

# VAST

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Values  
and  
Science/  
Technology

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*Essays 2000*

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## Preface

You hold in your hand the second volume of *VAST Essays*, an annual collection of some of the best essays produced by students in the VAST (Values and Science/Technology) Program at Lafayette College during spring semester, 1999. All students at Lafayette take a VAST course during their sophomore year as part of their four-year writing requirement, and professors of VAST courses range across the College's four divisions: Arts and Humanities, Social Sciences, Natural Sciences, and Engineering. As detailed in the Appendix, "What is a VAST course?", the goal of each course in the program is to gather students from a variety of majors around a problem too large for any single discipline to address fully, guided by the specialized knowledge and intellectual curiosity of the professor. As a representative sampling, the essays in this volume are drawn from courses on environmental studies, AIDS, ancient New World technologies, and the "science wars."

The opening two essays explore ways in which science and values can be integrated in grappling with real-life problems. In the first, Jessika Luth argues for the central role of science in finding solutions to a problem some say science has created: environmental pollution. Cheryl Mascitelli, by contrast, offers ethical criteria by which to judge a social-scientific problem: whether testing pregnant women for AIDS should be voluntary or mandatory. In the third essay, Robert Schweder thinks experientially through an apparently simple technological problem, discovering hitherto unsuspected complexities. Technology is revealed to be essential to constructing society—and to realizing a sense of beauty, as well. The current debate between realism and constructivism is joined by Matthew Coble, in an essay which offers a strong defense of constructivism as a position deserving further exploration. Finally, Caitlin Gray ends with her own impassioned plea, in the voice of a radical environmentalist, for direct environmental action in our daily lives. Our five essays this year show students experimenting with a range of positions and, in doing so, discovering the means and pleasures of intellectual and moral commitment.

I would like once again to offer my deep thanks to Patricia Donahue, Associate Professor of English and Director of the College Writing Program, for her help in editing these essays for publication; and to Tom Yuster, Associate Professor of Mathematics and Co-Coordinator of the VAST Program, and to Dan Barber, Assistant Professor of Chemistry, for their help in selecting, out of many fine submissions, the

five essays reproduced here. Above all, thanks to all the students and their professors who contributed to this volume by submitting essays to our ongoing competition. I believe the essays offered here demonstrate the goals of the VAST Program better than any description, and I hope they inspire students in the year 2000 to write with passion, commitment, and intellectual depth.

--Laura Dassow Walls

Associate Professor of English and Co-Coordinator of VAST



## Science At the Wheel: Driving into the Future of the Environmental Movement

Jessika Luth

Science has been able to approximate that the human race has existed for only 400,000 years on this 4.56 billion year old planet. Yet in its brief history humanity has had a far greater impact than any other species. Since the dawn of the industrial revolution, the rate and complexity of this impact has only increased. With such profound influence on our environment must come greater responsibility. Scientists, as the leading explorers in this new age of technology, share an important part of this responsibility. Their innovations have shaped the world into what it is today, and it is their research that will be the foundation for tomorrow. Science provides the vehicle that will drive society into the future. Science explores, observes, and explains the world around us. It both finds and attempts to solve problems with the ultimate goal of benefiting society. The health of the environment is increasingly associated with the well-being of society. Therefore, the problems of industrial and agricultural pollution have to be a priority for the scientist. Science has played a major role in creating this modern problem and therefore must now take the lead in solving it.

Having identified the pollution problem initially, scientists more fully understand the extent and severity of this problem. The correlation between cancer and pesticides was identified and continues to be studied by biologists and physicians. It is chemists who have been called to classify the 20,000 Superfund sites and to report on toxic chemicals seeping into homes, schools, and drinking water. Scientists, in general, have studied and stressed the importance of ecosystem diversity. Pollution is affecting this diversity as well as human health, the economy, social justice, and national security.<sup>1</sup> As scientists hold the key to this wealth of information, we need to act upon it in an ethical manner, communicate it to the public so that they can do the same, and search for practical solutions.

Scientists can respond to the challenges of preserving and restoring the environment like no other group can. Scientists have the knowledge to interpret the facts. It is this convincing hard data that other environmental advocates lack. Grassroots groups are a good example. Some community-organized groups, like the one led by Lois Gibbs in Love Canal, have been successful in making the government

and industry respond to their specific needs.<sup>2</sup> The most successful groups have been the ones that gathered the scientific reports and raised money for more research. With thousands of small groups seeking attention across the country, it is those which have evidence to support their arguments that are winning the attention of politicians and forcing industry to take action. Science can lend credibility to their struggles and to the environmental movement as a whole. Without scientific support, grassroots groups run the risk of being portrayed as selfish NIMBYS (Not In My Back Yard) protesting against something they know they don't want, but do not understand why. Grassroot movements supported by science are effective within the local environment, but they can also be sabotaged by industry. Industry has the money and power to sue these groups, and these groups often do not have the resources to fight back.<sup>3</sup> Additionally, industry also uses grassroots tactics in organizing its own anti-environmental legislation lobby groups. Groups like "People for the West" or the "National Wetland Coalition" hide industrial agendas behind ambiguous environmental names.<sup>4</sup> With thousands of grassroots groups in existence, separating the good from the bad can be a formidable task.

These impostor grassroots groups are an example of industrial greenwashing by which an industry that is actually harming the environment conceals its true motives. It is this tactic that is the biggest obstacle to a green economy. Green capitalism is another proposed method of solving environmental problems through the creation of an economy, by private consumers and companies, that is based on environmentally friendly goods and services. In a capitalistic society instilled with environmental values this can theoretically be an effective method.<sup>5</sup> However, science again plays a fundamental role in this approach. For in order to be successful green capitalism requires knowledgeable green consumers. Science provides the resources for educating consumers to distinguish between genuinely green industries and greenwashing.

Science is clearly important to the environmental movement and should be given priority in its leadership. Many critics would argue that science is the cause of pollution in the first place. In some ways, this is a valid criticism. Some scientists work for the huge corporations that introduce harmful chemicals into the environment. They do not understand the consequences of their own technology. It is clear that, in order to provide the leadership necessary in the environmental movement, the scientific community must first be united under a common environmental ethic. Scientist Jane Lubchenco suggests a "new social contract" to define the goals of scientific conservation and environmental research. This contract would extend the Hippocratic oath of "First do no harm" to all scientists. Scientist Carl Safina affirms this need for a social contract, asserting that "academics with relevant expertise have a professional—

<sup>2</sup> Mary Joy Breton. *Women Pioneers for the Environment*. (Northeastern University Press, August 1998) 116-25.

<sup>3</sup> Wendy Solomon. "Horsehead subpoenas termed typical tactic." *Allentown Morning Call* (March 31, 1998).

<sup>4</sup> David Helvarg. "The big green spin machine." *The Amicus Journal*. (Summer 1996) 19.

<sup>5</sup> William K. Reilly. "The Green Thumb of Capitalism." *Playboy Magazine* (March 1971).

<sup>1</sup> Jane Lubchenco. "Entering the Century of the Environment: A New Social Contract for Science." *Science* Vol. 279 (23 January 1998) 491.



and personal—obligation not to assume that some other responsible party will figure out how to preserve the resources on which we and future generations must depend.<sup>6</sup> Likewise, the secretary-general of the Earth Summit in 1992, Maurice Strong, emphasized the need for science to "develop a code of environmental and development conduct, readily accessible to the public, so that its guiding principles are transparent and the scientific community itself is accountable to other sectors of society."<sup>7</sup> In addition to studying science, students should not leave a university without understanding how their technology will impact the environment.

Many scientists have been instrumental in identifying many environmental problems. Scientific studies have stressed the importance of biodiversity and the danger of polluting the air, water, and land. Now it is time for scientists to take a more active role in finding solutions to these problems. Just what is that role? Lubchenco explains: "Science does not provide the solutions, but it can help understand the consequences of different choices."<sup>8</sup> To do this, scientists must be open about their research. Effective communication of research is necessary so that it can be used by fellow scientists in different fields, by policy makers, and by the general public. Lubchenco argues that "scientific knowledge is urgently needed to provide the understanding for individuals to make informed policy and management decisions and to provide the basis for new technologies."

In conveying information, science evaluates what are the most urgent needs of the environment.<sup>9</sup> To ensure that action is taken, however, scientists must work together to compile their data. For example, there have been numerous studies on pesticides as detrimental to human health, but more extensive data is not available to further substantiate these reports. California is the only state that has made it mandatory to report pesticide-related illnesses. However, because this system of reporting is carried out through worker's compensation, even this data can underestimate the true scope of this problem.<sup>10</sup> Scientists have been doing environmental research but that alone cannot solve the problems of pesticide damage unless scientists communicate with each other to correlate their research and then convey their findings to the public.

But it is not enough for scientists to present their research: they must also stand by it. Safina warns that in science "the distinction between objectivity and apathy was often lost."<sup>11</sup> As in any profession, the most passionate advocates are often the most successful. The most inspired scientists are those who believe that their work benefits humanity. The most striking example of this passion is Rachel Carson in her scientific crusade against pesticides. In *Silent Spring*, she raised public awareness that in turn

launched new policies toward pesticide pollution. As a result, DDT and other chemicals were banned. Rachel Carson took it upon herself to educate the public, forcing people to address the problems of pesticide use.

Another method of addressing environmental problems is for scientists who work within the industries to report on their unethical practices. Scientists must serve as whistleblowers. Many medical professionals have expanded their oath of "first, do no harm" to include the environmental ethic. Physicians for Social Responsibility is a group that has encouraged medical professionals to become activists—beginning with their own workplace. They have identified the problem of incineration of medical waste as a major source of dioxin and mercury toxicity which threatens public health. They have organized nationwide campaigns to eliminate pollution in health care settings and have supported the development of environmentally safe medical technology and practices.<sup>12</sup> Here is an example of scientists communicating across specialized fields, identifying a problem, and then acting upon it.

In addition to the roles of leader, organizer, and informer, scientists are the researchers who will provide the technology to make solutions feasible. Scientists need to continue to study methods of cleaning toxic wastes in an environmentally sound manner. They have done so by developing bioremediation and phytoremediation. Now oil-eating bacteria can be used to clean oil and other organic wastes. This technique was successful in cleaning up the beaches of Prince William Sound after the catastrophic Exxon *Valdez* Spill. It involved first using advanced detergents to break down the oil, then spraying the beaches with nitrogen and phosphorous fertilizer in which to grow oil eating microbes.<sup>13</sup> Microorganisms have also been found useful in combating the foul-smelling, possibly carcinogenic fuel additive, MTBE, that perpetually pollutes groundwater.<sup>14</sup>

Phytoremediation is another environmentally compatible, economically feasible solution for cleaning toxins. Scientists have found poplar trees to be effective in this process. The tree metabolizes the chemicals into less volatile compounds, then releases these byproducts through its leaves into the atmosphere. A hybrid poplar developed at the University of Georgia has been shown to absorb a variety of substances from heavy metals found in industrial wastes to weed killer chemicals from agricultural wastes. The poplar phytoremediation technique is now being implemented in Oregon to clean up TCE still permeating the soil after a truck skidded spilling hundreds of gallons of the suspected carcinogen in 1984.<sup>15</sup>

on pesticides in the future. Scientists have a responsibility to act upon that information. Their leadership is imperative to ensure that the public has the resources and the knowledge

<sup>6</sup> Carl Safina. "To Save the Earth, Scientists Should Join Policy Debates." *The Chronicle of Higher Education*. (6 November 1998) A80.

<sup>7</sup> Fred Pearce. "New Scientists Needed to Save the Earth." *New Scientist* (7 December 1991) 17.

<sup>8</sup> Lubchenco 495.

<sup>9</sup> Lubchenco 496.

<sup>10</sup> Marion Moses, M.D. "Pesticide-Related Health Problems and Farmworkers." *American Association of Occupational Health Nurses Journal*. Vol. 37 (March 1989) 115-26.

<sup>11</sup> Safina.

<sup>12</sup> Physicians for Social Responsibility homepage. <http://www.psr.org/hcwh.htm> Providing a PSR guide for health care without harm. Described campaign of physicians to eliminate medical waste incineration and dioxin.

<sup>13</sup> Michael Stachell and Betsy Carpenter, "The Disaster That Wasn't." *US News and World Report* (18 December 1989) 68.

<sup>14</sup> Mary Parlange. "A Taste for Waste." *New Scientist*. (19 December 1998) 18.

<sup>15</sup> Joseph Verrengia. "Weapons against pollution? Poplar trees drink up toxins." *Seattle Times*. (30 September 1998) [http://www.seattletimes.com/news/nation-world/html98/altopopl\\_093098.html](http://www.seattletimes.com/news/nation-world/html98/altopopl_093098.html). *Seattle Times* webpage.



In addition to cleaning up the pollution that already exists, scientists are also designing new methods to reduce pollution in the future. In Beltsville, an experimental farm right outside Washington, D.C., 450 Ph.D.s are working on problems of this sort in over 50 laboratories. Kevin Morris is conducting research in one of them to develop a more environmentally friendly grass that will reduce the need for pesticides. He has experimented with dozens of different grasses to find the one that would fit society's standards while doing less damage to the environment. He knows the ideal of a plush, green, weed-free lawn and the difficulty in attaining it. "A lawn is a real curse for most people," he explains, as well as to the environment.<sup>16</sup> Few people realize the far-reaching consequences of watering, cutting, and spraying chemicals on the 50,000 square miles of lawns in the United States.

Morris's research could ease those effects. He has experimented with about 400 different varieties of grass seed sold in the U.S. He rated each variety on its color, density, insect resistance, susceptibility to disease, maintenance requirements, drought tolerance, and ability to sustain heavy foot traffic. He found that zoysia required less water and chemicals and that its thick mat stood up well against heavy traffic. However, it also turns yellow in the cold. Morris combined zoysia with fescue grass, which will provide green cover after the zoysia has turned yellow. His experiment is currently surviving the ultimate test on the mall in Washington, DC, where it has been growing since 1988.<sup>17</sup>

Clearly, genetic science can also be a key for breaking our dependence on chemicals. Learning how species of plants and their genes work within nature can help us create compatible blends and hybrids like that created by Morris. If guided properly, genetic technology can develop a sophisticated organic-based agricultural system that will decrease the need for pesticides and herbicides.<sup>18</sup> The emphasis needs to be put on nature as the source of inspiration for future technology.

While it may be the scientists' role to lead, educate, and study, it is the people in a democratic society who ultimately make the decisions. It is contingent upon the public to change the environment to reflect their own values. Scientists are already working on behalf of the environment, identifying and addressing local sources of pollution, such as medical incinerators, and developing technologies like bioremediation and phytoremediation to clean up industrial pollution. Scientists are developing the technology to make society more compatible with the environment and less dependent on pesticides in the future. Scientists have a unique insight into the complexities of this problem, and they have a social responsibility to act upon that information. Their leadership is imperative to ensure that the public has the resources and the knowledge to make intelligent decisions regarding the future of this planet.

<sup>16</sup> Larry Van Dyne. "Thanks God for the Country Boys; Ten Miles from the White House, Government Scientists Are Working to Bring You a Greener Lawn, Juicier Peaches, Leaner Pork, and Other Wonders." Washingtonian (August 1992).

<sup>17</sup> Van Dyne.

<sup>18</sup> Jeremy Rifkin. "Apocalypse When?" New Scientist. (31 October 1998) 34.

## Works Cited

- Breton, Mary Joy. Women Pioneers for the Environment. Northeastern University Press, August 1998.
- Helvarg, David. "The big green spin machine." The Amicus Journal. Summer 1996.
- Lubchenco, Jane. "Entering the Century of the Environment: A New Social Contract for Science." Science Vol. 279, 23 January 1998.
- Moses, Marion, M.D. "Pesticide-Related Health Problems and Farmworkers." American Association of Occupational Health Nurses Journal. Vol. 37, March 1989.
- Parlange, Mary. "A Taste for Waste." New Scientist. 19 December 1998.
- Pearce, Fred. "New Scientists Needed to Save the Earth." New Scientist. 7 December 1991.
- "Providing a PSR guide for health care without harm." Physicians for Social Responsibility homepage. <<http://www.psr.org/hcwh.htm>>.
- Rifkin, Jeremy. "Apocalypse When?" New Scientist. 31 October 1998.
- Safina, Carl. "To Save the Earth, Scientists Should Join Policy Debates." The Chronicle of Higher Education. 6 November 1998: A80.
- Satchell, Michael and Betsy Carpenter. "The Disaster That Wasn't." US News and World Report 18 September 1989: 60-69.
- Soloman, Wendy. "Horsehead subpoenas termed typical tactic." Allentown Morning Call. March 31, 1998.
- Van Dyne, Larry. "Thank God for the Country Boys; Ten Miles From the White House, Government Scientists Are Working to Bring You a Greener Lawn, Juicier Peaches, Leaner Pork, and Other Wonders." Washingtonian. August 1992.
- Verrengia, Joseph. "Weapons against pollution? Poplar trees drink up toxins." Seattle Times. (September 30, 1998) <[http://www.seattletimes.com/news/nation-world/html98/altopopl\\_093098.html](http://www.seattletimes.com/news/nation-world/html98/altopopl_093098.html)>. Seattle Times webpage.



## Voluntary AIDS Testing for Pregnant Women

*Cheryl Mascitelli*

During the past decade, the human immunodeficiency virus (HIV) has become a leading cause of mortality among women. This population is now accounting for the most rapid increase in cases of acquired immunodeficiency syndrome (AIDS) in recent years. As the numbers of cases of HIV infection have increased among women, particularly of childbearing age, increasing numbers of children have become infected as well. "Various studies conducted to date indicate that between 1/4 and 1/3 of infants born worldwide to women infected with HIV have become infected with the virus themselves" ("HIV and Infant Feeding"). This is due to the route of transmission known as vertical transmission, from mother to infant. Thus, HIV infection has now also become a leading cause of mortality among young children, and virtually all of these infections can be attributed to vertical transmission.

More than 4 million American women get pregnant each year, an estimated 8,000 of them HIV infected ("HIV test urged"). HIV can be transmitted from an infected woman to her unborn fetus or newborn during pregnancy, during labor and delivery, and even during the postpartum period via breastfeeding. "Reports show vertical transmission rates ranging from 13% to 40%" ("U.S. Public Health Recommendations"). This translates into approximately 1,000-2,000 HIV-infected infants being born each year in the United States. Although transmission of HIV to a fetus can occur as early as the second month of development, research suggests that at least one half of vertically transmitted infections from non-breastfeeding women occur shortly after or during the birth process ("PHS Guidelines").

Due to the seriousness of vertical transmission, there have been proposals made with the aim of screening pregnant women for HIV, specifically, proposals of mandatory testing for pregnant women (Hardy v). These proposals suggest that every woman seeking prenatal care—whether it be in a gynecologist's office, a health clinic, the hospital, etc.—should be tested for HIV. This testing should be done whether the woman agrees or not, and if she refuses, prenatal care would be withheld. The rationale behind such a proposal is that if HIV testing is mandated, all pregnant women will have to be tested in order to receive prenatal care. Those who are HIV positive would be treated with drugs that will decrease the likelihood of vertical transmission. Thus, through mandatory testing, the instances of vertical transmission would decrease.

Since mandatory testing of pregnant women infringes on the woman's liberty and her right of privacy, the issue is whether or not such a program is ethically justifiable despite these infringements. In order to examine mandatory testing of pregnant women as a potentially effective way to reduce vertical transmission, I plan to analyze this proposal using the five criteria Childress proposes in his article, "Mandatory HIV Screening and Testing," criteria that, he explains, must be met in order to justify infringement of a person's rights when conducting mandatory testing. These five criteria are effectiveness, proportionality, necessity, least infringement, and explanation and justification to the patient (Childress 53). The first three must be met in order to justify infringement at all. The last two that must be met once a mandatory testing program has passed the first three, and has been implemented. I am going to examine these conditions regarding rights infringement, and determine whether all five are met by the proposal for mandatory testing of pregnant women.

The first condition for justification of mandatory testing is effectiveness. This condition requires that a policy that infringes on the human rights of an individual must be effective in realizing an important goal, specifically the goal of protecting public health (Childress 54). Mandatory testing is without a doubt a way to test pregnant women for HIV. The important goal that mandatory testing would be striving for is the reduction in risk of transmission from the infected mother to her fetus.

Once a woman has been diagnosed as HIV positive, there are effective treatments that significantly reduce the risk of transmission from the mother to her baby. Research has shown that zidovudine, or AZT, reduces vertical transmission by as much as two-thirds in some infected women and their babies ("PHS Guidelines"). "Results from a multi-center, placebo-controlled clinical trial indicated that AZT administering to a selected group of HIV infected women during pregnancy reduced the risk of HIV transmission by approximately two-thirds: 25.5% of infants born to mothers in the placebo group were infected, compared with 8.3% of those born to mothers in the AZT group" ("PHS Guidelines").

This AZT treatment is a three-part regimen given antepartum (while the woman is carrying the fetus), intrapartum (during labor), and postpartum (for the first 6 weeks of life) ("Public Health Service Task Force"). Treatment recommendations for pregnant women infected with HIV are based on the belief that therapies should not be withheld during pregnancy if they benefit both the woman and the baby. When a pregnant woman is diagnosed as being HIV positive, she is encouraged to begin treatments. There are two reasons for which treatment is encouraged. One that I have already discussed is the reduction in risk of transmission to the unborn fetus. The second has not yet been mentioned, although it is the more obvious. Beginning treatments as early as possible not only benefits the unborn fetus, but also significantly slows the progression of the virus in the mother. Overall, early diagnosis enables women to seek and receive the care they need for themselves and reduces the chances of transmitting HIV to their infants.



Currently, there are no known long-term effects of AZT on the baby, and it has been proven to benefit the woman considerably, as indicated above. With this information, pregnant women should base their decisions about treatment as if they were not pregnant, with the additional consideration of the potential (but unknown) impact on the fetus ("Public Health Service Task Force"). Although AZT therapy is not 100% effective, and the long-term risks to both the mother and her child are not known, the dramatic reduction in HIV transmission proves that every HIV infected pregnant woman should be offered AZT therapy to reduce the risk of transmitting the virus to her unborn child ("Public Health Service Task Force"). AZT treatments reduce the risk of transmission by nearly 70%, an incredible reduction. Thus, mandatory testing meets the criteria of effectiveness.

The second condition that Childress proposes is proportionality. This condition requires that it be demonstrated that the proposed policy will produce positive benefits for the individual and society as a whole, and that these benefits will outweigh the negative effects of rights infringement or any other consequences (Childress 54).

The main goal of any testing is to reduce the spread of HIV to unborn fetuses and infants. In and of itself, mandatory testing of pregnant women will not help to reduce the spread of the HIV virus; therefore, something else must be done. The main goal of mandatory testing is to reduce the rate of HIV vertical transmission by determining a pregnant woman's HIV status as early in the pregnancy as possible. Although such testing will determine a pregnant woman's HIV status, it will do nothing to ensure that she will consent to treatment, and therefore will do nothing to ensure the reduction in risk. The only way to ensure that the woman will adhere to treatment is if it is mandated, which would be difficult or impossible to enforce.

Beyond the infringement on the woman's right of privacy, mandatory testing can also significantly reduce the number of women seeking prenatal care. The state of Illinois implemented mandatory premarital testing in 1988. Only 1 in 6,500 people were found to be HIV positive, but the number of couples seeking marriage licenses in the state decreased by 25% (Graubard 412). This concept can be applied to the mandatory testing of pregnant women. If women know that they are going to be required to take an HIV test and quite possibly be forced to undergo AZT therapy if they are HIV positive, and they are opposed to this, then they will avoid prenatal care completely, which will ultimately cause more health risks for the unborn fetuses.

In addition to the reduction of prenatal care, mandatory testing would also infringe on the physician-patient relationship. If a patient cannot trust and confide in her physician, then this essential relationship will break down.

Finally, common knowledge of a woman's HIV status can lead to many adverse reactions. "Reported rates of abandonment, loss of relationships, severe psychological reactions, and domestic violence have ranged from 4% to 13%. Providing infected women with or referring them to psychological, social, or legal services may help to

even minimize such potential risks and enable women to benefit from the many health advantages of early HIV diagnosis" ("PHS Guidelines").

However, testing for the HIV virus is essential in order to reduce the risks of vertical transmission. Knowledge of a pregnant woman's HIV status as early in the pregnancy is crucial to the outcome. In order for HIV infected women and their babies to benefit optimally from AZT and other medical treatments, it is important for women to know if they are HIV positive before or early in pregnancy ("PHS Guidelines").

The reduction of vertical transmission is more significant than an infringement of human rights or any other negative consequence that the pregnant woman might experience. I do not mean to imply that the infringement on the woman's rights is insignificant, or that it produces insignificant consequences, but compared to the astounding benefits of treatment, mandatory testing can be justified according to this criterion of proportionality.

Necessity is the third condition that must be met in order to justify mandatory testing. This condition requires that there be no other way to realize the desired goal that does not infringe upon the patient's rights (Childress 54). The HIV virus is one that results in death, and one for which there is no known cure. However, each HIV infection passes through certain stages, and although some patients progress through the stages differently, the result is ultimately death. Until a cure is found for this horrible virus, the only option that the medical profession can offer is to slow its natural progression through drugs. Obviously, this rigorous drug treatment is not given unless the patient has been diagnosed as being HIV positive. And the only way to determine HIV status is through testing.

Mandatory testing does indeed achieve the desired goal, which is to test pregnant women for HIV. However, it does not satisfy the second condition of this criterion because there exists another way to reach this goal that infringes less upon the patient's rights: voluntary testing.

Voluntary HIV testing is much different from mandatory testing. The only similarity is that each tests pregnant women for HIV. Mandatory testing requires that every woman seeking prenatal care be tested first. Voluntary testing offers a much different approach. It implies that when a woman seeks prenatal care, her physician encourages her to get tested. This process is actually a combined strategy of HIV counseling for all pregnant women and voluntary HIV testing. Voluntary testing means that after a woman receives appropriate counseling from her physician, she is able to make an informed decision about having a test for HIV ("PHS Guidelines"). Rather than forcing women to be tested, this procedure simply ensures informed choice. Studies show that when a physician talks with a pregnant woman about what the HIV test means for her and her baby, most women choose to be tested. "For example, in one inner-city hospital in Atlanta, Georgia, 96% of women chose to be tested after being provided HIV counseling and offered voluntary HIV testing as part of prenatal care" ("PHS Guidelines"). Offering all pregnant women voluntary testing



in the context of HIV counseling establishes the kind of trusting relationship between the woman and her physician that is essential for discussions about prenatal care and treatment options if she is indeed HIV positive. Therefore, it is believed that voluntary testing is more successful at achieving the goal of getting more pregnant women to get tested for HIV than mandatory testing. Thus, mandatory testing fails to meet the necessity criterion and cannot be justified ethically as a way to achieve the desired outcome.

The final two criteria are simply guidelines to be followed once a proposal has met the first three criteria. I have argued that mandatory testing is not ethically justifiable and that voluntary testing is therefore the best option. These last criteria are important to ensure the effectiveness of voluntary testing programs.

The fourth condition that must be met as follows. If it is absolutely necessary to infringe on the rights of individuals to achieve an important goal, then the plan which infringes the least must be chosen (Childress 55). I think that this condition is at the very core of the encouraged voluntary testing proposal. Women are strongly encouraged to get tested, but are always given the chance to refuse and yet still receive prenatal care. Due to the fact that testing is voluntary, the women are giving up as few rights as possible. Mandatory testing is a definite infringement on a pregnant woman's life. Voluntary testing is a way to reach the similar goal, and, in this case—to surpass it. As I stated earlier, more women have consented to testing when HIV counseling has proceeded their physician's encouragement. In order to infringe as little as possible on a woman's liberty and her right of privacy, confidentiality must be insured. Voluntary testing does not infringe on the rights of any pregnant women, as long as confidentiality is insured. This is a way of minimizing negative outcomes that might result from the knowledge of a woman's HIV status. A woman has the right to say no, and if she does consent to the test, the results will be kept confidential within the context of the physician-patient relationship.

Once patients have consented to voluntary testing, they can be diagnosed properly and treated accordingly. If the woman who has been diagnosed is pregnant, there is no other known way to reduce the risk of transmission unless her HIV status is determined and proper AZT treatments are followed. Thus, the importance of HIV testing of pregnant women is immeasurable.

Mandatory testing reduces the percentage of women who would ordinarily seek prenatal care, and also infringes on the physician-patient relationship. Voluntary testing has been shown not only to encourage women to consent to being tested, but to surpass the percentage of women who undergo mandatory testing. Therefore, the most effective way to accomplish these goals is through voluntary testing.

The last condition that Childress proposes consists of explanation and justification. This condition is also one that is to be met once a program has been implemented. It says that basic respect for patients requires that when their rights are infringed upon, they must be informed of that infringement and the reasons for it

completely explained (Childress 55). Voluntary testing meets this fifth and final condition better than mandatory testing. The main component of voluntary testing is not the actual administering of the HIV test, but rather the HIV counseling that precedes it.

Providing HIV counseling and then voluntary testing to women of childbearing age in gynecological settings, sexually transmitted disease clinics, family planning clinics, and so forth is crucial regardless of their HIV status. Counseling is not just for women who turn out to have HIV; it is the way in which doctors explain to the healthy woman how to remain that way. For women who are not infected, counseling acts as a precautionary measure, hopefully reducing their risk of becoming infected. Counseling for women who are already infected gives them the opportunity for early diagnosis and treatment, allowing them to make informed reproductive decisions in the future ("U.S. Public Health Recommendations").

Offering all women voluntary testing in the context of HIV counseling establishes a relationship of trust between a woman and her health care provider, which is essential for discussions about care and treatment options. Once a woman has been notified by her physician that she is indeed HIV positive, she will receive further counseling that will explain the treatment options available to help slow the progression of the virus and reduce the risk of transmission to her unborn fetus. This is a crucial aspect of the voluntary testing proposal. Voluntary testing also increases the number of women who will actually consent to the test. The physician should not influence discussions of treatment options. The final decision to accept or reject AZT treatment during pregnancy, or ever, should be the responsibility of the woman.

In regard to voluntary testing, there are a few guidelines that physicians should adhere to, even before knowing the HIV status of their patients. Physicians should ensure that all pregnant women are given HIV counseling and are encouraged to be tested for HIV infection, which will allow women to know their HIV status as early as possible. It is important that women are told before being encouraged to take an HIV test that if they do not consent, they will not be refused prenatal care, or be discriminated against in any way ("U.S. Public Health Recommendations"). Once women have been diagnosed as HIV positive, they should receive counseling which will educate them about the virus, the benefits of drug intervention, and the interaction between pregnancy and HIV infection. They should be provided with information concerning AZT therapy as an effective way of reducing the risk for vertical transmission. This information, like the initial HIV counseling, should be non-directive ("U.S. Public Health Recommendations").

Data from universal, routine HIV counseling and voluntary testing programs in several areas indicate that high test-acceptance levels can be achieved without mandating testing. Mandatory testing might even be counterproductive, increasing the potential for negative consequences of HIV testing and resulting in some women avoiding prenatal care altogether ("U.S. Public Health Recommendations"). But if



physicians act as facilitators who counsel pregnant women and then encourage them to be tested, the goal of reducing the risk of vertical transmission might be achieved, and with fewer negative consequences.

#### Works Cited

- Childress, James F. "Mandatory HIV Screening and Testing." *AIDS & Ethics*. Ed. Frederic G. Reamer. New York: Columbia UP, 1991: 50-77.
- Graubard, Stephen R. *Living with AIDS*. The MIT Press: Cambridge, MA, 1990.
- Hardy, Leslie M., ed. *HIV Screening of Pregnant Women and Newborns*. Washington, D.C.: National Academy Press, 1991.
- "HIV and Infant Feeding." UNAIDS. May 1997. <<http://www.hivinsite.ucsf.edu/topics/international/>>.
- "HIV test ordered for all pregnant women." *USA Today*. February 2, 1999. <<http://www.usatoday.com/life/health/aids/>>.
- Levine, Robert J. "AIDS and the Physician-Patient Relationship." *AIDS & Ethics*. Ed. Frederic G. Reamer. New York: Columbia UP, 1991: 188-214.
- "PHS Guidelines for HIV Counseling and Voluntary Testing for Pregnant Women." Factsheet Public Health Service. CDC. July 1995. <<http://www.hivinsite.ucsf.edu/topics/women/>>.
- "Public Health Service Task Force Recommendations for the Use of Antiretroviral Drugs in Pregnant Women Infected with HIV-1 for Maternal Health and for Reducing Perinatal HIV-1 Transmission in the United States." *MMWR Reports*, Vol. 47, January 30, 1998: No. RR-2. <<http://www.hivinsite.ucsf.edu/medical/>>.
- "US Public Health Recommendations for Human Immunodeficiency Virus Counseling and Voluntary Testing for Pregnant Women." US Department of Health & Human Services—Public Health Service. July 7, 1995. <<http://www.hivinsite.ucsf.edu/medical/>>.

## Beneficial Results of a Tactical Failure

Robert Schweder

When I first examined the assignment to build a clay pot, I decided that I would make some piece of pottery that I believed would have been useful to my ancestors. I wanted to make something simple, as I had no experience working with clay. I thought that a small bowl capable of holding a small amount of water would be my best bet. However, when I arrived at *Aura Ceramics* my intentions changed.

Once I sat down to make my pottery, I decided to make something I thought would have been useful to hunter-gatherer societies, to the individuals that first utilized pottery. I tried to imagine what sorts of vessels would have been a necessity to these people. I concluded that a larger container capable of carrying water over distances would have been more useful than a smaller bowl. I wanted to make a container large enough to transport water. It needed to be light enough to carry for long periods of time. And, it would have to be durable so as not to crack or spill water while being transported. With these thoughts in mind, I began molding my clay.

I started by making a fairly large basin that I estimated would have held just under a gallon of water. I figured that would have been sufficient for an individual's daily consumption. Next, I began condensing the top of the vessel into a small neck-like form in which something like a cork could be placed to prevent water from spilling out once inside the pottery. Finally, above the neck, I molded a funnel. The funnel would have made scooping and filling this container with water from an open source much easier.

Unfortunately, my creation did not survive the heating process, so I do not have a finished product to demonstrate. However, I can best describe the container as looking much like a spittoon with a smaller opening at the neck of the container. After observing the transitions which the pots my classmates made went through, I can conclude that my container would have been useful to early hunters and gatherers. After the pottery was processed in the kiln it weighed less than it had when the clay was wet. Judging the differential in these weights from the other students' creations, I believe my finished product, with the gallon of water it was meant to hold, would have weighed around ten pounds. At that weight, people could have certainly carried the container around all day without it being too burdensome. Probably something similar to my creation was utilized by these early societies. The difficulties I encountered in the heating process of my pottery allowed me to conceive of the problems early man must have faced. The firing of our clay was done in a kiln, and the temperature in the



kiln was constant and well regulated for our creations. These early civilizations must have had extreme difficulty in trying to manage the intensity of their fires and knowing what temperatures best suited their purposes. We had the luxury of professionals monitoring the heating process. If we had been responsible for that step of the pottery process I believe our results would have been quite different, especially without any previous knowledge of what that step entailed.

I believe that the technologies I incorporated in the making of my pot were available to the before mentioned societies. These people would have discovered clay very early on, as it is readily observable under the uppermost layers of earth. Early people, who would have unearthed this clay and let it sit in the sun, would have seen that, while malleable when wet, the clay hardened in the heat and sunlight into a solid durable mass. Another means by which these humans would have noticed the beneficial characteristics of clay would have come with the invention of fire. The fire-pits used by these societies, probably first used for warmth, would have certainly had clay inside of them. After building fires in these holes they would have noticed how increasingly hardened that clay had become.

The clay early men and women used would probably have been "red clay." Clay that had good, coarse consistency would have proved more manageable for the bigger vessels. The clay we used for making our pottery had a very fine, soft consistency. As a result, when trying to make a fairly large container I found that the clay would very often give way under its own weight. The clay we used at *Aura Ceramics*, I found out after consulting with some of the full-time workers, is much more suitable for molds or sculptures that can maintain their form until placed in the kiln. Many of the examples of pottery and relics of ancient pottery I have seen appear to be of a coarser grain than that which we used in class. Much of this ancient pottery served many other uses than those I have already noted.

One of pottery's predominant uses in these early years revolved around cooking. Cooking many of the plants and animals in pottery made them more palatable and nutritive. I would imagine that another method enhanced by the invention of pottery was the transportation of domesticated plants. Plants were carried more easily from place to place, and were able to be stored for a much longer period of time (without losing their nutritional value), inside these vessels of pottery. Also, the surpluses of their crop yields were able to be stored for longer periods of time. All of these advantages made the emergence of pottery useful to these early societies. However, I believe they did not provide the primary function of pottery.

The earliest examples of pottery that I have seen had aesthetic value. They surely met practical needs as well, but the beauty is what appears most distinctively. Taking this into account, one could conclude that pottery also functioned as social tools for these early societies. Possibly the owning of the more beautiful pottery was a means of establishing social order. Pottery could have been seen as a prestigious good, and only the most prominent members of a particular society would have possessed the most

beautiful pieces. The pottery may have been an important factor in economic commerce, especially for trading in exchange for other goods. Those early humans who did not have the domesticated goods they needed may have traded works of pottery for those staples. Another reason for aestheticism in pottery may have been a means of representing cultural identities. Distinctive techniques of decoration and style differentiated societies. In retrospect, it seems that the style of pottery each of these different societies utilized may have been a means of identifying the culture they represented, a way of distinguishing one society from another.

Identity may not have been the only reason that certain groups of people used similar styles in their pottery. I say this after observing trends that developed in our own experimental community. I noticed that many people who were not sure how to go about creating a vessel would look around the room and try to imitate successful techniques from their other classmates. I could have been a little guilty of that myself. Our work on this project also gave me some new insight on the whole idea of aesthetics, as it pertained to early man, when it came to making our own vessels. Individually, it seemed to me, we were each trying to make something at least somewhat different from and more original, if not more beautiful, than our classmates' projects. I could imagine the same kind of competition existing between members of these early pottery-making societies. The aesthetic qualities those early ceramics contained may have originally stemmed from a competitiveness to make something better and more attractive than someone else had made.

I think the practical uses of pottery for these early civilizations would have been very recognizable. From my own experience I found that making a functional piece was not very difficult, and that it would have been a trade that even these ancient humans could accomplish. My attempt at pottery was not successful, but I think my goal would have been attainable, given time for a few more efforts. However, the beautiful works created in the "Old World" suggest a social and economic system we do not expect from such primitive times. The pottery became symbols of hierarchical status, dividing classes of people and societies, much as we are accustomed to in the "New World."



## A Comparison of Viewpoints: Finding Truth in Constructivist Psychotherapy

Matthew Coble

Science is a construction of the human mind. The theories, approaches, and methods that are used in any scientific field have gradually developed over time to become an objective standard of evaluation. As science continues to evolve, new approaches to obtaining knowledge about the world around us must be considered, and at the same time these new approaches must be evaluated within the present context of what is considered to be science. In doing so, conflict and confusion will arise as new concepts meet the critical evaluation of the old. The appraisal of and criticism of a new approach to psychological therapy is one example of such a situation. By looking at the evaluation of constructivist psychotherapy, one can bring this conflict and confusion into the light of understanding.

Since its dawning at the turn of the century, psychotherapy has faced a myriad of objections in regard to its validity as a scientific practice. With the introduction of psychoanalysis in the late 1800s, Freud opened the doors to a field that would mature as the next one hundred years progressed. Throughout its evolution, psychotherapy has been evaluated for its capacity to deal with clients on an individual basis and at the same time maintain the objective viewpoint which science requires. In what Robert Neimeyer considers a "postmodern context" of scientific, social and political themes, a new philosophical approach to psychotherapy has developed. This approach, called constructivism, is based on a subjective interpretation of reality and how that interpretation affects human thought processes. In "An Appraisal of Constructivist Psychotherapies", Neimeyer looks at how constructivism has developed in psychotherapy, how it has diverged into various sub-fields, what valuable contributions it brings to the ever-advancing field, and finally what problems lie in this subjective approach.

In the article titled "Constructivism in Psychotherapy: Truth and Consequences," Professor Barbara Held criticizes the constructivist approach for its antirealist claims. She reasons that the subjective nature of constructivist therapy disallows the knower from coming to any conclusions that are founded on an independent, objective reality. Rather, "knowers make, invent, constitute, create, construct, or narrate, in language,

their own subjective realities...."<sup>1</sup> In her analysis of this alternative method of psychotherapy, Held takes a straightforward, logical approach that leads her to conclude that constructivism is not an acceptable, standardized means of therapy. She walks the reader through the distinctions between realism and antirealism, the consequences of yielding to subjective therapy, and evidence that such therapy does appeal to antirealist doctrine. However, she oversimplifies the true essence of constructivist psychotherapy. By reducing it to the absurd she does not give a full view of the complexity that is involved in this relatively new therapy.

Modern psychology branches out into a variety of therapeutic approaches. The "classical" approaches, such as cognitive theories, developed as a result of a highly analytic/empirical philosophy embedded in the foundations of modern science. Therapists of these schools of thought maintain that there is an outside, objective reality that can be used as a reference point, or standard, in measuring their clients' internal world. It is certainly reasonable to assume that purely objective measures would benefit any means of personal evaluation. Within the past twenty years, however, a new approach in psychotherapy has gained precedence among the shadows of traditional cognitive therapy. The constructivist viewpoint carries with it a certain degree of subjectivity in that it emphasizes the self-organizing features of knowing and operates on the principle that human knowledge is interpersonal and evolutionary.<sup>2</sup>

It should be remembered that constructivism is more a philosophy than a set of therapeutic guidelines. This point is made clear initially by Neimeyer, who offers the following statement in his introductory paragraph: "Constructivist therapy is not so much a technique as a philosophical context within which therapy is done, and more a product of the *zeitgeist* than the brainchild of any single theorist."<sup>3</sup> According to this author, the constructivist movement is a direct result of the postmodern culture in which all of academia currently finds itself. Just what does this "postmodern culture" entail? Neimeyer suggests that it involves a new social consciousness that recognizes that there are many different belief systems and apparent realities that are not necessarily absolute, but rather are socially constructed.<sup>4</sup> The philosophical nature of the constructivist approach is an obvious movement away from the objective scientific approach. Furthermore, constructivist psychotherapy represents a movement away from traditional cognitive approaches that are based on scientific objectivity.

There has been an increasing amount of evidence that supports the effectiveness of constructivist psychotherapy. Studies following classical cognitive approaches have yielded positive results for new methods of therapy. For example, the hypothesis that

<sup>1</sup> Barbara Held, "Constructivism in Psychotherapy: Truth and Consequences," in *The Flight from Science and Reason*, ed. Paul R. Gross, Norman Levitt, and Martin W. Lewis (New York: New York Academy of Sciences, 1996), 199.

<sup>2</sup> Robert Neimeyer, "An Appraisal of Constructivist Psychotherapies," *Journal of Consulting and Clinical Psychology* 61 (1993): 223.

<sup>3</sup> Neimeyer 221.

<sup>4</sup> Neimeyer 221.



personal constructions ultimately frame distinctions that operate as tools for subjectively categorizing experience, decision processes, and controlling behavior has received support in many studies that use procedures that have been developed in the cognitive sciences.<sup>5</sup>

Neimeyer argues that the postmodern way of thinking requires us to develop a new standard of evaluation, one which is not so sternly grounded in the highly rational, highly logical nature of science. As human knowledge continues to evolve, so has our means of coming to understand and collect this knowledge. The author feels that current trends in the intellectual world are giving rise to a new wave of critical evaluation. He notes that "Late 20th century philosophers of science have redefined the concept of rationality to give greater priority to the preservation of central theoretical concepts than to their immediate rejection when they fail to square with the facts."<sup>6</sup> As knowledge of our surroundings continues to evolve, so must the approach to how we interpret that knowledge.

Cognitive therapists often look at the perceptions of reality that their patients have and compare that to what they (the therapists) consider to be an objective reality. How well these perceptions match up with what is "real" is used as an initial evaluation of the client's cognitive processes. The goal of the therapist, then, is to eliminate any irrational, self-constructed concepts that may be causing the client's distress. Neimeyer believes that in a multi-cultural society such as ours, psychological therapy systems should not use these "reality checks" as a standard for treatment. He says that "the very pluralism of beliefs in the postmodern world challenges the credibility of any psychological system that equates adjustment with accuracy of reality contact."<sup>7</sup> Furthermore, he refers to Anderson who states in his book, *Reality isn't what it used to be*, that "It is very hard, in a world with *many realities*, [italics added] to maintain the position that satisfactory adjustment to one reality is equivalent to mental health, and that unsatisfactory adjustment is a form of mental illness."<sup>8</sup> It should be mentioned here that throughout the article, Neimeyer, along with others, refers to the existence of "multiple realities." He never clearly defines this concept and in turn does not provide as precise a definition of constructivism as he may have been able to. Whether this term implies actual physical realities or merely varying perceptions of one reality is rather ambiguous. While certainly there is a difference between these two interpretations, the distinction is not made in the article.

It is certainly possible that this distinction is required if constructivist psychotherapy is to gain acceptance among the traditional methods of cognitive psychological therapy. As the field of psychology has evolved, the theorists and clinicians have gone through a mass of critical evaluations by the rest of the scientific community in order to determine the objective validity of their work. Psychology has

<sup>5</sup> Neimeyer 225.

<sup>6</sup> Neimeyer 222.

<sup>7</sup> Neimeyer 222.

<sup>8</sup> Neimeyer 222.

worked hard to become a science, and it is not going to accept methods that dabble into "multiple realities." It is certainly reasonable to understand why psychologists such as Barbara Held are skeptical of constructivist therapy.

Held finds a logical inconsistency in the constructivist approach. Her arguments are centered on the antirealist doctrine, which according to her is a philosophy that constructivist therapists promote. The antirealist approach assumes that knowledge of an objective reality, independent of the knower, is impossible. It is when the constructivist therapists evaluate their own work that Held sees an illogical contradiction in this approach: "Despite their professed antirealism, constructivist/constructionist therapists make--as they must and as they should--general reality or truth claims about the effectiveness of their therapy."<sup>9</sup> According to the critic, there is no way for such therapists to step back and look at their own progress in an objective manner as long as they promote subjectivism in their practices.

It is possible, however, that in her analysis Held has forced constructivist therapy into the context of antirealism. As Neimeyer suggests, constructivist therapists regard knowledge as a hierarchical, self-organized system. Through one's own personal experience, knowledge is obtained through selective processes and adaptations. Thus, knowledge is considered to be an evolution through a more comprehensive set of interpretations.<sup>10</sup> This does not necessarily mean that all knowledge of reality is first sifted through subjective experience, but rather that it is open to multiple interpretations. Neimeyer states that "The goal of constructivist therapists is ultimately more creative than corrective, insofar as they attempt to foster the broader development of the client's constructions rather than eliminate or revise cognitive distortions."<sup>11</sup> Creativity, interpretation, and evolution of self-knowledge are characteristics that go hand in hand with constructivist therapy and the phenomenological perspective from which it derives. Once again this seems to create problems for Held, who argues that from this perspective the only reality that a person will have is that which he creates, or "constructs" through this form of therapy.

One of the characteristics of the constructivist approach, according to Neimeyer, is that of *active knowing*. The knower (or patient) is able to be proactive and goal-directive in his or her own reflections of personal experience. As a result, the therapist plays a reflective role, one that is more interpersonal than that of the classical cognitive therapist. The traditional therapeutic methods of therapy require the therapist to be more instructive and authoritative, thus giving the patient a more passive perspective in his or her own treatment.

Constructivists do not view active knowledge as being problematic in therapy, and apparently neither does Held. In her statement that "the idea of an active rather than a passive knower is falsely assumed to imply antirealism,"<sup>12</sup> she is trying to make the

<sup>9</sup> Held 201.

<sup>10</sup> Neimeyer 223.

<sup>11</sup> Neimeyer 224.

<sup>12</sup> Held 202.



point that constructivist therapists falsely assume that active knowing leads to antirealist claims. However, the constructivist therapists do not consider their approach as antirealist, but rather it is Held who holds this belief. It seems that in making this statement, Held contradicts herself by allowing her own terminology to invade the viewpoints of others.

It seems that misunderstanding and misjudgement are at the center of the controversy between traditional cognitive approaches and constructivist approaches to psychotherapy. There must be a more clear understanding of what it means to construct subjective realities and partake in active knowing before either viewpoint is criticized. This can only be done when therapists first look inward at their own approaches and evaluate them as objectively as possible. Furthermore, perhaps it is time for the field of psychology as a whole to re-evaluate what methods of therapy are effective and what standards will be used to measure this effectiveness. As the field continues to evolve, perhaps so should its standards of performance. Like any other science, adaptation is essential for the continuation of interpretive knowledge.

One need look no further than the revolution in quantum physics that occurred at the beginning half of this century. The world of classical Newtonian physics was turned upside down and inside out with the arrival of a new class of physicists and astronomers. At the head of that class was a young German scientist named Einstein, who with his theory of relativity redefined our concepts of mass, energy, and the like. Now that we bring the second half of this century to a close, perhaps psychology is also ready for such a revolution. Certainly, parallels can be made to what is currently going on in the world of psychotherapy. New approaches are developing under the influence of a changing social conscience. The classical approaches to patient therapy revolve around traditional cognitive perspectives, which follow a linear, systematic set of guidelines. The constructivist approach to is a much more complex, yet encompassing form of psychotherapy that deserves continual exploration.

## Environmental Protection Must Be Our First Priority, Says Eco-Warrior

Caitlin Gray

At the end of March, *Time* magazine published a special issue entitled "The Century's Greatest Minds." It was the fourth in a *Time* series on the 100 most influential people of the century, this particular issue focusing on "Scientists and Thinkers." On the cover, Albert Einstein is pictured on a psychiatrist's couch, hands crossed over his chest, a depressed look cloaking his face. Dr. Sigmund Freud, seated in a chair near the couch, pen and pad in hand, is leaning in toward Einstein, excitedly waiting to perform some bit of psychoanalysis on the saddened scientist. A framed picture of Jonas Salk rests on the side table; a portrait of John Maynard Keynes hangs from a nail in the wall. In the background, resting atop a bookshelf, is a stone bust of Rachel Carson, author of *Silent Spring*. She finds herself in quite excellent company not only on the cover, but in the interior of the magazine as well.

Carson was the only environmentalist and the only woman featured in the entire issue. Evidently, her impact in the world of "scientists and thinkers" was a tremendous one, and, as mentioned in Matthiessen's *Time* article, her book, *Silent Spring*, is "nearly 40 years later . . . still regarded as the cornerstone of the new environmentalism."<sup>1</sup> Matthiessen goes on to write that "one shudders to imagine how much more impoverished our habitat would be had *Silent Spring* not sounded the alarm."<sup>2</sup> This is indeed a worthy claim by Mr. Matthiessen, but he correctly uncovers a bigger and more alarming truth when he says, "the damage being done by poison chemicals today is far worse than it was when she wrote the book."<sup>3</sup> In fact, since 1962, pesticide use in the US has doubled.<sup>4</sup>

As an environmentalist (or a "radical" environmentalist, as I am often labeled by members of the mainstream environmental movement), I feel it is my duty as a protector of the Earth's well-being to write this editorial as a means of bringing into the American consciousness a variety of frightening environmental issues. Though some of you may be aware of these problems, I know many are not, and thus may be shocked to learn about the degradation of our Earth and the people living in it. Indeed, I truly

<sup>1</sup> Peter Matthiessen, "Rachel Carson," *Time*, March 29, 1999. 187-88.

<sup>2</sup> Matthiessen 188.

<sup>3</sup> Matthiessen 188.

<sup>4</sup> Robert Walls, "VAST 227: Green Revolution" FactSheet: "Since *Silent Spring*."



believe that "since the dawn of the industrial age, America has behaved like an alcoholic with a good job—prospering despite a lifestyle that jeopardizes the future and ruins much of what is good with irresponsible behavior."<sup>5</sup> We are a country obsessed with excess, always demanding extra, always using too much, always wanting more than we need. We treat the environment as a slave, manipulating, molding, and using it at our will, thinking only of the immediate benefits (usually economic) it will give, and never using careful judgment for the future. We are unable to accept the Earth as an entity, thinking that the Earth's ecosystem can survive even when entire chunks of it are depleted or destroyed.

This is terribly wrong. Societies like that of contemporary America regard "humans as isolated and fundamentally separate from the rest of Nature, as superior to, and in charge of, the rest of creation."<sup>6</sup> It is time that more of the world's people come to understand and embrace the idea of *biocentric equality*, which states that "all things in the biosphere have an equal right to live and blossom and to reach their own individual forms . . . ." After all, it must be known that *all* "organisms and entities in the ecosphere, as parts of the interrelated whole, are equal in intrinsic worth."<sup>7</sup>

Because of my deep beliefs in the relationship I feel all humans should have with the Earth, I have signed my life over to battle the war being waged against the Earth by technocratic-industrial societies like America. I call myself an eco-warrior, for I believe strongly in something Edward Abbey once wrote, that "Sentiment without action is the ruin of the soul." I also believe, as Margaret Mead wrote, that "a few committed people can change the world. In fact, it's the only thing that ever has." I am one of those committed people, and I am writing to educate those who have not had access to this sort of information. For those who have I raise a battle cry to you. Join the Cause or prepare for War!

One of the main reasons that environmental problems associated with the spraying of pesticides persist, and have gotten much worse since Carson's time, is that the "U.S. chemical industry," backed by *scientists*, has overpowered "federal and state efforts to protect the public health from chemical hazards."<sup>8</sup> In a recent report, "Toxic Deception: How the Chemical Industry Manipulates Science, Bends the Law, and Endangers Your Health," it was discovered that studies of certain heavily regulated chemicals "funded by the chemical industry tended to find the chemicals innocent, while studies financed by non-industry sources tended to consider the same chemicals to be dangerous to human health."<sup>9</sup> As Charles Lewis, executive director of the Center For Public Integrity, said, "chemical companies employ nearly 90 per cent of the nation's 1,650 or so 'weed scientists', and the few independent researchers rely heavily on grants from

<sup>5</sup> Jim Nichols, "Environmentalists, industry speak in one voice at meeting," *Plain Dealer*, May 9, 1999.

<sup>6</sup> George Sessions and Bill Devall, "Deep Ecology," in *American Environmentalism: Readings in Conservation History*, 3rd ed. Ed. Roderick Frazier Nash (New York: McGraw Hill, 1990), 309-315.

<sup>7</sup> Sessions and Devall.

<sup>8</sup> Russell Mokhiber, "'Objective' Science at Auction," *The Ecologist*, March-April 1998, 57.

<sup>9</sup> Mokhiber 57.

pesticide makers."<sup>10</sup> That is to say that the very scientists the general public is relying upon to tell them and to teach them what is safe and what is not safe, those few who have the education and knowledge to make expert conclusions and objective decisions on behalf of the public's welfare, seem to be thinking only of their own economic welfare. It is not clear who can be trusted. Science has "skew[ed] public discourse and policy in favor of the continued manufactur[ing] of fundamentally unhealthy products. Simply put, the chemical industry, backed by the authority of some twisted subjective scientists, has "overpowered the nation's system of safeguarding the public health."<sup>11</sup>

As if dishonest scientists were not a large enough problem, the rise of religion in the environmental movement has been created another danger. No matter how one decides to interpret certain parts of the Bible, there are areas which can only be seen as fundamentally contrary to the environmental movement's doctrine. For example, in *Genesis 1* it is written that man should "be fruitful and multiply, and replenish the earth and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, over every living thing that moveth upon the earth." It is ideas like these that originated peoples' skewed perception that we can do as we please with the Earth, rule over the environment, and overpopulate to the point of destruction. Religion's popularity is also prone to flowing cycles: periods of great revival and periods of unpopularity.<sup>12</sup> Who can say that when the popularity of religion falls to a low point, it won't drag down all of the causes it has associated itself with as well? Lastly, many of the most powerful centers of religious authority are very conservative (the Vatican, the Christian Coalition, televangelists like Jerry Falwell and Pat Robertson), and are thus likely to interpret holy texts in conservative ways that are detrimental to the environment.<sup>13</sup>

When all is said and done, however, and corrupt scientists and the infringement of religion are left out of the picture, we, as Americans and citizens of the Earth, are in the middle of a multi-faceted environmental crisis concerning pollution. We have upset the natural balance of the Earth's ecosystem by wildly overspraying and overapplying poisonous chemicals and by dumping hazardous toxic waste in areas close to peoples' homes and children's schools, thus destroying towns and infecting innocent peoples' lives with often fatal diseases. As usual, we have proven that we, as humans, have exceedingly short memories when it comes to our past mistakes in history. Just as we have seen many repeats since World War II of Holocaust-like camps, deportations, and killings, most recently, of course, in Kosovo, we are repeating the very same grave mistakes today that Carson so eloquently brought forth into the public's consciousness forty years ago.

<sup>10</sup> Mokhiber 57.

<sup>11</sup> Mokhiber 58.

<sup>12</sup> Robert Walls, "VAST 227: Green Revolution" FactSheet: "Green Religion—A Solution to Environmental Problems?"

<sup>13</sup> Walls, "Green Religion."



While some very dangerous chemicals have been removed from U.S. markets, such as DDT in 1972 and chlordane in 1982, the very same chemicals are still manufactured in the US and sold for use in other nations.<sup>14</sup> This means that while the American people and landscape will no longer be affected by these particular pesticides, American companies seem to have no problem manufacturing chemicals to aid in the destruction of the environment on another part of the Earth. What a dangerous lack of logic and foresight it is for these companies to be doing this! They are risking the future health of the Earth to make quick money in the present. They are overlooking the essential truth that everything on Earth is interconnected. As I truly believe, "if we harm the rest of nature then we are harming ourselves. There are no boundaries and everything is interrelated."<sup>15</sup>

While the advocates for pesticide use, like chemical companies, farmers, and individual homeowners, believe they are saving farm produce and protecting trees, flowers, and lawns from insects, disease, and "evil" weeds, the reality of the situation is that pesticides are causing more pain, death, and destruction than they are saving. For example, there are some 67 million birds killed each year by pesticides in the US.<sup>16</sup> Cancer rates have risen dramatically; rates for breast cancer in women have tripled since the turn of the century, and the rate for testicular cancer in men has tripled since 1945.<sup>17</sup> Perhaps most frightening is the effect of pesticides on children. Even though children are more susceptible to pesticides that cause cancer and damage the immune and nervous systems than any other age group, federal guidelines and policies for safe levels of chemicals are established according to research done on adults.<sup>18</sup> The use of pesticides has also created 504 known species of pesticide-resistant insects and 273 known species of herbicide-resistant weeds,<sup>19</sup> which seems to make the spraying of pesticides a pointless exercise with very disastrous results. As if this were not enough, we as citizens have been stripped of our right to protect ourselves and our children through legal action, for under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), citizens cannot sue anyone who has violated laws for related chemical misuse.<sup>20</sup>

Many seem to believe that there is no easy way to solve this immense pesticide problem. To you I say that there is! My fellow eco-warriors and I are in the process of calling for the immediate discontinuation of all pesticide use. We are educating the public and encouraging the use of alternative pest control. After all, the use of toxic chemicals to control pests is a "band-aid at best." Pesticides not only do nothing "to get at the conditions which foster infestations so that they can be adverted in the

<sup>14</sup> Walls, "Since Silent Spring."

<sup>15</sup> Sessions and Devall.

<sup>16</sup> Walls, "Since Silent Spring."

<sup>17</sup> Walls, "Since Silent Spring."

<sup>18</sup> Walls, "Since Silent Spring."

<sup>19</sup> Walls, "Since Silent Spring."

<sup>20</sup> Walls, "Since Silent Spring."

future," but they exacerbate pest problems by "generating resistance, eliminating natural predators, [and] causing secondary pests (those which had not been a problem prior to pesticide use) to flourish."<sup>21</sup>

The first alternative method to pest control is known as a "physical control." To eliminate pests around homes, simple maintenance, such as "caulking cracks and crevices, plugging holes with plaster or steel wool, and eliminating water leaks in roofs or pipes can significantly decrease many pest problems inside buildings, such as roaches, ant, and rodents." Exclusion methods, such as "storing food in sealed glass or plastic containers, and making sure all trash cans are sealed and emptied at night rather than in the morning" are also effective. Finally, outdoor physical controls involve strategies like "directing water away from structures (via guttering, proper placement of stairs), moving woodpiles away from buildings, and removing rotting carpentry or old stumps."<sup>22</sup>

The second alternative method is known as "biological control," where "natural enemies of pests (such as parasitic wasps, nematodes, and ladybugs), microbial agents, . . . plant extracts, and insect hormones that disrupt normal mating and development" are used to "capitalize on natural checks and balances to control problem pests." This strategy can be used along with a third set of alternative methods, what are known as "cultural controls." These are "farming strategies such as crop rotation and cover crops (to break up weed and insect cycles), mulching, and building up soil structure and natural biotic communities (e.g., earthworms)" to keep "harmful pests in check."<sup>23</sup> These are each natural, easy, feasible methods to solving a rather complex pollution issue.

However, pollution caused by the overuse of pesticides is far from being the only issue in this far-reaching problem. There are hundreds of examples of towns being held siege by hazardous waste dumps, waste incinerators, and nuclear reactors. Not only has toxic material seeped into their soil and groundwater, but toxic chemicals have become a regular ingredient in the air millions of people breathe. In fact, 100 million Americans breathe air that is illegal under the guidelines of the clean Air Act.<sup>24</sup> It is with utter sadness and disgust that I must write that the majority of those affected by this type of pollution are minorities who live in small, economically disadvantaged neighborhoods. For example, according to Jim Motavalli, author of the article "Toxic Targets," "the average American citizen is subject to 10 pounds of toxic chemical releases per year. The average Convent resident," a small, mostly African-American community in Louisiana, "is exposed to 4,517 pounds."<sup>25</sup> Exposure to these toxic chemicals causes a variety of harmful, often fatal illnesses and diseases such as chronic fatigue, spontaneous nosebleeds, immune system changes, asthma, emphysema,

<sup>21</sup> "Alternative Pest Control." (<http://www.envadvocates.org/public.html/Pest/alternative.html>).

<sup>22</sup> "Alternative Pest Control."

<sup>23</sup> "Alternative Pest Control."

<sup>24</sup> Walls, "Since Silent Spring."

<sup>25</sup> Jim Montavalli, "Toxic Targets," *E Magazine*, July-August, 1998, 30.



reproductive system disorders, and behavioral abnormalities, as well as prostate, bladder, breast, and lung cancers.

The location of these sites did not happen by chance. This was a calculated and twisted move on the part of chemical companies to place the brunt of this problem onto people who cannot fight back because of certain disadvantages such as a lack of money, time, and education. These companies are participating in outright environmental racism, in a blatant mockery of what America, "the land of the free," is supposed to stand for!

Given the present global radioactive waste crisis, my fellow environmentalists and I believe that "no more nuclear waste should be produced anywhere in the world."<sup>26</sup> We know that this is a near impossible demand, but it is by no means an irrational one. We as a planet must begin the slow recovery process by immediately phasing out the production of toxic waste. This process can be started by following a project called the "New Energy Deal" that my colleagues at Greenpeace are working on, a project that will greatly reduce the waste from energy production. "The New Energy Deal" is the "only way out of the dead end street of the nuclear era." The new energy era ahead of us "will rest on new materials, new processes and new ways of thinking about producing energy at home, in the office, and in industry." The key concepts to the "New Energy Deal" rest in energy efficiency and renewable energy, and use such things as "lightweight metals, micro-computers, silicon film, arrays of semi-conductors and new electric filament." They run on "wind, sunlight, ocean waves, and organic gas." This new energy is sustainable because it does not "run out" and [it] do[es] not pass on a legacy of radioactive waste and climate change to future generations."<sup>27</sup>

Obviously, the ideas involved in "The New Energy Deal" are not original ones; environmentalists and lawmakers have been brainstorming such ideas for alternative energy use for years. However, our society has been too slow in raising a public cry in favor of these new methods, and thus the government has been apathetic about enacting any real change. This is why my friends aboard the ship, *MV Greenpeace*, embarked on a global expedition to "expose the damage caused by highly polluting and persistent poisons throughout the world."<sup>28</sup> They are "calling on industries responsible for the contamination for an immediate clean up and demand worldwide political commitment to 'zero toxic discharges.'"<sup>29</sup> In October of 1998, they were involved in "exposing and safely remov[ing] toxic waste produced by chemical giant Orica from Homebush Bay, gateway to the Sydney 2000 Olympic Games." They removed 30 drums of toxic sediment "in compliance with legal guidelines for moving hazardous waste."<sup>30</sup> In

<sup>26</sup> <http://www.greenpeace.org/comms/no.nukes/newdeal.html>

<sup>27</sup> *Ibid.*

<sup>28</sup> "Greenpeace Launches the Brazilian Leg of World Expedition to Expose the Chemical Poisoning of the Planet." (<http://www.greenpeace.org/pressreleases/toxics/1999jan7.html>).

<sup>29</sup> "Greenpeace Launches."

<sup>30</sup> "Greenpeace Exposes and Removes Toxic Waste at Olympic Site." (<http://www.greenpeace.org/pressreleases/toxics/1998oct15.html>).

December of 1998, Greenpeace activists "cemented the rainwater runoff/drainage channel of the Solvay Indupa PVC plant in Bahia Blanca, Argentina."<sup>31</sup> They took such action because, as one Greenpeace activist said, "it is simply outrageous and a criminal act to have these toxic components being released to the environment via an ordinary drainage pipe."<sup>32</sup>

I am the first one to admit that these examples are by no means the "magic solutions" to our problems. We have ruined our Earth to the point where there may no longer be any *real* remaining solution for healing the Earth. But we will persist. We will continue to try. We will continue our part in educating the public and attempting to solve the Earth's pollution problems. I have written today to encourage you, the readers of this publication, to do the same. After all, "sentiment without action is the ruin of the soul." Rise up and *fight!* DO SOMETHING to prevent the ruination of *your* souls.

<sup>31</sup> "Greenpeace Cements Solvay Drain to Prevent Contamination."

(<http://www.greenpeace.org/pressreleases/toxics/1999dec17.html>).

<sup>32</sup> "Greenpeace Cements Solvay Drain."



## Appendix: What is a VAST course?

A Values and Science/Technology course should meet four basic criteria:

- 1) It should engage students in a problem or issue sufficiently large that it cannot be addressed by any single disciplinary perspective.
- 2) It must present some aspect of science and/or technology, in interaction with a variety of other disciplines in a larger context. In particular, there should be strong evidence of both humanistic and scientific approaches to the chosen problem or issue. The balance between these approaches may vary from course to course; moreover, the course should address ethical or values-oriented concerns.
- 3) It should engage students in "interactive" or "student-centered" modes of learning, presenting a balance of approaches to the use of class time. Examples of approaches that have been regularly employed by successful VAST courses include: teacher-led discussions, student-led discussions, group work, in-class writing, internet research, collaborative research, oral presentations, mock debates, lectures, laboratory and field work, readings in primary and secondary literature, and so on. New and experimental pedagogies are encouraged.
- 4) It must be affiliated with the College Writing Program and make full use of the resources of process writing: multiple drafts, peer review, conferences with W.A.s, etc. Writing should be taught as a means as well as a manifestation of critical thinking. Courses affiliated with the CWP should assign at least 20 typed pages of work completed outside of class time.

### RATIONALE:

Lafayette College, thanks to its strong programs in engineering, natural and social sciences, and the humanities, offers an unusually diverse environment for interdisciplinary teaching and learning. The VAST program takes advantage of this environment by offering courses that are less about teaching a certain content than about teaching a process, or way of thinking, about content. The opening premise of the VAST program is that science in our normal experience interacts constantly with other "disciplines": economics, social policy, applied ethics, politics, philosophy, history, language, culture, the arts, and so on, all within a larger context. In James Trefil's

words, "science presents itself to the average person in the context of a problem or issue, and without the kind of academic boundaries that come as second nature to people in universities." As a result of taking this VAST course, students should be better able to see and understand science as a functioning part of their daily social world.

A VAST course is therefore, first of all, fundamentally "cross-" or "inter-disciplinary." This does not mean that all disciplines are taught, but that the course should incorporate approaches from the natural and social sciences, the humanities, and/or the arts in a fundamental way. Each course should examine a topic, problem, or issue sufficiently large and complex that there is more than one way needed to look at it.

The interdisciplinary nature of the VAST course encourages interactive kinds of teaching. Sophomores will bring to each VAST course a range of disciplinary abilities and perspectives, and will do so just as they are in the process of declaring a major or disciplinary "home." The VAST course should provide a space for each student to reflect on their chosen discipline as a distinct mode of insight into a shared social issue. Students should be encouraged to think of themselves as offering a perspective specific to, say, history or biology or English or economics, even as they work with other students with quite different perspectives. Ideally, the convergence of many different disciplinary perspectives creates a whole understanding that is greater than the sum of its parts.

Both students and faculty may find that incorporating unfamiliar ways of thinking into a single course is unusually challenging. Students are accustomed to seeing themselves as consumers in an intellectual shopping mall, travelling from course to course without trying to integrate what they are learning from each one. VAST should help each student begin to see connections between courses, to help them build "knowledge" rather than "knowledges."

At this stage, many students are preoccupied with mastering the tools and rules of their chosen discipline, and are uncomfortable with any process that asks them to reflect on the ways each discipline limits as well as enables knowledge. For instance, a course that studies the use of metaphor in scientific language asks students of the sciences to see their textbooks and laboratory reports in a fundamentally different way; similarly, students accustomed to avoiding science learn that important social issues like AIDS or reproductive technologies cannot be understood without it. Faculty members, too, will find themselves in the unusual position of teaching material in which they are not professional specialists or experts. An advantage of this is that students see faculty members in the role of "learner" and witness the process of acquiring and applying new knowledge, including knowledge provided by the students themselves.



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Lafayette College  
Easton, PA 18042