

The Rebirth of Bioethics: Extending the Original Formulations of Van Rensselaer Potter

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Van Rensselaer Potter's original concept of bioethics as a global integration of biology and values was designed to guide human survival. His attention to the creation of human knowledge and the incorporation of ecological concepts and values into medicine and health remain important, yet largely neglected, contributions deserving of further elaboration. Bioethicists should heed his warnings about unsustainable progress, particularly in health care systems, and work towards changing their behaviors. Incorporating life-affirming spiritual values and extending Potter's global bioethics to a deeper bioethics seem essential.

The future of bioethics lies to a considerable degree in its past. The original formulation of bioethics by Van Rensselaer Potter included a profound commitment to the future (Potter 1971) that the world desperately needs bioethicists to rediscover. Our health care systems are unhealthy medically and morally. Bioethicists need to find the courage and wisdom to lead the revolution in organizational change and not be wedded to dysfunctional systems. This paper is a critique of the aspects of contemporary bioethics as a profession and a plea to make our thinking more global. It joins other attempts to revisit the past of bioethics to be constructively but strongly critical of its future, particularly its relationship to medicine and society (Stevens 2000). It also is consistent with those re-examining the future of environmental ethics (McKim 1997; Sagoff 1991); the social aspects of environment (Marmot 1998); nature-based spirituality in bioethics (Kaebnick 2000); the healing power of nature (Frumkin 2001) and the ethics of public health (McMichael 2000).

In the United States, Potter's original coinage of the term "bioethics" in 1970 (Potter 1970; 1971) seems to be viewed by some as an irrelevant historical note. Whereas some have recognized his contributions and fostered a broader view of bioethics (Reich 1994; 1995), Potter's legacy is not taught in many biomedical ethics programs. Moreover, he is not adequately included in the important accounts of the history of our field (Jonsen 1998; Engelhardt 1996). His concepts of bioethics evolved in the context of a mid-western university cancer research center and lost out in the intellectual competition to more dominant formulations that emerged in Washington supported by more money and national political power. Potter's ideas deserve not only to be rescued from being

endangered species but also promoted and extended because of their potential survival value for life on this planet. It is not only Potter's ideas (which were inspired by many others, including notably the pioneering land ethicist Aldo Leopold (Leopold 1949)) but also his values of personal accountability, humility, wisdom, mentorship, and spirited citizenship that deserve recognition for their goodness (Potter 1971a; 1975). **V.R. Potter the Man**

A brief mention of Potter as an individual human being is particularly relevant to the development of his particular ideas. The biography of Van is particularly relevant to the history of an idea, the concept of autonomy that has played such a dominant role in biomedical ethics. Rather than focus on individual rights Van emphasized personal responsibilities. Van followed a personal creed that was included in all his books (Potter 1971a; 1988). To call oneself a bioethicist in his view is to follow an environmental and activist credo. He was a virtuous bioethicist whose authenticity was remarkable in his dying (Potter 1999a; Whitehouse 2000). My personal relationship with Van, as well as the intellectual appeal of his ideas, motivated my own interest in rebirthing and extending his concept of bioethics (Whitehouse 2001a). Although a few other papers have celebrated his life and summarized key ideas (Potter and Whitehouse 1998; Whitehouse 2001; 2000), this work represents the first attempt to extend his ideas beyond the original formulations of deep bioethics (Potter and Whitehouse 1998).

The Extension of Potter's Bioethics to a deeper bioethics

Van coined the term "bioethics" after trying for many months to find the right words to express the need to balance the scientific orientation of medicine with human values. He considered many other words but chose bioethics perhaps inspired by his own training in the emerging field of biochemistry.

His first opportunity to fully express his conception of bioethics was in his 1971 book, *Bioethics, A Bridge to the Future*. The concept of bridging played a pervasive role in much of Van's early thinking as well as in his later thoughts about global bioethics (Potter 1962; 1999b; 1994; 1999c). In the original conception, bioethics was meant to be a bridge between science and humanities. Increasingly, he felt the need to link what he came to realize had become mainstream biomedical ethics with environmental ethics. During his career he continued to modify the term bioethics to differentiate his conceptions from the dominant view of biomedical ethics. He eventually selected the term global bioethics (Potter 1995) and this became the title of his second book that he dedicated to Aldo Leopold in 1988 (Potter 1988).

As Warren Reich rightly points out, the word global in global bioethics has multiple meanings (Reich 1994; 1995). It recognizes the intellectual breadth of Van's efforts. Van believed that bioethics should include not only medical and environmental ethics but also social and religious ethics. He later explored terms such as privilege and bridge bioethics. His approach emphasized the value of integrated approaches in ethics before later attempts to blend clinical, legal, and philosophical aspects in, for example, the founding of the American Society of Bioethics and Humanities.

Because of his focus on the health of the biosphere he attended to the international and planetary aspects of health ethics rather than just American issues. It is ironic that Potter is honored more outside of the United States, which is also indicative of the need for Americans and perhaps American bioethicists to develop international perspectives more fully. For example, because of the dominance of technology and molecular genetic approaches in American medicine (Potter 1995) many bioethicists have largely ignored global public and environmental health issues (Whitehouse 1999).

Van described the invention of the term bioethics as a "eureka experience." I shared such an experience in my own work with Van. In one of my early conversations, I suggested the idea of deep bioethics (as a blend of Van's global bioethics and deep ecology) (Potter and Whitehouse 1998). The advantage of the notion of depth in bioethics is that it adds another dimension to the spherical notion of a global bioethics. "Deep" introduces a spiritual dimension at the core of bioethics. Deep ecologists are those who feel a mystical connection to nature and who criticized those who addressed ecological issues only from materialistic and short-term perspectives (Naess 1995; Sessions 1995). Thus, deep bioethics encompassed both the intellectually broad, international nature of Van's interests while making explicit that nature is a source of values for bioethics. The concept of biophilia (Wilson 2002) or love of life can be viewed as consistent with deep bioethics. American bioethics and culture tends to focus on individual autonomy as a dominant value. Extending bioethics to consider not only human communitarian values but also to include communities of other living creatures is needed. The moral status of non-human life forms demands re-evaluation (Whitehouse et al 2001).

The concept of deep bioethics has not been elaborated, but I will attempt to do so in this paper. Van himself called it the third wave after the original bioethics formulation and then global bioethics (Potter and Whitehouse 1998). However, he eventually returned to the concept of

global bioethics in part because this had captured the imagination of international scholars. Deep bioethics is potentially an even greater challenge to secular bioethicists than global bioethics because it values intuition and bases some of its moral beliefs on spiritual connection to nature. As an ethical concept, though, it is limited by what is meant by the word "deep." Early deep ecologists assigned equal value to all life forms (Naess 1995). Other thinkers recognized that "cows do scream louder than carrots" (Sessions 1995), i.e., that systems thinking and moral deliberations need to recognize that, although all life has value, different values may dominate in different circumstances. For example, is the last member of a plant species more valuable than one member of a common insect species? I believe that exploring the depths of deep bioethics will be essential for without the spiritual, human life is meaningless. Survival enhancing human culture is based on shared beliefs and purposes. The co-evolution of human beings as biological and social entities in community needs to be better understood. The study of evolutionary medicine will likely contribute to an understanding of how health and values changed over time in response to different environments. An aspect of health is adaptation to environment. Community values are a blend of shared intellectual concepts and affect. They also change through time in response to cultural and environmental context. On the other hand, our values change our behavior and thus the environment we live in. Accordingly, our health as a species may change because of discordance between our evolutionarily determined biology and present environmental context. To the extent that values represent in part deep seated evolutionary programs for both self preservation and gene preservation they have the potential for affecting survival. Values serve to guide an organism when the limits of intellect problem-solving are met. As a cultural phenomenon, the post modern challenges to enlightenment thinking ask us to reconsider the limits of knowledge and technology. Other sentient life forms evidence behavior consistent with values of self-preservation, as well as, concern for community. Perhaps, all life forms have deep seated psychologically old, emotion laden; modifiable programs we call values. Blending critical thinking and compassionate valuing into wisdom of the collective will be essential.

The study of moral ontogenetic development has contributed to our understanding of human values. Much of the focus in moral development has been on youth to adulthood with interesting gender differences identified. The role of women in many societies is including more formal power in the workforce and politics. If this trend fosters more attention to relationships among people and with nature, the planet may benefit. As the population of our planet continues to age, the

moral development of our older citizens deserves more attention. As growing numbers of human beings are living longer lives and children are in more desperate social and economic straits, issues of intergenerational justice will become increasingly important.

The study of the phylogeny as well as ontogeny of values may be critical (Potter 1996). We need not assume that ontogeny recapitulates phylogeny (or vice versa) rather that they are both complex changing circumstances in which genes and environment interact. However, this endeavor will demand taking the moral status of non-human life forms more seriously than contemporary, particularly scientific, frameworks do. As a dominant cultural force we must watch science (and religion) in its response to life (and death) circumstances. Scientists often destroy life to understand life just as we eat to live. But, the respect shown to "subjects" -human and otherwise should be enormous. Arrogant statements about our abilities to control nature should be challenged. There is wasteful, disrespectful, excessive and heartless killing of animals in science. Bioethics should search out nature-friendly values, for example, as found in many indigenous spiritual and religious practices.

Another aspect of Potterian bioethics that distinguishes itself from other forms of ethics was its specific attention to the role of human cognition. Van was aware that human beings produced bioethical thoughts and feelings. In his first book he talked about cybernetic approaches and the need for us to understand the complex inter-relationships that occurred in natural systems. He drew insightful parallels between natural and cultural systems. As he grew older he intensified his interest in the process by which people learn to be wise about complex value judgments concerning natural systems. Part of his own growing wisdom resonated with his early focus on bridging to the future. Van was explicitly concerned about the future in a way many other bioethicists appear not to be. He felt that it was essential that we pay attention to issues that were difficult for human beings to grasp because of their complexity and long-term nature. Part of Van's wisdom was also to recognize the limitations of knowledge. In fact, he used the term toxic knowledge to point out that some knowledge, particularly if applied in the wrong way could in fact, be harmful. As a practicing scientist he was well aware of the dangerous ways in which new information gained through empirical science could be misused and lead to unwise actions. However, he avoided contentious dualistic arguments between reductionistic science and global humanities thinking and called for integration of the two.

These ideas about enhancing human thinking about complex systems, and integrating value considerations in our deliberations about the future, should be extended. The word wisdom is not often used in bioethical discourse nor in related fields such as philosophy, psychology and organizational behavior (Whitehouse et al 2001). Attending to broad conceptions of collective and organizational wisdom and enhancing such wisdom through educational and information system and even biological approaches should be a high priority.

From a deep bioethical perspective we should not be embarrassed about seeking wisdom or addressing the future. Too often wisdom is viewed as a rare commodity and those who seek it seen as arrogant. Yet, another view of wisdom is possible that we are all wise to one degree or another under one circumstance or another. Working towards wisdom as a process, not a body of knowledge, is necessary. Seeing shared wisdom as the goal is essential. Predicting the future is also seen as a potentially foolish activity. Yet, once again we can all do that to one degree or another under one circumstance or another. Peter Drucker's quote "the best way to predict the future is to create it" (after all we have no choice anyway) seems wise.

We must also recognize the increasingly important role of our "symbiotic" relationship with other silicon-based informational processing entities, computer and distributed information systems. Computers can extend our minds individually and collectively, temporarily and geographically. For example, projections of ecosystem changes could be a critical role for computers to help guide our collective future. Perhaps in the future computers can have values, become wise and even assume moral status in our carbon-based living systems.

Enhancing wisdom and fathoming the future could occur using many approaches. We may even develop pills to improve our cognition (Whitehouse 2003). Or perhaps we will become wiser by living longer through anti-aging technologies. Certainly we need to transform our educational organizations to promote wisdom and efforts to sustain our ecosystems. Creating learning communities that celebrate experiential learning and promote intergenerational stories seems essential. The Intergenerational School (Whitehouse et al 2000) was founded on the concept of real life learning in community in Cleveland, Ohio. Universities also need to promote value exploration as well as critical thinking about our future. Potter and colleagues suggested the idea of creating Professors of the Future (Potter 1970). Just as we want to procreate our genes, we want to promulgate our ideas. Enjoyable

gender relationships, including sex, are nature's way of ensuring children. Creating exciting stimulating educational opportunities are the cultural equivalents of biological reproduction. Learning should be as exciting (or nearly so) as sex. Our challenge in both domains of human sexual and learning relationships is to create cultural forms and organizations that promote optimal adaptive behaviors for the long run.

Avoiding simplistic dichotomies that create unproductive controversies, such as nature versus nurture, is critical to the evolution of a global and deep bioethics. Integrating perspectives from clinical medicine, genetics, neuroscience, philosophy and ethics (Hundert 1995) is in tune with Van's original efforts to bridge many fields relevant to biology and values. As Hundert points out, the easy answer to the nature-nurture debate is to say that both influences are always acting together in any clinical or other circumstance. However, the contribution of Hundert and others is to have us examine our very thinking about the broad categories that we use to try to understand reality. As he points out, a Hegelian focus on process and progress should permit us a deeper comprehension of how our minds interact with the world. In my view, part of the solution to avoiding unhelpful controversy is to recognize that nature is nurturing. We are part of a web of human relationships (society) but also the webs of nature (ecosystems). Culture evolved through evolution as an adaptive mechanism. Webs of human relationships are parts of the interacting web of all creatures. Mutual interdependence (not independence as we Americans like to emphasize) is the theme for both. We think of nature as fixed and stable (e.g. our genes) and culture as more dynamic in affecting human behavior. Nature is ever changing and culture can be stagnating. We are a part of nature; we are evolving not only to survive but hopefully to thrive. It remains to be seen whether our natural gifts of forethought and complex emotions will in the long run enhance quality of life or contribute to the destruction of life on the planet.

As a broad statement, one might claim that Eastern philosophies address relationship and process more intensively than Western philosophies. The Ying Yang symbol captures that categories are fluid and that, for example, nature and nurture are in dynamic relationship with each other (Whitehouse et al 2001). Moreover, within each force alone one finds the other. The differentiation between religion and philosophy is also less evident in the Eastern traditions, not so influenced by the so-called Enlightenment in Europe. My belief is that it will take more than a rational focus on concepts and even values, but rather an emotional commitment akin to a spiritual or religious transformation in order for us to help create a sustainable world. The

power of molecular and information sciences is increasing enormously. A global bioethics must embrace their potentialities as part of a positive attitude towards the future - it is in our nature and nurture to be curious and learn about ourselves and our worlds. Never must we forget that in our hearts we are still animals, albeit clever ones with potential for wisdom.

Relevance of Potterian Ethics to the Current Development of the Field of Bioethics

The field of bioethics is at a critical stage of evolution, having now passed the thirtieth year of the development of bioethics programs. It is in a phase of professionalization attending to both the ethical framework for clinical and industrial bioethical consultation and the creation of the next level of academic organizational success, namely, departments and PhD programs. The American Society for Bioethics and Humanities (ASBH) and the organizations that amalgamated to create this unified organization have considered creeds for ethics consultation. However, bioethicists are struggling with the need for and content of specific ethical creeds in their own practices. Such statements of basic values should address not only individual practice, but organizational ethical issues as well. For example, given the increasing number of health organizations that are themselves becoming more environmentally responsible, the ASBH should/could adopt a green policy for the selection of meeting sites and other organizational activities. Another aspect of ethics practice, which is under intense scrutiny, is consulting for the biotech industry. When do bioethicists risk becoming apologists for our materialistic, nature-controlling, conflict-ridden, fantasy driven, white male dominated, biotechnology industry? When do they really offer a chance for society (and industry) to hear the voice of reason (and passion) in independent opinions?

The content of PhD curricula in bioethics is another critical aspect of defining the core of bioethics. Exposure to biology, health sciences, and empirical ways of analyzing data are an important part of the curriculum. However, we should ensure that the humanities are not neglected. PhD programs modeled too closely after the sciences could in fact, continue the process of co-opting bioethics into accepting the dominant mode of how knowledge is created and disseminated. Might a bioethics PhD program actually bring wisdom back into those degree programs that purport to produce "doctors of love of wisdom?"

Potter's concern about biomedical ethics included the general inattention to organizational ethics and to public health concerns (Potter 1993). The Joint Commission on Accreditation of Health Care Organizations requires

that health systems have not only clinical but organizational ethics programs. Now is the time to think more deeply of our organizations as moral agents in community. The recent rash of ethical misadventures on Wall Street and in the press undermine fundamental trust in our society. Hospitals as dominant players in the health care scene should look at their treatment of life and death. Consider the birth experience. The hospital is the environment of the newborn infant and the mother who has just given birth. Both human beings must make major adaptations after this challenging experience and can do this best if they are together, because their interactions benefit each other's physiology in ways that create an upward spiral of health for them both. This can only happen if they remain together after birth. Hospitals do much to distort the birth of the mother (and father) and baby as mutual caregivers (Anderson 1989; Dombrowski et al 2001). At the other end of life hospital care for terminal patients is often abysmal. Technological fascination with extending life should be countered with an acceptance of care as a dominant value over cure during all phases of life but particularly near the end. Quality of life deserves more serious attention as a concept to capture the fundamental goals of health care. Hospital practices and policies should support, not limit, our caring for others from the very beginning to the end of life.

However, health care systems should focus not just on policies for the organization's internal workings but also on the broad impact of hospitals and other organizations on health. Many hospital health systems have a negative ecological impact on their environment by virtue of their enormous size as they create parking lots and discharge highly toxic waste into our watersheds. It is time that bioethicists stand up and ask our health care systems "Are you doing enough for the health of the environment and our communities?"

The post 9-11 focus on bioterrorism and public health highlights that our health system priorities in this regard are distorted. Too much money is spent on acute technological medicine compared to preventative psychosocial education. It is time for bioethicists to address the broad implications of bioterrorism on our health care systems and values. Who gets labeled a terrorist is a political act. The label terrorism (or, more powerfully focused word, terrorist) can shift in meaning depending on political and environmental circumstances. Most generally, bioterrorism could be viewed as the application of the power of biology and its ability to create fear and harm amongst individuals and communities. Perhaps in the long run unintentional bioterrorists (of a different kind) at home who are part of the health establishment will be a greater threat to our long-term health than foreign bombers. A global bioethics can be the

ultimate anti-terrorist force by searching across countries and religions for common values that bind us together (Potter 1994; Whitehouse 2001b). Such bridging is so critical at this time in the history of our species. A deep bioethics based on love of life could be an essential part of changes in attitudes necessary for sustaining life on the planet.

A major current focus in bioethics is exploring the implication of genetic technology. Whereas gene-based diagnostic tests and therapies offer promise, this promise is likely to come only at the cost of tremendous material investment in the area. This investment may contribute to the neglect of interventions in a community health framework that would in the short and long-term have greater benefits for the health of the world's population of people and species than effects on rare genetic or late life chronic diseases. Moreover, population genetics and studies of genes and environment deserve more focus. Challenges of genetic testing in AD illustrate some of the fantasies about molecular medicine. To date, much of the attention on genetics has been on an individual's right to know about their genetic make-up and the promise of individual therapies. However, the complexities of susceptibility genes (for example, apolipoprotein E in AD) challenge experts and lay persons to comprehend the value of such information (Barber and Whitehouse 2002). For example, racial classification raises issues of whether susceptibility data obtained on different populations can be applied to individuals. Information about genetic susceptibilities are obtained from associations between phenotypes (AD) and genotypes (apolipoprotein E) in population samples utilizing this information in individual clinical counseling depends on the many theoretical and empirical assumptions. Can we mathematically model the risk information adequately? Perhaps, most importantly, are the many population studies that are based on larger convenience samples. Does the risk information even pertain to the individual client? Such conceptual and practical limitations undermine the dominant vision of personalized genetic medicine as the wave of the future.

I believe that the influence of bioethics is growing. Thus, it is so essential that we help educate the public about the broad issues dealing with values and health. We must build our commitment to future generations rather than focusing on narrow current medical, technologically expensive programs. Potter started an electronic global bioethics network (Potter 2001), which was linked to like-minded international efforts (Chiarelli et al 2000). Attempts are being made to extend this network and organize a conference to honor Potter and extend his work. Efforts to link globally-minded organizations and projects committed to environmental sustainability should be continued.

Why Rebirth Bioethics?

The main reason for writing this article is to extend the work of Van Rensselaer Potter. In my view, he was an intellectually challenging and morally exemplary human being. His personal model for us to live an authentic life philosophy is even more essential today. His ideas do represent a bridge to the future. In remembering Van and acknowledging his values and ideas, it is also important to remember him at this particular time in the history of bioethics. I hope that rebirthing the original conceptions of bioethics will prevent the dementia of the field, which is characterized by a selective amnesia of the past and inattention to certain critical issues for the survival of life on the planet. Moreover, there is a concern that underlying this dementia is a dysexecutive disconnection syndrome, which relates to distorted goals and values (Whitehouse 1999; Potter 1999a). Bioethicists too often mirror the values of our health care system rather than challenge them.

In summary, this paper will change the world. Every word, idea, action, particularly if communicated to others, creates some change in our shared semantic space or noosphere. Bioethics is a key word in our lexicon. As Van and others have expressed, the term bridges science and humanities through its clinical practice, legal, and philosophical aspects. Bioethics as a profession needs to shift its gaze from principals such as autonomy and professional recognition to relationships in community, intuition, and public and environmental health. This is more than rethinking priorities. In fact, this is not a cognitive task at all. This job is for the human spirit. So my colleagues, I care what you think and more what you feel but, most importantly, what you do to ensure a world for generations to come and for all life on the planet.

After I wrote this last sentence I found this poem Van wrote to me on April 23, 1997.

Many days are yet to be
Many days but not for me
Many things I've yet to do
If not me, then done by whom?

Many days are yet to be
Many days remain for thee
So choose with care what you will do
And I'll be here to keep it true.

Van Rensselaer Potter, April 23, 1997

Hi Van, this one's for you,
Peter

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References

- Anderson, G. C. 1989. Risk in mother-infant separation post birth. *Image, Journal of Nursing Scholarship* 21:196-199.
- Barber, M., and P. J. Whitehouse. 2002. Susceptibility Testing for Alzheimer's disease: race for the future. *The Lancet Neurology* 1:10.
- Chiarelli B., and H. F. Schweinsberg. 2000. *Global Bioethics: Domains and Mission*
- Statement. European Association of Global Bioethics, Florence, Italy, 18 December.
- Dombrowski, M. A., G. C. Anderson, C. Santori, and M. Burkhammer. 2001. Kangaroo (Skin-to-Skin) care with a postpartum woman who felt depressed. *MC Nursing* 26(4): 214-216.
- Engelhardt, Jr., H. T. 1996. *The Foundations of Bioethics (2nd Ed)*. Oxford: Oxford University Press.
- Frumkin, H. 2001. Beyond toxicity-Human health and the natural environment. *American Journal of Preventative Medicine* 20(3): 234-240.
- Hundert, E. M. 1995. *Lessons from an Optical Illusion: On Nature and Nurture, Knowledge and Values*. Cambridge, MA: Harvard University Press.
- Jonsen, A. R. 1998. *The Birth of Bioethics*. New York: Oxford University Press.
- Kaebnick, G. E. 2000. On the sanctity of nature. *Hastings Center Report* 30(5): 16-23.
- Leopold, A. 1949. *A Sand County Almanac*. New York: Oxford University Press.

- Marmot, M. G. 1998. Improvement of social environment to improve health. *The Lancet* 351:57-60.
- McKim, R. 1997. Environmental ethics: The widening vision. *Religious Studies Review* 23(3): 245-250.
- McMichael, A. J., and R. Beaglehole. 2000. The changing global context of public health. *The Lancet* 356:495-99.
- Naess, A. 1995. *The deep ecological movement: Some philosophical aspects*. In *Deep Ecology for the 21st Century*. Boston: Shambhala.
- Potter, V. R. 1962. Bridge to the future: The concept of human progress. *Journal of Land Economics* 38:1-8.
- Potter, V. R. 1970. Bioethics: The science of survival. *Perspectives in Biology and Medicine* 14:127-153.
- Potter, V. R., D. A. Baerreis, R. A. Bryson et al. 1970. Purpose and function of the university: University scholars have a major responsibility for survival and quality of life in the future. *Science* 167:1590-93.
- Potter, V.R. 1971. *Bioethics, A bridge to the future*. Englewood Cliffs: Prentice-Hall.
- Potter, V. R. 1975. Humility with responsibility-A bioethic for oncologists: Presidential Address. *Cancer Research* 35:2297-2306.
- Potter, V. R. 1988. *Global bioethics: Building on the Leopold legacy*. East Lansing: Michigan State University Press.
- Potter, V. R. 1993. Bridging the gap between medical ethics and environmental ethics. *Global Bioethics* 6(3): 161-164.
- Potter, V. R. 1994. An essay review of - Global responsibility. In *Search of a new-worldethic*. *Perspectives in Biology and Medicine* 37(4): 546-550.
- Potter, V. R. 1994. Science, religion must share quest for global survival. *The Scientist* May.
- Potter, V. R. 1995. Global bioethics: Linking genes to ethical behavior. *Perspectives in Biology and Medicine* 39(1): 118-131.

- Potter, V. R. 1996. Discussion Section: Real bioethics: Biocentric or anthropocentric? *Ethics and the Environment* 1(2): 177-183.
- Potter, V. R., and P. J. Whitehouse. 1998. Deep and Global Bioethics for a Livable Third Millennium. *The Scientist* 12(1): 9.
- Potter, V. R. 1999a. On dying with personhood: Socratic death. *Perspectives in Biology and Medicine* 43(1): 103-111.
- Potter, V. R. 1999b. Fragmented ethics and "Bridge bioethics." *Hastings Center Report* 29(1):38-40.
- Potter, V. R. 1999c. Bioethics, biology, and the biosphere. *Hastings Center Report* Jan/Feb: 38.
- Potter, V. R. 2001. *Final Message to Global Bioethics Network* (E-mail, unpublished), 6 September.
- Reich, W. T. 1994. The word "bioethics": Its birth and the legacies of those who shaped it. *Kennedy Institute of Ethics Journal* 4(4): 319-335.
- Reich, W. T. 1995. The word "bioethics": The struggle over its earliest meanings. *Kennedy Institute of Ethics Journal* 5(1): 19-34.
- Sagoff, M. 1991. Zuckerman's dilemma-A plea for environmental ethics. *Hastings Center Report* Sep/Oct: 32-40.
- Sessions, G. (ed). 1995. *Deep Ecology for the 21st Century*. Boston: Shambhala.
- Stevens, M. L. T. 2000. *Bioethics in America: Origins and Cultural Politics*. Baltimore: The Johns Hopkins University Press.
- Whitehouse, P. J. 1999. The Ecomedical Disconnection Syndrome. *Hastings Center Report* 29(1): 41-44.
- Whitehouse, P. J., E. Bendezu, S. FallCreek, and C. Whitehouse. 2000. Intergenerational Community Schools: A New Practice for a New Time. *Educational Gerontology* 26: 761-770.
- Whitehouse, P. J., J. Ballenger, and S. Katz. 2001. How we think (deeply but with limits) about quality of life: The necessity of wisdom for aging. In *International Library of Ethics, Law and the New Medicine*, vol 12, Aging: Decisions at the End of Life, ed. D. N. Weisstub, D. C.

Thomasma, S. Gauthier, and G. F. Tomossy, 1-19. The Netherlands: Kluwer Academic Press.

Whitehouse, P. J. 2001a. In Memoriam - Van Rensselaer Potter: The original bioethicist. *The Hastings Report* 29(1): 12.

Whitehouse, P. J. 2001b. Letters to the Editor: The New Age of Anti-Terrorism. *The Gerontologist* 41(6): 4-5.

Whitehouse, P.J. 2002. Special Section First Voices. Van Rensselaer Potter: An intellectual memoir. *Cambridge Quarterly of Healthcare Ethics* 11:331-334.

Whitehouse, P. J. 2003. Paying Attention to Acetylcholine: The key to cognitive enhancement. *In Progress in Brain Research*. The Netherlands: Elsevier Science B.V.

Wilson, E. O. 2002. *The Future of Life*. New York: Alfred A. Knopf.

http://www.bioethics.net/journal/j_articles.php?aid=71