Introduction

From "Yuck!" to "Wow!" and How to Get There Rationally

Suppose a school were to set out deliberately to improve the mental and physical capacities of its students. Suppose its stated aims were to ensure that the pupils left the school not only more intelligent, healthier, and more physically fit than when they arrived, but more intelligent, healthier, and more physically fit than they would be at any other school. Suppose they further claimed not only that they could achieve this but that their students would be more intelligent, enjoy better health and longer life, and be more physically and mentally alert than any children in history. Suppose that a group of educationalists, outstanding ones of course, far more brilliant than any we know of to date, had actually worked out a method of achieving this, in the form perhaps of an educational and physical curriculum. What should our reaction be?

Well of course our reaction would be one of amazement; it would certainly be an unprecedented event—a breakthrough in education. But should we be pleased? Should we welcome such a breakthrough? We might of course be skeptical, we might doubt such extravagant claims, but if they could be sustained would we want our children to go to such a school? And if the school our own children attended was not run according to the new educational methods, would we want these to be adopted as soon as possible?

We ought to want this. It is, after all, part of what education is supposed to be for. Indeed, if the claims were not expressed hyperbolically and competitively, this is what, if we knew little about education, we

might well imagine was actually going on in schools or at least was what the teachers were supposedly trying to bring about. Of course we might have some reservations. We might want to be assured that others of the things we want from education would not be sacrificed in the cause of intelligence and bodily health. We would want this school and these educational methods to transmit our culture, and we would want our children prepared for the real world. But, this said, if the gains in intelligence, fitness, and health were significant and palpable we might well be willing to postpone initiation into some elements of our multicultural heritage or forgo some extra periods of personal and social education for the sake of these compensating gains in health, intelligence, and physical fitness.

Now suppose, as is much more likely, we could use genetic engineering, regenerative medicine or drugs, or reproductive technology or nanotechnology to produce healthier, fitter, and more intelligent individuals. What should our reaction be? Would it be unethical to do so? Would it be ethical not to do so?

Our question is this: if the goal of enhanced intelligence, increased powers and capacities, and better health is something that we might strive to produce through education, including of course the more general health education of the community, why should we not produce these goals, if we can do so safely, through enhancement technologies or procedures?

If these are legitimate aims of education, could they be illegitimate as the aims of medical or life science, as opposed to educational science?

Enhancements of course are good if and only if those things we call enhancements do good, and make us better, not perhaps simply by curing or ameliorating our ills, but because they make us better people. Enhancements will be enhancements properly so-called if they make us better at doing some of the things we want to do, better at experiencing the world through all of the senses, better at assimilating and processing what we experience, better at remembering and understanding things, stronger, more competent, more of everything we want to be. A welcome part of all this added value is the likelihood, the hope, and intention, that enhancements will also make us less: less the slaves to illness, pain, disability, and premature death; less fearful because we have less to fear; less dependent, not least upon medical science and on doctors.

For these and many other reasons which we will examine as we proceed, this book defends human enhancement and argues that not only are enhancements permissible but that in some cases there is a positive moral duty to enhance.

If there is a theme which unites all my philosophical work, it is an exploration of the responsibility shared by all moral agents, to make the world a better place. Karl Marx[1] is noted for the idea that the purpose of philosophy cannot simply be to understand the world, but must also be to change it. This thought, however, is not original to Marx; it is implicit in the writings of many philosophers—Plato certainly wanted to change the world for the better and *The Republic* is devoted to systematic ways to achieve a better society. Locke, Rousseau, and Bentham would all have been equally at home with the idea. Indeed, as Bertrand Russell said, talking of Jeremy Bentham:

> There can be no doubt that nine-tenths of the people living in England in the latter part of the last century were happier than they would have been if he had never lived. So shallow was his philosophy that he would have regarded this as a vindication of his activities.[2]

Russell's irony will not be lost on even the most literal of readers. It is a sad comment on the philosophy of the twentieth century that in the four score years since Russell's essay was written, concern with the real world, no less than with attempts to make it better, have continued to be seen as evidence of lack of philosophical depth by the majority of professional philosophers, and Russell's own attempts to make the world better are not, even now, ranked by most philosophers as among his significant philosophical contributions. All these philosophers place philosophy at the service of humanity, for what use is knowledge and understanding without using that understanding to try to change things for the better?

It is significant that we have reached a point in human history at which further attempts to make the world a better place will have to include not only changes to the world, but also changes to humanity, perhaps with the consequence that we, or our descendants, will cease to be human in the sense in which we now understand that idea. This possibility of a new phase of evolution in which Darwinian evolution,

by natural selection, will be replaced by a deliberately chosen process of selection, the results of which, instead of having to wait the millions of years over which Darwinian evolutionary change has taken place, will be seen and felt almost immediately. This new process of evolutionary change will replace *natural selection* with *deliberate selection*, *Darwinian evolution* with "*enhancement evolution*."

One of the ways in which philosophy can contribute to a better world is to help clear away the bad arguments that stand as much in the way of human progress and human happiness as do reactionary forces of a political and even of a military kind. When new technologies are announced, the first reaction is often either "wow—this is amazing!" or "yuck—this is sick!" This book is about the reasons and arguments that underlie both reactions, and about how it can sometimes be rational to move from "yuck!" to "wow!" In the chapters that follow I present the arguments for human enhancement and analyse human enhancement; the book builds on work of the last twenty years which has at its center the moral responsibility of human beings to make responsible, informed choices about their own fate and the fate of the world in which we live. In the face of threats both to humankind and indeed to the ecosystem which sustains us and all life, this responsibility is nothing short of a clear imperative to make the world a better place.

This is a book of arguments; in the course of it I try to critically evaluate the main arguments opposing human enhancement of all forms and at the same time, through use of real examples and discussion of present and future enhancement technologies, I develop the arguments and the good reasons we have not only to take the possibility of radical human enhancement seriously but also positively to promote it. I point out the continuity that exists between therapy and enhancement, the fact the human enhancement has always been both a conscious and unconscious part of human development and of evolution, and I underline the familiarity of the multifarious attempts we humans have made not only to better our ourselves in the sense of improving our material circumstances and well-being, but literally to better ourselves. In short, I propose both the wisdom and the necessity of intervening in what has been called the natural lottery of life, to improve things by taking control of evolution and our future development to the point, and indeed beyond the point, where we humans will

have changed, perhaps into a new and certainly into a better species altogether.

As the argument develops, a radical thesis outlining the moral, political, and social reasons to welcome the prospect of enhancement is developed, as is a defense of the idea of making people, or rather permitting people to make themselves and their children, longer-lived, stronger, happier, smarter, fairer (in the aesthetic and in the ethical sense of that term) and in finding ways to do this which will protect the safety of the people and of course be consistent with good government and regulation.

The Agenda

In the first three chapters I argue that the opportunity to create healthier, longer-lived, and altogether "better" individuals is one that there are moral reasons to take and that it is an opportunity that is in the interests of the individual, society, and government. Indeed, governments have prudential as well as moral reasons to support parental and individual choice in such matters. It is further argued that the freedom of citizens to do what's right ethically and what's right for them personally is not only self-evidently sensible, it is enshrined in our moral and political theory.

Chapter 1 is really a further introduction to and explanation of the themes of this book, but it seeks to do more than to pose questions or to set out the conclusions that are coming: it also begins to argue for these conclusions. Chapter 1 also further explains my own commitment to making the world a better place and how I see philosophy and bioethics as rational ways of attempting to do so.

The three opening chapters examine the various techniques that might be used for enhancement and the various targets of those techniques. Stem cell research and therapy, gene manipulation, selection of embryos, drugs, machines and other mechanical enhancements, and many other enhancement techniques are considered and evaluated. These chapters also advance a new thesis as to how health and disease are to be understood, which replaces and shows the unacceptability of the previous model advanced by Boorse and Daniels.

Chapter 4 considers in detail perhaps the most radical and far-reaching of all types of enhancement, that of the possibility of life

extension, perhaps to the point where the enhanced individuals would for all practical purposes be immortal. The arguments for and against such a dramatic possibility are considered in detail in the light of the fact that life extension is simply the corollary of lifesaving and is therefore an established part of our common-sense morality.

Chapter 5 looks at reproductive choices as a way of influencing the sorts of people that will be brought to birth and exist in the future. The many arguments which purport to give reasons for limiting access to reproductive technologies and procedures which may facilitate the enhancement of individuals or permit illness, impairment or disability to be removed or minimized are examined. A crucial issue here is whether or not these arguments point to dangers or harms of sufficient seriousness or sufficient probability or proximity to justify the limitation on human freedom that they require. I argue that there is a so-called "democratic presumption" in favor of freedom and in particular supporting freedom of reproductive choice. The presumption is that citizens should be free to make their own choices in the light of their own values, whether or not these choices and values are acceptable to the majority. Only serious real and present danger, either to other citizens or to society, is sufficient to rebut this presumption. The question of whether or not such serious dangers attend freedom of reproductive choice is considered in depth.

Chapter 6 examines disability and disadvantage and asks whether attempts at human enhancement constitute some sort of insult to people with disabilities or disadvantages and whether or not attempts to make better people constitute unfair discrimination against people with disabilities. Might increases in the gap between normal and enhanced abilities, as well as between enhanced and disabled people, be a decisive objection to enhancement?

Chapters 7 and 8 analyse in detail the work of three prominent and complex theorists, Michael Sandel, Leon Kass, and Jürgen Habermas, all of whom have mounted a vigorous and sustained critique of human enhancement and all of whom would stop attempts at enhancement in their tracks. I suggest that the arguments of all these thinkers are inadequate or misconceived as objections to enhancement.

In chapter 9 I will look at enhancements which are not principally focused on health or treatment but are more "cosmetic" or "elective."

The choice of phenotypical traits such as hair, eye and skin color, physique, stature, and gender are examples of what I call morally neutral choices in the sense that it is not in most circumstances better or worse, morally speaking, to be black, white, tall, short, male or female, brown-haired or blond (despite what gentlemen allegedly prefer). Sex selection is taken as a case study and both the ethics and the policy dimensions of permitting such choices are explored.

In the final two chapters I focus on the research that will be required if new forms of enhancement are to be developed and made available. The penultimate chapter takes as its point of departure the fact that many of the most dramatic forms of enhancement will use or will be a by-product of therapies and techniques using regenerative medicine and stem cell science to achieve both the therapeutic and the enhancement effects. The ethics of these techniques will, for the foreseeable future, turn on the legitimacy of sourcing stem cells from embryos and indeed on research using embryos or embryo-like entities. The moral status of the embryo is therefore of vital importance to the possibility of human enhancement, at least for the foreseeable future. This chapter is not a traditional examination of the familiar problem of "moral status."[3] Rather, I argue that the embryo is an irredeemably ambiguous entity and that human life, and even probably post-human life, is simply not possible for creatures that regard the embryonic forms of their species as sacred.

Finally I turn to the role of science research in the contemporary world. I argue that research is so essential a part of life, society, and the possibility of human progress that a radical reevaluation of the role of research in our lives is required. Hitherto, research has been viewed with suspicion and regarded as a sort of "optional extra." I argue that if human life and welfare are to continue to be protected and the enhancements that offer the best prospects for future health and welfare are to be developed, not only must research be valued but support of, and indeed participation in, research must in some circumstances be regarded not only as desirable but as a positive moral obligation.