

Global Bioethics and Potter's Criticisms of the Concept of Human Progress

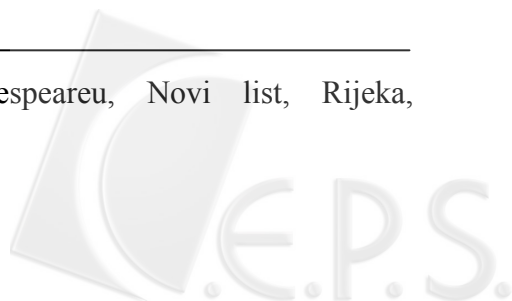
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Van Rensselaer Potter, American oncologist, made his first journey into the field of philosophy forty years ago at age 51. It initiated his later reflections on the relationship between ethics and biological sciences that finally resulted in the conception of the necessity of their linkage. He formulated his principal philosophical vision by the term *bioethics* 28 years ago, and thus he entered into the history of bioethics as the person who “coined” its name.

In the meantime, bioethics has become a broad interdisciplinary and multidisciplinary field of debates on moral issues in science, medicine, health care, ecology, population policy, agriculture, and veterinary medicine etc., besides being an academic discipline taught at almost all outstanding universities throughout the world. In 30 years of its existence, it has met with even two encyclopedias (in 1978 and 1995), four world congresses (1st in Amsterdam in 1992, 2nd in Buenos Aires in 1994, 3rd in San Francisco in 1996 and the 4th in Tokyo in 1998), as well as with a number of continental, regional and national bioethics conferences, symposia, roundtables, workshops and other meetings. Many bioethics institutes, centers and departments, national and international professional associations have been established in all quarters of the world today, and a huge number of books, journals and newsletters have

Segota Ivan : Bioetika konkurira Shakespeareu, Novi list, Rijeka, 7.06.1998.(29)



been published. Bioethics and its issues have also been dealt with in the theatre and in several films and TV-series. However, Potter was hardly mentioned in all that, and when it actually happened, it has never been emphasized that he was the “father” of bioethics, or at least one of its meritorious founders, but rather as its “godfather” who only named the newborn.

I was convinced of that myself during my first bioethics investigations in the United States. Since 1993, searching among other things for the origin of the word bioethics, which was not to be found in dictionaries and encyclopedias published before 1974, and even when I found it, the author was not mentioned, I kept inquiring at every occasion who the “inventor” of bioethics was, as Auguste Comte was for *sociology*, Jeremy Bentham for *deontology*, Thomas Percival for medical ethics etc. I had such an opportunity in Cleveland, Ohio, in autumn 1993 during the annual session of the first American bioethics society-the Society for Bioethics Consultation- when Vladimir Verbitsky, a colleague from Moscow and I were elected members of the Society. It was at the dinner party at the Marriott Society Center, where Verbitsky and I were introduced to other members of the Society that I heard about Potter. I was seated next to Ronald Miller, Professor of Bioethics at the University of California, who had previously been an American diplomat in Europe for a certain period. In the conversation with him during the dinner I learned what I was interested in: the term bioethics was “coined” by Van Rensselaer Potter, oncologist from Madison. On the reverse side of his visiting- card Miller wrote the title of Potter’s book where the word bioethics first appeared: “Bioethics: Bridge to the Future”, 1971, Englewood, Cliffs, N.J.: Prentice-Hall.

The following year I found out in an Italian review for science and ethics KOS that in Trento, Italy, a journal of bioethics “Global bioethics” was issued and Potter was one of its editors. The article by Paolo Colombo titled “A New Review of Bioethics” (*Una nuova rivista di bioetica*) stated that Potter, after his term “bioethics” had been used exclusively in relation to issues of medical

ethics, in 1988 suggested a new name to be introduced for the “science of the balance between humans and nature” which was “the bridge to the future of mankind”- “global bioethics”.² His idea was accepted by Brunetto Chiarelli, Professor at the University of Florence and general manager of the Institute for Anthropology, who established the Italian Society for Bioethics in Trento a previous year (in 1987). This society issued its own journal “Bioethics Issues” (*Problemi di bioetica*) and Chiarelli changed its name into “Global Bioethics” in 1992. I was advised on this matter by Potter himself in his interview in 1998 when he said that after the publication of his book on global bioethics (the book in question is *Global bioethics: Building in the Leopold Legacy*, Michigan State University Press, 1988) he had been invited to Italy by Brunetto Chiarelli - all expenses paid – to give a lecture on global bioethics and following this event Chiarelli had given a new name to his journal and offered co-editor post to Potter, which had been accepted.³

In mid 1998, I read Potter’s name among the anticipated participants of the 4th World Congress of Bioethics which was to be held in Tokyo at the end of the year (November 4-7, 1998). The Congress was prepared under the slogan “Global bioethics: East and West, South and North” and Japanese organizers were eager to welcome the creator of the expression “Global Bioethics” at the Congress. I wanted to take the advantage of that opportunity for an interview with Potter, as one of the most prominent bioethicists and actually its creator of who had been undeservingly put into the shade of the bioethicists who transformed bioethics into a synonym for medical ethics. My aim was to learn more about him and his work in order to introduce him to the public in Croatia, particularly to my students in Rijeka. Therefore I prepared about ten questions for Potter before I left for Tokyo, but he did not come to Tokyo. Hyakudai Sakamoto⁴ regretted to inform me that Potter had cancelled his arrival due to bad health and instead had sent videotape with his lecture.

The videotape was scheduled in the Congress program by Sakamoto and

one of top sessions was accorded for its projection and discussion in the central congress hall. Then, during the whole Congress, it was on the TV-screen in the Hall of Nihon University in Kudan-Minami street in Tokyo where the Congress was held. Here is what this message-which also provides information about the author and his biography-states.

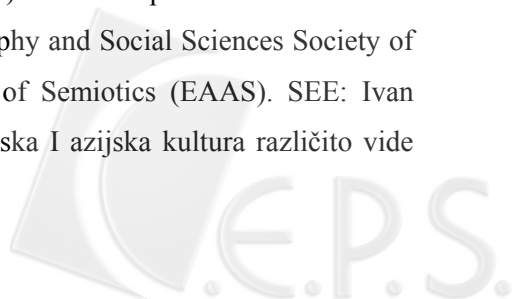
“**Hello!** My name is Van Rensselaer Potter II. For the past 58 years I have been a member of the Department of Oncology, better known as the McArdle Laboratory for Cancer Research has, at the University of Wisconsin Medical School, where I am now an Emeritus Professor.

Today, after six decades of observation I proclaim that: **Global Bioethics, as a new Science Ethics, is Required for long-term Human Survival.**

²Paolo Colombo, Una nuova rivista di bioetica, KOS, Istituto Scientifica H San Raffaele, Mnano, Ottobre 1992, p.50

³Ivan Šegota, Interview with the “father” of bioethics Van Rensselaer Potter, Novi list, Rijeka, 6.04.1999

⁴Sakamoto is an Emeritus Professor of Japanese Aoyamagakuin University and President of the Asian Bioethics Association (ABA) and the Japanese Association of Bioethics (JAB), he is also President of the Philosophy and Social Sciences Society of Japan (PSSJ) and the Eastern Asian Association of Semiotics (EAAS). SEE: Ivan Šegota, interview with Hyakudai Sakamoto: Europska I azijska kultura različito vide prirodu, Novi list, 10.01.1999.(36)



I this I join Professor Hyakudai Sakamoto, President of the 4th World Congress of Bioethics, in the theme of Global Bioethics, East and West, South and North.

But before Global Bioethics came *Bridge Bioethics*. I'm going to tell you about the early development of Bridge Bioethics and its development in *Global Bioethics and Deep Bioethics*.

Bridge Bioethics is shorthand for the vision I crystallized in the word **bioethics** when I coined it in 1970.

That vision is captured in the coupling of the Word Bridge with bioethics.

The word bridge is used because bioethics was seen as a new discipline that would forge a **bridge** between science and the humanities, or, more explicitly, a **bridge** between **biological** science and ethics, thus bio-ethics.

But this **bridge** was only to be a means to an end.

The end, or objective, or primary vision was to cast bioethics as still another bridge, that is as a **bridge to the future**, and indeed Bioethics, Bridge to the Future was the title of my first book on the subject, in 1971.

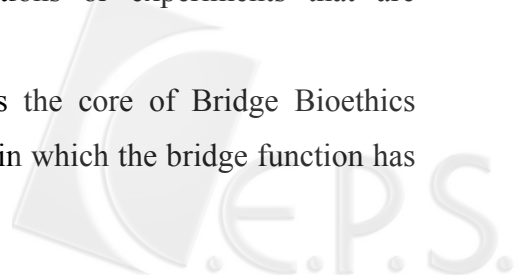
So: think of Bridge Bioethics thus:

1. Prima function: bioethics as a bridge to the future.
2. Enabling function: bioethics as a bridge between disciplines.

So the original theory bioethics was the intuition that the long-range survival of the human species in a decent and sustainable civilization requires the development and maintenance of a **system** of ethics. Such a system is **Global Bioethics**, based on intuitions and reasoning constrained by empirical knowledge from all the sciences but especially biological knowledge.

In this statement I use the word empirical in the usual sense: empirical knowledge is knowledge based on observations or experiments that are independently verifiable.

This proposed system of ethics remains the core of Bridge Bioethics today with its extension into Global Bioethics, in which the bridge function has



called for the merging of medical ethics and environmental ethics on a world-wide scale to preserve human survival.

The medical ethics presently carried on with bioethics as its label is a short-term tactic, actually a clinical ethics dealing with the dilemmas faced by physicians, their patients, and the patients' caretakers. *Global Bioethics calls on the medical ethicists* to consider the original meaning of bioethics and extend their thinking and activities to public health issues world-wide. Medical ethicists are obligated to consider not only day-to-day clinical decisions but also the long-term consequences of the actions they recommend or fail to consider. A reconstructed medical ethics would be bridged to a long-term environmental ethic and its short-term guidelines and merge with it to form the second phase of Bridge Bioethics, namely Global Bioethics, a system whose mission is the definition and development of an ethic for sustainable long-term human survival.

Global Bioethics: Building on the Leopold Legacy became the title of my book published by Michigan state University Press in 1988, just 10 years ago.

In the book I paid tribute to Aldo Leopold, another Wisconsin Professor, whose Land Ethic in 1946 was part of the Leopold Legacy, now being widely discussed in the Journal of Forestry.

The Concept of Human Progress

Before discussing the third stage of Bridge Bioethics, I'd like to tell you about how it all began because that explains what I had in mind when I coined the word bioethics. It really started in 1962, when I was invited to speak as an alumnus at South Dakota State University. The school in one of the Land Grant Colleges and the occasion was the Centennial Celebration on the inauguration of the land-grant system by the signature of Abraham Lincoln on the Morrill Act in 1862. Although I was known for my 22 years of cancer research I decided that the occasion called for something more philosophic. I decided to

speak on something that had been on my mind but had never been expressed.

What concerned me then, some 36 years ago, when I was 51 years old, was the questioning of progress and where all the materialistic advances by science and technology were leading Western culture. I hit upon what for me became the mission of bioethics: an attempt to answer the question facing humankind-what kind of future are we headed for, and do we have my options? Thus bioethics became a vision calling for a discipline that would guide humankind along a Bridge to the Future, and indeed, it all began with that lecture in 1962, in which the task was to examine our competing ideas of progress.

So it was that the title of that lecture was “Bridge to the Future, the Concept of Human Progress”. The Metaphor Bridge to the Future was used 9 years before the word Bioethics was invented and defined.

The lecture was published in the *Journal of Land Economics* and reprinted in the 1971 book that defined the mission of bioethics in its title: *Bioethics Bridge to the future*.

The 1962 lecture had described three images of progress as those of religion, of material gain, and as scientific/philosophic. I concluded that only the scientific/philosophic concept of progress, which places its emphasis on long range wisdom, is the only kind of progress that can lead to survival. I had referred to Charles Dawin and the theory of evolution by natural selection, which Darwin believed would lead to “progress toward perfection” as stated at the end of his book in 1859 just three years before the occasion celebrated as a centennial.

Today, in agreement with the author of “Wonderful Life”, Stephen Jay Gould, no one believes that biological evolution will result in “progress toward perfection” and we are far from any agreement that the discipline of bioethics building a bridge between biological knowledge and the up-graded philosophic specialty of ethics can merge the disciplines and function adequately as a

bridge to the future.

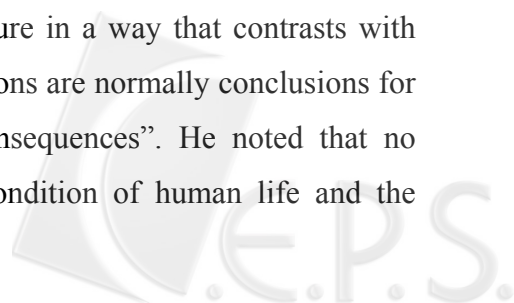
Ethics as Concern for the Future

When my articles in 1970 and the book in January 1971 were publicized by TIME magazine on April 19, 1971 few people appear to have been alerted to the existence and meaning of the new word, bioethics, to say nothing of the vision for the future. But the word had hit the media, and bioethics became part of the language. Subsequently, the original meaning of bioethics was exploited and redefined by public relations and medical ethics specialists, and is now widely seen as clinical ethics.

I decided to call attention to this dichotomy between my vision for bioethics and that of the medical ethicists when I addressed the members of the American Association of Cancer Research in my Presidential Address in 1975 in the lecture called Humility with Responsibility, a Bioethic for Oncologists.

The one exception that did not by pass the vision of bioethics as a “bridge to the future” was Professor George Kieffer of the University of Illinois (Urbana) who read the 1971 book, agreed with its premises, and used it as a beach-head for a broader and more extensive treatment in his book *Bioethics, A Textbook of Issues* in 1978. George Kieffer quoted my 1971 book extensively and went considerably beyond it. His book should be read by all who value the worldwide establishment of bioethics as an absolute **must** for opening a bridge to the future.

Kieffer agreed with the emphasis on the future and argued that there is a close link between images of the future and ethics. Going back to fundamentals he wrote “Ethics deals with the realm of what **ought to be** and thus automatically presupposes a picture of the future in a way that contrasts with the present. He commented that “Ethical decisions are normally conclusions for guiding future actions in terms of future consequences”. He noted that no previous ethics had to consider the global condition of human life and the



far-off future, much less the fate of the entire species. Kieffer therefore concluded: “Accordingly, another aspect of the future must be an ethic toward nature”. Thus, he adopted the word Bioethics and used it in the title of his book.

The Dilemmas of the Ethics Specialties

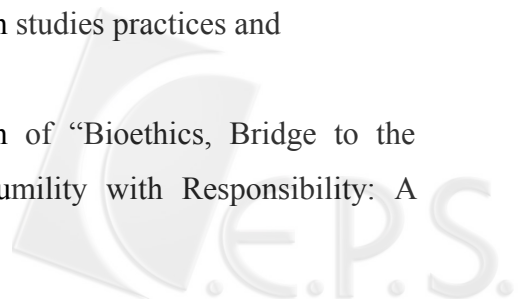
In the beginning, Bridge Bioethics was intuitively pictured as a bridge between classical ethics and empirical science. The proposition that ethics is constrained by empirical biological observations and experiments as really a very new idea, and is presently being vigorously advanced by Professor Edward L. Wilson of Harvard University. Now, at the turn of the new millennium, there is no established ethics in classical philosophy that can provide guidelines for the ethical solution of today’s concern for the future. In my view, Bioethics as a science for human survival has to establish Bridges to the already existing social ethical ideas and anticipated norms.

That principle has to be introduced to individuals at an early age.

Bridge Bioethics finds no firm ethical terminal at the other end of the bridge to the humanities. The Age of Specialization has taken control: Ethics has become a matter of Applied Ethics. The function of Bridge Bioethics becomes one of building **bridges to each** of the specialties and bridge **between** the specialties in order to further develop a Global Bioethics that sees human welfare in the context of a respect for Nature.

What are these ethics specialties and what are some of the dilemmas they face? First I will list several that I can think of. They include Medical Ethics, widely labeled bioethics but clearly a specialty not engaged in bridge building. It was defined as a specialty by LeRoy Walters in 1978 some 20 years ago: “Bioethics is the branch of applied ethics, which studies practices and developments in biomedical fields.”

This definition ignores the 1971 vision of “Bioethics, Bridge to the Future” and the 1975 published lecture “Humility with Responsibility: A



Bioethic for Oncologists”.

One dilemma faced by today’s Medical Ethics is the problem of when not to apply all the available technology. But as early as 1971 I suggested that “The moral problem arises because medical science has achieved partial success in maintaining the machinery without maintaining the (person).” In present times, medical ethicists should get beyond monitoring technological fixes for the over-privileged. They should collaborate with social ethicists and demand health measure for the underprivileged at home and in the Developing World, where poverty combines with AIDS, malaria, parasitism and tuberculosis.

Environmental Ethics is clearly the ethic called for by Aldo Leopold in his famous Land Ethic: an ethic dealing with humankind’s relation to the land and the plants and animals which grow upon it.

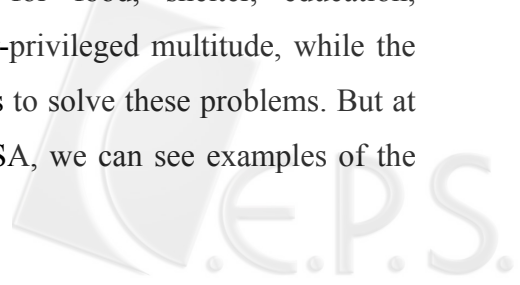
As in medicine, the dilemma is how to achieve short-term success or profit without destroying future options for survival.

Agricultural Ethics is a recent specialty that sees an ethical obligation to provide a sustainable food supply for an expanding world population.

Again, the dilemma is how to achieve current food and fiber needs without contributing to future difficulties by ignoring the need for biological diversity in the natural world. The forestry and the fishing industries face dilemmas that overlap those of both Environmental Ethics, and Agricultural Ethics.

Social Ethics boils down to a search for solutions to the conflict between the over-privileged and the under-privileged. Every other issue hinges on that conflict: the drive for more privilege versus the struggle for survival.

Many large cities in Asia and Africa seem like the ultimate examples of a privileged few **ignoring** the basic needs for food, shelter, education, employment, and human dignity for the under-privileged multitude, while the UN Program for Human Development attempts to solve these problems. But at the turn of the new millenium, here, in the USA, we can see examples of the



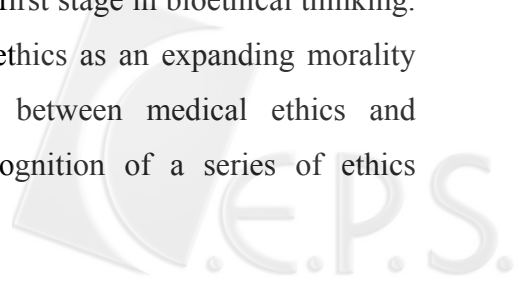
dilemma not only far away but also in our own backyard. Today, as never before, the over-privileged need to adopt an ethic of concern for the under-privileged, a renewal of the French concept **Noblesse Oblige**, the phrase coined after the French Revolution by the Duc de Levis in 1808, too late then and largely ignored now. We urgently need a privilege ethic, not an unconcerned attitude of “after us, the deluge”. In 1988 in the **book** *Global Bioethics I* expanded on the theme that a demand for world-wide human health for all the world’s people and not for just a chosen few, with decreased infant mortality and voluntarily controlled rates of **human reproduction**, is part of the Global Bioethics. Social Ethics must be bridged with all the other ethics specialties in dealing with its basic conflict.

Meanwhile, **Religious Ethics** searches for a basic morality that transcends sectarian conflicts. The basic dilemma is the failure of secular education to develop a sense of individual responsibility and moral integrity in youths while informing them of the basic biological facts of evolution and adaptation.

Capitalist Ethics is a category usually not considered, but the free market philosophy is claimed to be an instrument for social good acting through the so-called invisible hand of self-interest that Adam Smith, a Scotch economist, portrayed in 1776. But, in fact, it is the rapacious hands operating in the free market of a global economy that cuts down the rainforest and empties to solve the dilemma of simple justice in balancing human rights against maximum profit for few.

Deep Bioethics, The Third Stage of Bioethics

The concept of Bridge Bioethics was the first stage in bioethical thinking. The second stage was the idea of Global Bioethics as an expanding morality that would result from building a bridge between medical ethics and environmental ethics. In the 1990’s the recognition of a series of ethics

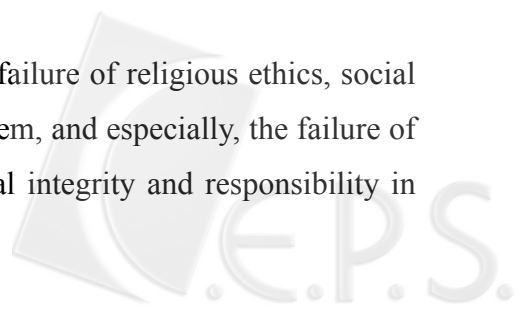


dilemmas has led to the recognition that a bridge between medical ethics and environmental ethics are not enough. All of the ethics specialties need to be expanded from their short-term dilemmas to their long-term obligations.

The basic idea of Deep Bioethics was conceived by Professor Peter J. Whitehouse of Case Western Reserve University in Cleveland, Ohio, after reading about Arne Naess and Deep Ecology. I believe that he sees Deep Bioethics as a dimension that probes bioethics more deeply than pure empiricism, while calling forth inner distinction between right and wrong that are not readily quantitated. Together we published an article on January 5, 1998, with the title “Deep and Global Bioethics for a Livable third Millennium”.

In 1990 I had published an article called “Getting to the Year 3000: *Can Global Bioethics Overcome Evolution’s Fatal Flaw?*” Parenthetically, the fatal flaw from the standpoint of avoiding **extinction** if the priority given to short-term **gain** relative to long-term **prudence**. In 1997, Professor Steven Brint, a sociologist at the University of California, Riverside, gave a frightening answer to the question raised by my article on Getting to the Year 3000. Without addressing the question of the fatal flaw directly he published a book with the title “*In An Age of Experts. The Changing Role of Professionals in Politics and Public Life*”. Steven Brint documented the fact that profound changes have taken place in professional attitudes. He noted that early in this century professional status was defined as much by a sense of ethical and public responsibility as by specialized knowledge. Brint concluded “Today, professionals increasingly define themselves strictly in terms of their command of technical matters, by their marketable knowledge and skills, while they are relatively skeptical about moral certainties.” And he might have added, skeptical about public responsibility.

In Brint’s book we see the results of the failure of religious ethics, social ethics, the capitalist ethics, the educational system, and especially, the failure of political leadership to develop a sense of moral integrity and responsibility in



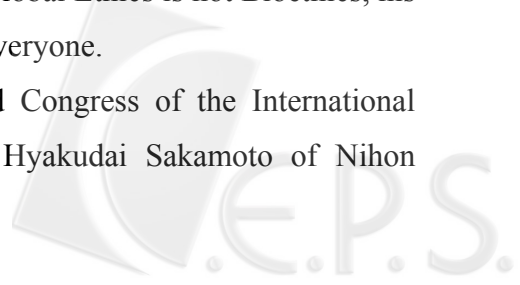
recent generations as its young people have matured. The failure result to a large extent from the lack of balanced biological training and lack of application of consequential knowledge by professionals and people at large – a lack of training that examines the connections between biological facts and moral integrity.

In 1995 I wrote the article entitled “Global Bioethics: Linking Genes to Ethical Behavior”. Today, I might call it *Deep Bioethics: Linking Genes to Ethical Behavior*.

Could anything be philosophically deeper or more deep bioethically than “linking genes to ethical behavior”? Can the educational and ethical professions deal with the pace of new developments, new scientific findings, that link genes to personalities and link human behavior to our biological heritage and to the dynamic interaction between complex brain processes and a vast, ongoing array of social inputs. Genetic science of too important to be left to the scientist. No doubt the scope of these interactions will change over time and it is my hope that future generations can be motivated to develop brains that enhance the human potential for a more intelligent, bioethically integrated, global co-operation. **Now**, going beyond the philosophy of depth according to the Deep Bioethics idea we need to **broaden** bioethics. For **breadth** we must return to the image of Global Bioethics.

In 1998, the theologian, Hans Kung of Tübingen, Germany has called for A Global Ethics for Global Politics and Economics to which all nations and peoples of the most varied backgrounds and beliefs should commit themselves. For Hans Kung the core global ethic is human-centered and although praiseworthy it falls short of explicit respect for Nature and for cultures outside of those of Jews and Christians. Although his Global Ethics is not Bioethics, his basic precepts seem likely to be acceptable to everyone.

In a stirring lecture at the Third World Congress of the International Association of Bioethics in 1996 Professor Hyakudai Sakamoto of Nihon



University looked toward a New Foundation for **Asian** Bioethics. In the present post-modern age, he said, it is necessary for our human society to **globalize** bioethics for future development that denies the universality of Euro-American bioethics. Commenting on Asian attitudes, he notes that Nature is something not to be **conquered** but something to be **lived with**. He called for a new refined methodology for **global bioethics**.

Looking toward the 21st century and the Third Millennium we need to combine **Deep** Bioethics, as it explores links between genes and ethical behavior, with the new **Global** Bioethics that goes far beyond the legacy of Aldo Leopold to embrace the breadth of a dialogue between Hans Kung and Hyakudai Sakamoto.

As I enter the twilight of my life that Bridge Bioethics, Deep Bioethics and Global Bioethics have reached the threshold of a new day that goes far beyond anything I could have imagined or developed. But I need to remind you of the 1975 message emphasizing humility with responsibility as a basic bioethic that follows logically from admission that probabilistic or partly random happenings have consequences in human and other living systems. Humility is the proper consequence to follow the statement “I may be wrong”, and it calls for responsibility to learn from experience and from available knowledge.

As we enter the era of the third millennium, we become increasingly aware of the dilemma posed by the exponential increase in knowledge without an increase in the wisdom needed to manage it. Albert Schweitzer was keenly aware of the problem in 1948 when he said, “Our age has discovered how to divorce knowledge from thought, with the result that we have, indeed, a science which is free, but hardly any science left which reflects.”

From the beginning I have regarded bioethics as the name of a new discipline that would combine knowledge and reflection. Bioethics should be seen as a cybernetic approach to humankind’s ongoing search for wisdom,

which I defined, as the knowledge of how to use knowledge for human survival and for improvement of the human condition. In conclusion, I ask you to think of bioethics as a new science ethic combining humility, responsibility and a competence that is interdisciplinary and intercultural, and that heightens the sense of humanity.

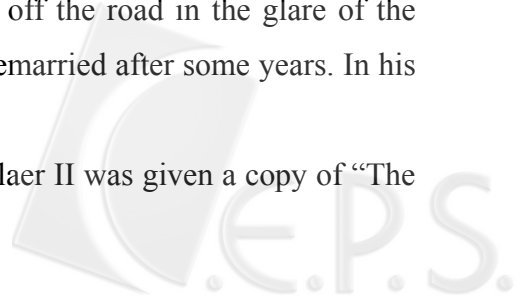
Thank you for staying.”

After the projection of the videotape I crossed out some questions for Potter since they were answered by this lecture, but I added some new ones and sent them by fax from Tokyo to Madison. By using Potter’s answers which I received a few days after my return to Rijeka and owing to our further correspondence and obtained materials, I could write a biography of Van Rensselaer Potter II?

Potter was descended from an American farmer’s family that at the beginning of this century lived in Day County in northeastern South Dakota. He was born on August 27, 1911 in the home that was built by his ancestors in 1882 when they moved from Macomb, Illinois to Day County. They were “VR” and his wife Jenny Tobin, so Potter assumes Van Rensselaer was a family name at that time, but he has never found evidence for that conclusion. His parents were Arthur Howard Potter and Eva Herpel Potter and he was named after his paternal grandfather Van Rensselaer who died of stomach cancer at age 52, a year before Potter was born.

When Potter was 6 years old he lost his mother. He remembers that even today. One snowy night in November 1917 his parents drove three miles to Pierpont while he stayed with his grandmother. However, his mother did not return. On the way back his parents’ car went off the road in the glare of the oncoming headlights. His father survived and remarried after some years. In his new marriage he had two more children.

When he was 15, young man Van Rensselaer II was given a copy of “The



story of Philosophy, *The Lives and Opinions of the Great Philosophers*” by Will Durant as a gift from his aunt. The book might have had a decisive effect on Potter’s subsequent inclination towards philosophy. This inclination was obviously not strong enough to lead him to the study of philosophy, but nevertheless it was sufficient to urge him to philosophical reflections even as an oncologist. That is why-as he himself said in the quoted Tokyo message- in 1962 he felt a need, although an oncologist for 22 years, to give a speech on “something more philosophic” and to plead for “science which reflects”.

Potter studied chemistry and biology. In 1928 he enrolled at South Dakota State University, but he had to face serious financial difficulties. Namely, although his father had been wealthy enough to provide for his education and encouraged him to leave farming and to go to college after high school, when that moment arrived the father was unexpectedly impoverished. Besides, Potter himself lost all his savings as the local bank where he kept his money failed. But both grandmothers supported him, one with \$800, the other with \$300, and so Potter was able to enter the college. During the whole course of his study, he graduated in 1933 as one of the best students, he had to earn his lining by work in a research laboratory: he was feeding the rats and washing their cages. Along with this work, he was soon allowed to participate in experiments and to dissect dead rats, and thus, already as a student he was a co-author of several scientific papers published in the *Journal of Nutrition*.

After receiving his B.S. degree he continued working in the same laboratory and started taking courses as a graduate student. In this period he fell in love with his colleague Vivian Christensen and after two years he married her in 1935. In the same year he was also awarded a full-time teaching assistantship for biochemistry at the University of Wisconsin with Professor Conrad Elvehjem. He received a Ph.D. degree in biochemistry in 1938 and then was awarded a post-doctoral fellowship by the National Research Council (NRC) in Europe-in Sweden with H. van Euler, Nobelist and in England with Hans Krebs,

later a Nobelist. Potter sailed across the Atlantic with his wife in August 1939, but since Hitler invaded Poland by the end of that month and World War II began, Potter had to return to the United States. He made the voyage aboard SS “Manhattan” from London together with many other Americans who tried to escape the war, which had just broken out in Europe. Joseph Kennedy, American ambassador in London, with his whole family was also aboard the ship. Thirty years later he supported Andr  Hellegers to establish an institute for medical ethics, using Potter’s word “bioethics”, at Georgetown University in Washington, D.C. Namely, the institute was called “Joseph and Rose Kennedy Institute for the Study of Human Reproduction and Bioethics” and Hellegers was its first general manager. (Potter’s answer to my questions if he had ever met Hellegers or if Hellegers had consulted him when establishing his Institute for Bioethics, was negative and he added that “the time when Hellegers started is very indicative”). Following his return to the United States, Potter worked for some time in Chicago and at the beginning of 1940 he moved to Madison where the McArdle Laboratory for Cancer Research was opened. In this Laboratory he started as an investigator and soon became a principal investigator. In 1947 he advanced to Full Professor of Oncology at the University of Wisconsin. In 1982 retired as an Emeritus Professor.

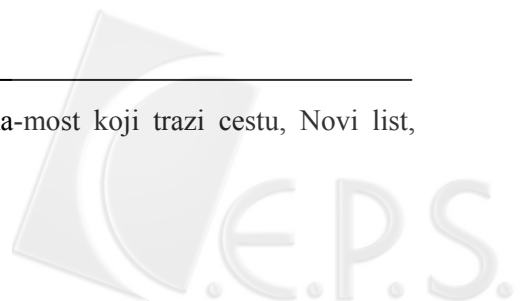
In his experiments with rats Potter developed new methods in cancer research which drew attention of the US Forces and therefore he was invited to work on a wartime project. Here is what he himself said about it:

“I became a co-investigator on a wartime project utilizing the methods and ideas gained in our mainline research. We attacked the problem of Irreversible Shock. We did things to laboratory rat we would not now care to do, in order to produce a state comparable to what some humans suffered in the raids on civilians in London, for example. In the humans, a collapsed building might pin the legs of a victim for several hours. After release shock would set in. In the rats the same result was obtained by applying tourniquets to the legs

for 2 hours or for 4 hours, for example...”⁵

During the Korean War, Potter’s methods again showed to be useful in some military investigations. That time, the US Air Forces wanted to know how to train their pilots not to "black out" in combat at 25,000 feet altitude and to be able to control the plane’s descent. Potter was invited to go to Peru, to a mining town at 14,900 feet altitude (about 4470 m), to study this problem using guinea pigs, which were abundant even at various altitudes. Natives prepared guinea pigs as their national dish offering them alive in restaurants as somewhere else it is done with lobsters. When a guest chose and said “ that one”, the waiter would give a sharp blow to the guinea pig and take it to the kitchen where they did not skin the animal, but it was plunged into boiling water and after the hair was removed it was fried in deep fat. By using these animals Potter studied the problem of adaptation to high altitude and later on American pilots were trained at high altitudes of Colorado for two weeks and tested in a cylindrical chamber that could be pressurized in San Antonio, Texas. The results obtained by the project were-Potter remembers-very satisfactory.

⁵From Potter’s interview with the author: Bloetika-most koji trazi cestu, Novi list, Rijeka.



As an oncologist - while developing methods for determining the quantity of various enzymes in transplantable rat liver tumors derived from about forty different primary tumors produced by certain chemicals added to the rat diet – Potter was able to show that no tumors were alike. Although they resembled immature or fetal normal liver in some respects, tumors were unable to mature to the normal adult pattern in all details. This idea of an arrested differentiation was captured in his phrase: "Oncogeny is blocked Ontogeny."

Studying a multiplicity of differences between the experimental tumors and the corresponding normal tissues Potter expressed his goal as the separation of significant alterations from irrelevant changes in terms of the minimal deviation hypothesis. Since it became obvious that cancer developed as a multi step process, driven by a combination of gene mutations, it became clear that the production of several essential gene changes could not avoid developing a variety of irrelevant gene mutations.

Although he was not involved in cancer therapy or in the search for the new chemotherapy, in 1951 his study of enzyme inhibitors and quantitative measurement of enzyme products in the presence or absence of specific inhibitors showed the effect of two different inhibitors acting on the same overall system. He suggested a combination of chemotherapeutic agents to be tried. This idea was soon applied to clinical situations and this approach is now widespread .

In 1964 Potter was elected President of the American Society for Cell Biology and in 1974 President of the American Association for Cancer Research .He was also elected a member of the American Academy of Arts and Sciences, the National Academy of Sciences and the American Association for the Advancement of Science. During his career he was on committees and panels for the American Cancer Society and the National Cancer Institute. Since he retired in 1982, he has been mostly concerned with bioethics pursuing, as a pioneer, his thoughts from the late 1960s. However, only in the "twilight" of his

live-as Potter himself said- he gains the position in the history of bioethics which he actually deserves- that he is its real “father”. The latest World Congress of Bioethics in Tokyo confirmed conclusively the tendency of bioethics globalization and thus bioethics outgrows and abandons its first medical conception highly promoted by Andre Hellegers, physician, fetal physiologist and obstetrician from Georgetown University, Washington D.C., who considered bioethics to be a synonym for medical ethics, acceptable to the Americans. This tendency was also confirmed by Albert Jonsen, the most prominent historian of bioethics. Professor at the University of Washington, Seattle, when he told me that the growing bioethics interest in environmental and other effects fitted more with Potter’s broad understanding of bioethics than with Hellegers’, limited to medicine and it might be concluded that “new winds blow into Potter’s sails”.⁶

6.04.1999

⁶Ivan Segota: Pamoc tehnologije osigurati svima, Interview with Albert Jonsen, Navi list, Rijeka, 21.02.1999

