CURRENT PERSPECTIVES OF POTTER’S GLOBAL BIOETHICS AS A BRIDGE BETWEEN CLINICAL (PERSONALIZED) AND PUBLIC HEALTH ETHICS

Iva Sorta-Bilajac Turina1,2,3, Morana Brkljačić4,5, Cecilija Grgas-Bile6, Domagoj Gajski7,8, Aleksandar Racz8 and Tomislav Čengić6,8

1Department of Social Medicine, Teaching Institute of Public Health of the Primorje-Gorski Kotar County; 2Department of Environmental Medicine, University of Rijeka School of Medicine; 3Department of Biotechnology, University of Rijeka, Rijeka; 4Sv. Rok M.D. Polyclinic; 5University of Zagreb School of Medicine; 6Clinical Department of Traumatology, 7Clinical Department of Neurosurgery, Sestre milosrdnice University Hospital Center; 8University of Applied Health Sciences, Zagreb, Croatia

SUMMARY – In the context of modern scientific and technological developments in biomedicine and health care, and the potential consequences of their application on humans and the environment, Potter’s global bioethics concept resurfaces. By actualizing Potter's original thoughts on individual bioethical issues, the universality of two of his books, which today represent the backbone of the world bioethical literature, “Bioethics – Bridge to the Future” and “Global Bioethics: Building on the Leopold Legacy”, is emphasized. Potter's global bioethics today can legitimately be viewed as a bridge between clinical personalized ethics on the one hand and ethics of public health on the other.

Key words: bioethics – history; Ethics, clinical; Public health; Potter VR; Personalized medicine

Introduction

In the context of modern science and technology but also the society as a whole, it is legitimate to ask what is the place and role of bioethics? Is it just another segment of the historical heritage in medicine? Or a legacy of an exciting time when every scientific and technological change could keep up with social change? Does the society today (at the global level) have the power to react to changes as it was the case in the 1960s and 1970s, in the vortex of the 20th century scientific revolution?

Do we really need bioethics? If so, what sort? Traditional principalistic1, bioethics focused on the virtues2, global3, integrative4 or specialized5, American or European6...? Be as it may, peeling off the layers of its content leads to its first and original definition, which today, more than ever, comes to the fore – that bioethics is a bridge7. Bioethics attempts to connect, reconcile and unite the interest of the individual and the society, the researcher and the financier, the patient and the doctor, the man (his moral values) and Earth (the environment)... Today, more than ever, it is necessary to go back to the roots and recall the way in which Professor Van Rensselaer Potter II envisioned bioethics, not as a science but as engaging in and leading a life of humility, responsibility and ability8... Do we have strength for it today and can we be the “knights of good science”...

“God Committee” and “Potter’s Bridge”

Bioethics was created as a social movement and developed into a scientific discipline as a reaction to
the great scientific and technological achievements in medicine. Historians of bioethics usually refer to it when analyzing major bioethical scandals (the Tuskegee Syphilis Study, Willowbrook, etc.), but it is necessary to recall the story of the “God Committee”\textsuperscript{9-11}. It shows that science without humanity is powerless and that professionalism without ethics is insufficient.

In 1961, thanks to Belding H. Scribner (1921-2003), the “father” of kidney dialysis, John Myers, the first patient to be sent to dialysis, was hospitalized in the University Hospital in Seattle. At the time, the capacities of the Center for Dialysis could receive up to five patients a year, while the needs were thousands of times higher. The problem of the selection of patients emerged, and the selection in reality meant life or death. The so-called “3WHO” question was raised, i.e. who would live, who would die, and who would make that decision? Under the given circumstances, the idea emerged of establishing a multidisciplinary body that patients themselves, candidates for dialysis, termed the “God Committee” due to the nature of decisions it made. The committee consisted of nine members: banker, priest, lawyer, state official, trade unionist, housewife, and a three-member medical board. The selection criteria were age, gender, social status, income, property, emotional stability, education, employment, previous contribution to the community, expected perspectives, recommendations, etc. The choice literally represented life, non-selection of death\textsuperscript{9-11}. This is one of many examples how clinical ethical dilemmas represent clinical problems where all potential solutions might require violation of some moral rule\textsuperscript{12}.

The New York Times published a brief information on the committee which decided in the Center for Dialysis of the University Hospital in Seattle which of the patients would be dialyzed, i.e. which of the patients would live and which would die. Life’s journalist Shana Alexander (1925-2005) read this line in the newspaper and decided to write a story about the so-called “God Committee”. She moved from New York to Seattle where she stayed for six months, and wrote the article “They Decide Who Lives, Who Dies: Medical Miracle Puts a Moral Burden on a Small Committee”, whose publication date in Life magazine, on November 9, 1962, is according to some of the world’s leading bioethicists considered as the beginning of bioethical history\textsuperscript{13}.

The article provoked strong public reaction and a lot of harsh criticism. A heated bioethical debate was raised about the issue of justice in the use of medical technology and ethical implications of decision on its availability to individual patients. This moment represents the beginning of the interest and public informing about topics of bioethical content, especially in medicine, for fear of possible abuses. It is precisely the “social commotion” that led to the raising of bioethical topics to the academic level: scientific and technical literature began to be written, events and conferences were organized, centers were established, institutes and courses were proposed, etc.\textsuperscript{14}.

As public reaction to these great scientific and technological advances, which would since then mark every moment of the future of medicine, i.e. from today’s perspective, contemporary medicine, there appeared a paradox: a never greater faith in progress – techno-optimism, and a never greater fear of its consequences – techno-pessimism. That same year, when the first “artificial kidney” was activated, on the other side of the United States, this time not a journalist but a scientist was tortured by this very question: are we allowed to do all we are capable of, and where are the limits of action?\textsuperscript{9}

Van Rensselaer Potter II was invited to speak as a former student at the South Dakota State University in 1962, when the centenary of the inauguration ceremony for the grant allocation system was celebrated (in 1862 Abraham Lincoln signed the Morrill Act, and the University was one of the Land Grant Colleges – colleges established on granted land)\textsuperscript{8,15,16}. Potter was invited as one of the leading researchers in the field of oncology. At that point, he had been developing for over 20 years the methods to determine the amount of different enzymes in rat liver transplant tumors arising from about 40 different primary tumors induced by certain chemicals added to the food of rats. He expressed his idea of a halted differentiation through the hypothesis: “Oncogenesis is a blocked ontogenesis”\textsuperscript{17-21}. Also, he was involved in two projects during World War II and the Korean War, i.e. research of irreversible shock and adaptation to high altitudes.

For some reason, at this meeting he decided to talk about something completely different, something that was on his mind for a while, but what he had never publicly verbalized before. What worried him at the
time was the question of progress and in which direction all that materialistic scientific and technological progress was leading the Western culture. He set his mind to something that for him, according to his own words, had become the purpose of bioethics: “the attempt to answer the question facing humanity – what kind of future awaits us and do we have a choice? This is how bioethics became a concept that demanded a discipline that would lead the humanity and form a bridge to the future”15,16.

Indeed, it all started with a lecture from 1962 whose aim was to point to socially contradictory ideas about progress. The title of the lecture was: “Bridge to the Future: The Concept of Human Progress”. The metaphor of a “bridge to the future” had been used nine years before the word bioethics was created and defined8,15,16.

Potter’s Bioethics

Van Rensselaer Potter II was born in 1911 in South Dakota, and received his degree in chemistry and biology in 1933. He devoted himself to the study of cancer and spent most of his scientific career at the University of Wisconsin in Madison as a Professor of Oncology. He was president of the American Association for Cancer Research, and was member of several national and international scientific institutions, including the American Academy of Arts and Sciences. He retired in 1982 as Professor Emeritus of Oncology, but focused in the following years exclusively on bioethics and the improvement of his ideas from 1971. He founded, among other things, the Global Bioethics Network. He died in 200125.

In 1970, he wrote the article “Bioethics, the Science of Survival”, which he published in the journal Perspective Biology and Medicine. Here he used the term bioethics for the first time, coined from two words of Greek origin: bios = biological knowledge that expands and ethikos = system of human values26. A year later, he published the book “Bioethics – Bridge to the Future”. He used the term “bridge” as a symbol for a new scientific discipline, which would represent a link between natural sciences and humanities, as well as between biological science and ethics7. Professor Luka Tomašević has best described the importance of this book in the preface to the Croatian edition: “This book by V.R. Potter II is one of the most important and best-known books written in the last century. As he was writing it, the author probably was not aware that he was writing a book that would be the beginning of something new, i.e. of a new science: bioethics”27.

With this book and numerous lectures held during 1975, Potter warned that “the moral problem arises because medical science has achieved partial success in organ maintenance without person maintenance...” He believed that at present time, medical ethicists have to go beyond “monitoring technological resources for the privileged”15,16. Therefore, he was searching for a broader context.

Potter’s view of “global bioethics”, an idea that nowadays could be explained by the concept of “sustainable development” (although still too narrow to encompass Potter’s entire idea), has become more relevant than ever. Therefore, it is reasonable and important to remember him here, primarily through his own thoughts from 1998: “The original theory of bioethics was the idea that long-term survival of the human race in a decent and sustainable civilization requires developing and maintaining an ethical system. Such a system is “global bioethics”, based on the deliberations and conclusions imposed by empirical findings from all sciences, but especially from biological knowledge... This proposed ethical system forms even today the core of the “bioethical bridge” with its expansion into “global bioethics”, in which the bridging function requires connection of medical ethics and the environment at the global level so as to preserve human survival”15,16.

By finding a foothold in the legacy of professor Aldo Leopold, who advocated the “Earth ethics”, warning of the impending environmental crisis, looking at it as a “failure to carry out further economic activities on the ethical basis”28, Potter developed the concept of “environmental ethics”. Inspired by Leopold’s theses, in 1988 Potter wrote a new book, “Global Bioethics: Building on the Leopold Legacy”, in which he proposed a definition of global bioethics as a “biology combined with diverse humanistic knowledge forging a science that sets a system of medical and environ-

* The so-called “European bioethical school” should also be noted, i.e. development of the idea that the word and concept “bioethics” has in fact European roots. It emerged from the pen of Fritz Jahr, who used it in 1927 in the journal Cosmos describing “an overview of ethical relationships of man to animals and plants”22-24.
mental priorities for acceptable survival”29. Here also, like a common thread, he set out a vision of bioethics as a bridge between natural and human sciences in the service of achieving health for people all over the world and environmental protection. “... In fact, I have since 1970 lobbied for a “bridge bioethics”, which was the vision of connecting “two cultures” – natural and human sciences, or more precisely, biological knowledge and ethics (bio-ethics), believing that in this way a bridge to the future should be built. (The word “bridge” is a metaphor for the intention to encourage the survival of humankind and the intention to link science and philosophy). But as we enter the 21st century and the third millennium, “bridge bioethics” is required to deal with not only the “two cultures”, but also with a host of ethical branches... Today, after six decades of experience, I am arguing that “global bioethics”, as well as new scientific ethics, is necessary for long-term survival of humankind...”15,16.

Personalized Medicine and Public Health Ethics

“Medical ethics, which is now being practiced under the name of bioethics, is a short-term tactic; in fact it is a clinical ethics, which deals with dilemmas faced by doctors, their patients and those who care for patients. Global bioethics, in turn, calls upon medical ethicists to consider the basic meaning of bioethics and to expand their thinking and actions to global public health problems. Medical ethicists are obliged to consider not only the everyday clinical decisions, but also long-term consequences of action they recommend, or fail to consider. Restructured medical ethics would be associated with the long-term environmental ethics and its short-term guidelines, and would connect with it forming thereby the second phase of “bridge bioethics”, i.e. “global bioethics”, a system whose task is to define and develop an ethics for sustainable long-term survival of humankind”15,16.

It is simply bewildering how current Potter’s global bioethics is, especially if placed in the new focus of bioethical interest, and that is the ethics of public health, which is yet in its developmental stage, although the biggest bioethical “scandals” are decades old and belong precisely to the context of public health.

When thinking about current events and perspectives of public health ethics, we cannot bypass the idea of “personalized medicine”, which in itself basically represents the closest presentation of clinical (bio)ethics – medicine and its ethics aimed at the individual30. When opposing the idea of such “personalized bioethics” to Potter’s (almost public health) idea of “global bioethics” as a “global survival”31, Donna L. Dickenson must be emphasized as the greatest contemporary critic of “ME-medicine”. In her “critique of personalized medicine”, Dickenson, in fact, considered one of the fundamental problems faced by Potter’s (public health) global bioethics, which is the relationship between private and public, i.e. personal and social, whose denominator is the reallocation of resources in the health sector. Personalized medicine is the kind of treatment adapted to each patient, i.e. precisely this treatment customized precisely for this patient, precisely for this disease and right now, while public health is a set of activities which would enable reaching the highest possible level of health for every individual, every citizen30,33. Today, both colloquially and in “serious” literature, two popular names for these two approaches are pointed out, i.e. “ME medicine” or “WE medicine”, which were popularized by Dickenson. She drew particular attention in 2013 with the release of the book “ME Medicine vs. WE Medicine: Reclaiming Technology for the Common Good”34. In the book and in other recent works, as well as in numerous appearances in interviews, blog posts, etc., Dickenson indicates fundamental differences between ME and WE medicine, which is why they “must” stand in conflict:

• in the center of observation of ME medicine is the individual as the user of the health care system, as well as his right to an (informed) choice of the most optimal form of health care, and based on the bioethical principle of autonomy;
• on the other side is the public health approach that focuses on the individual as a member of the (narrower or wider) community, which consists of the society at the national, regional, European, global level; therefore the bioethical framework of obser-

---

**Dickenson is well known by those bioethicists who have, for example, dealt with the analysis of the three fundamental, starting concepts of the European bioethics, which are defined as deontological, liberal and model of social welfare. Her work may help in understanding the way in which medical-ethical decisions are made in everyday communication of health professionals and patients in certain socio-cultural and economic contexts”32.**
vation is based on the principles of justice (i.e. on social equality before the health care system), and beneficence that, in the context of public health, is redefined through the concept of social well-being\(^4\)-\(^37\).

The key problem or concern is articulated precisely through the philosophy of personalized medicine, which is according to Dickenson in diametrical opposition to the philosophy and the vision of public health: redistribution of resources at the expense of financing preventive public health interventions at the global level. Thereby the question of (pre)conditions is raised regarding the application of the existing, current technology, and the legitimacy of the need to invest in new technologies. Dickenson believes that special attention should be paid to understanding the social/societal and economic context. Striking a balance between the individual and the general-social well-being in health care has become a key issue\(^35,36\).

Potter clearly articulates how today (medical, clinical, public health) ethicists "must cooperate with social ethicists and require health care measures for the downtrodden in their home countries and in developing countries, where poverty is linked to AIDS, malaria, parasitic diseases and tuberculosis..."\(^15,16\). And precisely in this attempt to consolidate, on the one hand, the idea of a personalized medicine, which is encamped in translational medicine ("from bench to bedside")\(^18\), where expensive cures are created for the "chosen ones" (the issue here is what are the criteria and are there any acceptable criteria) with the idea of a social well-being, we once again reach to bioethics as a bridge between these, at first glance, opposing ideas. Precisely global bioethics, governed by the idea of health care equity, provides a context for the so called "socialization" of personalized medicine, i.e. approaching the philosophy of "personalized medicine for public benefit"... One can therefore say that personalized medicine, as seen by the European Science Foundation, is very "Potter-like" globally oriented because it stands for:

- a pro-active and preventive approach to health and (social) welfare of all (European) citizens; and
- profound implications above and beyond the health care system (social reactions)!\(^39\).

In fact, any attempt to redefine the approach to and the understanding of the health care system, by its definition, affects the entire society\(^39\). Global bioethics as a framework therefore provides that the idea of personalized medicine appears in the position of public health ethics, with the aim that the apposition of "personalized" or "public" becomes irrelevant and in order for that which is important to be highlighted. And that is the right to preserve health, i.e. to use Potter’s definition of the right to “an acceptable survival” (in the context of the overall ecosystem – global survival)!\(^31\)

**Instead of a Conclusion**

In 1998, Potter said: "As I am entering the dusk of my life, I feel that bioethics has reached the threshold of a new time that goes beyond anything I could have imagined and developed. By entering the era of the third millennium, we are becoming increasingly aware of the dilemma that places before us an exponential increase in knowledge without an increase in the wisdom required to manage it."\(^15,16\)

Let us recall that V.R. Potter II always viewed bioethics as a new discipline, a “new medical ethics” which would combine knowledge and deliberation, a dynamic approach to ongoing search of the human race for wisdom, i.e. knowledge on how to use knowledge for human survival and improvement of the quality of life.

Bioethics is the science about the use of science. It is the ethical supervisor of science. Without such a supervisor, science can escape human control and become “dangerous knowledge”. Bioethics should, therefore, represent a new scientific ethics that connects humility, responsibility and ability; a science which is interdisciplinary, cross-cultural and global, and that exalts the meaning of humanity. It perceives the man’s well-being in the context of respect for nature, and as such should become a kind of a “science of survival”\(^8,15,16,40\).
References

8. Šegota I. Bioetički svесki br. 6: Van Rensselaer Potter II: "otac" bioetike. Rijeka: Department of Humanities, School of Medicine, University of Rijeka; 1999. (in Croatian)
14. Šegota I. Nova medicinska etika (bioetika). Rijeka, Department of Humanities, School of Medicine, University of Rijeka; 1994. (in Croatian)
15. Šegota I. Bioetički svесki br. 9: Interviewi. Rijeka: Department of Humanities, School of Medicine, University of Rijeka; 1999. (in Croatian)

Sažetak

AKTUALNO SAGLEDAVANJE POTTEROVE GLOBALNE BIOETIKE KAO MOSTA IZMEĐU KLINIČKE (PERSONALIZIRANE) I JAVNOZDRAVSTVENE ETIKE

I. Sorta-Bilajac Turina, M. Brkljačić, C. Grgas-Bile, D. Gajski, A. Racz i T. Čengić

U kontekstu suvremenih znanstveno-tehnoloških dostignuća u biomedicini i zdravstvu i potencijalnih posljedica primjene za čovjeka i okoliš na površinu isplivava Potterov globalni bioetički koncept. Aktualizirajući izvorne Potterove misli na pojedine bioetičke teme ukazuje se na svestrenost dviju njegovih knjiga koje i danas predstavljaju okosnicu svjetske bioetičke literature: ”Bioethics – Bridge to the Future” te ”Global Bioethics: Building on the Leopold Legacy”. Potterova globalna bioetika danas se legitimno može promatrati kao most između kliničke personalizirane etike s jedne strane odnosno etike javnog zdravstva s druge.

Ključne riječi: Bioetika – povijest; Etika, klinička; Potter VR; Personalizirana medicina; Javno zdravstvo