

Shaping bioethics: environmental bioethics

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Abstract

Bioethics is the study of the ethical and moral implications of new biological discoveries and biomedical advances. This article covers the historical perspective of the development of bioethics during the 1960s in the USA. It further discusses environmental bioethics within the context and discourse of climate change. The authors highlight the importance of environmental bioethics education, if we are to save the earth from the negative consequences of climate change and degradation. They conclude by stating that environmental bioethics provides the venue in which we can explore reasons and methods of understanding the human impact on our planet, and provides us with a different way of exploring ethical responsibilities.

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Introduction

Bioethics, in one sense of the term, was part of a social movement in the USA. As Jonsen¹ notes, “dating the time and place when any social movement begins is perilous and near impossible”. Yet, we can trace the first use of the term. “Bioethics” was coined in 1970 by Van Rensselaer Potter II, an oncologist working in the US state of Wisconsin.² Reflecting on his clinical practice, he identified links between biology, ecology, medicine, and human values. Van Rensselaer Potter asserts that we, as humans, for the survival of our species, should rethink the ways in which we live and value the environment.³ His views, although applauded in Europe, were not taken seriously by mainstream USA. This was mainly because Van Rensselaer Potter, working in a Midwestern cancer research centre, was not connected to great systems of power and money.⁴

At about the same time, at Georgetown University in Washington DC, André Hellegers borrowed the term.⁵ He developed bioethics as a method of inquiry that could serve to inform US public policy issues concerning medicine and the life sciences. Locating bioethics in a science of survival, a method of policy formulation, or as a social movement all correspond to the socio-political milieu of the USA during the 1960s. Particularly during that time a shift to participative democracy was seen in the movements for civil rights, consumer rights, women’s rights, and the beginnings of awareness of environmental degradation. Concurrently, there was a boom in biomedical technology and an erosion of religious authority. For many, the promises of biotechnology – for example, the ability to extend life and to positively modify life – resulted in a questioning of the

older and established religion-based ways of viewing life and death. The promise of technology became for many the new and absolute authority. However, no technology has only benign consequences.⁶ In 1979, academics Tom Beauchamp and James Childress of the Kennedy Institute of Ethics, published the first edition of their book “Principles of Biomedical Ethics”.⁷ This book, the first contemporary major ethics text to focus on ethics in medical practice, followed the Belmont Report commissioned in 1978 as a study concerning the protection of human participants in research.

Beauchamp and Childress’s approach is a framework for resolving ethical problems that trouble health care practitioners. Their approach is principle based; through a process of balancing or adjusting the principles of autonomy, non-maleficence, beneficence and justice, these authors argue, health care dilemmas may likely be resolved.⁷ Their way of framing ethical problems in health care became known as the “Georgetown Approach”, and the four principles (autonomy, non-maleficence, beneficence and justice) spread globally and were often called the “Georgetown Mantra”.⁸

Classical and expansive applications of bioethics

We have noted that the two initial approaches to bioethics were conceptually oppositional. Broadly, one of them followed the classical application of bioethical analysis to problems arising in health care. The other was more expansive and pointed to wider bioethical considerations of the relation of the environment to human health. Gradually,

it was recognised that it is necessary to, as Reich states: “reunite the bioethical twins that have been separated since birth”.⁴ Thus, we are obliged to reconsider the orientation of bioethics, stimulate perceptions of things that count, clarify the implications of excluding some issues and voices, and continue to reflect on the ways in which we can contribute to the shaping of bioethics.⁴ One of these ways is environmental bioethics.

Strong anthropocentrism

Historically, it took a long time to rethink the idea held by even so-called enlightened thinkers like Immanuel Kant that non-human entities are only of instrumental value. Jeremy Bentham was one of the first philosophers to call attention to the suffering of animals and J.S. Mill, his godson, repeated his plea. However, it was not before the end of the 19th century that attention started to be given, albeit only intellectually, to non-human living entities. In “Foundations of Ethics as a Positive Science” (1897), Berlin physician Wilhelm Stern wrote: “The fundamental commandment of ethics is that we cause no suffering to any living creature... unless it is to effect some necessary protection for ourselves, and that we be ready to undertake, whenever we can, positive action for the benefit of other creatures”.⁹

According to Albert Schweitzer, Stern was also one of the first to explore the evolutionary origin of ethics.⁹ This represented one of the first challenges to the concept of anthropocentrism that has been defined as “exclusive or arbitrary preferential consideration to human interests as opposed to the interests of other beings or the environment”.¹⁰ The “Oxford Dictionary of Philosophy” adds another dimension: “... any view magnifying the importance of human beings to the cosmos, e.g. by seeing it as created for our own benefit”.¹¹ Conceiving the earth and non-human entities as only instrumental in value, as does traditional moral philosophy, presents an enormous intellectual hurdle.

While many thinkers have formulated particular methods, two ways of viewing the inclusion of the environment (including the biotic community) in ethical conversations are particularly notable. One way is through adopting an approach that retains the notion of human intrinsic value but shifts the focus to consider human interest. This approach is called “enlightened anthropocentrism”. Stern’s challenge to anthropocentrism raised the idea that humans should be considered as stewards of nature. This retains anthropocentrism but reframes it in terms of responsible stewardship. This is in opposition to the view of dominion over nature or the view that humans have no responsibilities but, instead, a type of divine right to do whatever they please with the biotic community. Both of these approaches have become commonplace in environmental and ecological ethics.

Environmental bioethics in context

Environmental bioethics, in the way we conceive it, involves ethical reflection on the connectivity of all life systems. In

context, we place various approaches to environmental ethics, Darwinian principles, microbial life and emerging infectious diseases in the broader framework of global warming, ecological destruction, and population pressures (for example, density and shifts). Combined, this perspective represents a particular niche in the broader applications of environmental ethics and environmental philosophy. This milieu was purposefully crafted to accommodate the practice of medicine. Two particular factors were influential in the conception of this area of study.

The first is that we no longer consider problems such as global warming, pollution, and consumerism as subjects standing apart and disconnected from bioethics. When we consider the relatedness of all life forms, we can then conclude that we are parts of larger systems. That conclusion should lead us to consider what obligations and duties we have to protect and sustain the biotic community. As the earth is our contingent resource for living, the damages it sustains impact not only on our health but, importantly, on the health of non-human animals, plants, soil, water, and air. Destruction of our home planet leads to interruptions in the basic biological structure of diversity. It disturbs Darwinian evolution. It inalterably damages the biotic community.

Second, we consider environmental education as a necessity in contemporary learning. The Porto Alegre Declaration on University, Ethics and Environment supports our view: “The 21st century university ought both to bridge and to blend the sciences and humanities into an integrated whole. To speak effectively on environmental issues, the university should abandon the dogma that science deals with a domain of objective facts and the humanities with a domain of subjective values. Scientific inquiry is directed by our values and the revelations of science often inform, expand and transform our values in unexpected ways”.¹²

The importance of environmental bioethics education

Bioethics is a multidisciplinary activity. In environmental bioethics, this is particularly evident in that the discipline involves knowledge beyond environmental ethics; clinical medicine and health care, microbiology, ecology, climate and chemistry, as well as environmental law, are also involved. This means that we all need to learn to think differently. For example, “philosophers and theologians must learn a great deal about science and technology”.¹² Likewise, scientists must learn a great deal about philosophy and theology. The point is that we are faced with a magnitude of environmental problems. The resolve to address such issues cannot fall within a single discipline. Rather, it should be multidisciplinary, yet voiced as a single consensus of like-minded environmentally sensitive individuals. This is because: “Our modern age may soon end due to ecological collapse... in order to survive, humanity must go beyond the attitudes, values, and practices of the present age and develop an integrated scientific, ethical, aesthetic, and religious worldview.”¹³

This implies that we must expand our human concerns beyond a strong anthropocentric axiology. One way this could be achieved is by adopting an enlightened rational world view of ideals, in which our felt preferences (what we desire as opposed to what we need) may be criticised and the values and principles regarding the human species' relationship with nature are established.¹⁴ This may lead us to consider questions that challenge conventional education and that include environmental concerns. These questions are: What kind of a world do we have? What kind of a world should we want? What must we do to get this world?¹⁵

What kind of a world do we have?

The kind of a world we have is one in which the earth's degradation has resulted in increasing infectious disease, at a time when we are facing a challenge to treat infectious diseases effectively because of mounting drug resistance. The kind of a world we have is one in which species are disappearing at an exponential rate. The kind of a world we have is one in which our human arrogance and ignorance lead us to alter our physical environment to the extent that the very patterns of our seas and oceans, to say nothing of its creatures, have changed. Climate change has altered, and will continue to alter, the ways in which all life forms currently exist; the potential range and magnitude of climate change-associated risks is a global research priority.¹⁶ These are only a few ways in which we can answer this question.

What kind of a world should we want?

There are, of course, many different answers to this question. We will identify a few. In the context of infectious disease, it is safe to say that we should want to live in a world that moves towards understanding that emerging infectious diseases and drug resistance are natural responses to a world out of balance, an unbalanced world of human making. In a world we want, we should realise that, for every application of technology, there will be unknown consequences. We should be wary and work to inform any such "quick fix" reliance. In a world we want, our human population in its numbers and density – as well as its materialistically driven lifestyles – should be moderated. In a world we want, the environment would not be commodified but protected and respected. In a world we want, we should recognise that there is power behind the construction of ideologies, be cautious, and resist them. In a world we want, the value of every life form should be respected.

What must we do to get this world?

To answer this question requires a change in thinking about ourselves, looking beyond ourselves to the biotic community as a whole. We need to reallocate and clarify our felt preferences and enlighten them by adopting a more environmentally sensitive world view. To inform our felt preferences requires a great amount of time and political will. Time – when faced with the numbers and potential

of microorganisms, climate change, faltering biological diversity, and alterations in atmosphere, oceans and earth – is a grave problem. Political will is another impediment. Faced with a world of so many diverse competing claims for prioritisation of interests, it is difficult to see how the problems raised in environmental bioethics can be placed above all others. At the same time, without the aesthetic value, resources, and physical environment given to us as earthlings, we would have no stage upon which we could make our claims, promote our views, sing our songs, express our emotions, and live our lives. So to do nothing is hardly a moral option.

Broadening perspectives

Barry Hoffmaster, a leading social scientist and ethicist, writes that biomedical ethics should be reconceived in a social context. He claims that moral justification in traditional biomedical ethics inherently includes the assumption "that real life moral problems come sorted and labelled and ready for the manipulation of rules, principles or theories". He also claims that bioethics, in making such assumptions "disregard[s] the extent to which moral concepts and norms derive their meaning and their force from the social and cultural surroundings in which they are embedded; neglects the ways in which moral problems are generated and framed by the practices, structures, and institutions within which they arise and ignores the means by which social and cultural ideologies, and the power relationships they entrench, can both perpetuate moral inertia and effect moral change".¹⁷

As we have already seen, there is a movement in bioethics to place the patient within his or her community. However, in the context of environmental bioethics, a greater expansion is required. Let us look at an example in the context of microbial drug resistance.

Dr Jones, a general medical practitioner, has just prescribed an antimicrobial for his patient, Mrs Gama, whom he diagnosed as having a chronic urinary tract infection. Were his actions ethically justifiable?

An initial response to this case study might well be: What is the ethical problem? A doctor examined a patient, reached a diagnosis and prescribed a drug therapy. It would be difficult to reach a contrary position based on the information provided. But what if the example gave us additional details?

Dr Jones, a general medical practitioner, has just prescribed an antimicrobial, amoxicillin, for his patient Mrs Gama whom he diagnosed as having a chronic urinary tract infection. Were his actions ethically justifiable?

Well, we might ask if this is just a question of the application of incorrect medical knowledge. We might even discuss the HPCSA's guidelines that point to the duty of a health care practitioner to self-improvement, because Dr Jones's drug therapy choice was incorrect. Before we could reach a deeper ethical assessment of this problem, we would

have to know if Dr Jones knew about the problem of drug resistance.

As a prudent measure to attempt to reduce the numbers of drug-resistant microorganisms in the environment, medical schools should provide continuing education on current antimicrobial uses to prescribers. This could be accomplished as part of the requirements of continuing professional development, as well as in lectures presented to medical, dental, veterinary and agricultural students. But to lecture on the relative problems separately (for example, because of a wide spectrum of resistance to amoxicillin, it is no longer an effective drug therapy in urinary tract infections; the Bonk tick has now invaded South Africa; or, because of widespread resistance, tetracycline is no longer recommended for use in the control of *Salmonella* in chickens) excludes considerations of the whole problem. Consideration of the whole problem entails an understanding of morality as a lived human-nature experience. This would suggest, then, the acceptance of the primacy of the whole.

Accepting the primacy of the whole

In this conception, there is the view that wholes are primordial to their parts. Moreover, it is often difficult for us as individuals to realise that our actions or inactions feed into larger systems so what we do, or do not do, has consequences beyond our myopic vision. We have a tendency to consider that parts in some ways exist independently. But dividing an individual in half does not make two individuals. An individual may be said to be composed of a head and limbs; or of bones and muscles; or of a heart and lungs; or of nervous systems; or of cells; or of genes. What an individual is cannot be comprehended by simply looking at his or her parts. No less can we understand what it is to be in and of nature without broadening our world views.

Generally, we are accustomed to see parts as disconnected from the whole. In addition, in this context we look for solutions that will fix problems. Consequently, we are drawn into a spiral of superficial “quick fixes” which, in the long run, can result in a worsening situation. For example, if we hold that the answer to the problem of drug resistance lies in the development of new genetic technologies (for example, modifying the genes of pathogenic microorganisms), then the utilisation of new technologies will most likely remain as it often is: reckless, indiscriminate, multi-purpose.

However, through enlightening individuals concerning the primacy of the whole, such conceptions may serve to assist us in breaking this vicious cycle. In our example, the ways in which drug resistance affects (and effects) the biotic community globally should be considered important enough to receive greater attention in medical education. Other examples might include exploring how population pressures, consumerist practices (particularly over-consumption), global warming, the environmental routes of infectious disease transmission, and so forth, affect our ideas of the good life.

To simply learn: “Beware, the Bonk tick has invaded South Africa”; “Don’t use amoxicillin for urinary tract infections”; or “Tetracycline is no longer the treatment of choice for chickens with *Salmonella*” does provide necessary information. However, it does not enlighten our understanding that we are just nodes in the network of larger systems and that what we do, or do not do, has an impact on the whole dynamic system of life. Environmental bioethics provides the venue in which we can explore reasons and methods of understanding the impact of humans on our planet and provides us with a different way of exploring ethical responsibilities.

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