Ethics, Medicine and Public Health (2016) **2**, 329—333

Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com

DOSSIER ''ETHICS, MEDICINE AND GENETICS'' /*Editorial*

Introduction: Pragmatism in bioethics and genetics

Pragmatisme en bioéthique et génétique

Genetics, more specifically genetic information and engineering, has been viewed on an ethical and existential continuum. At one end, it is said to pose one of the greatest dangers to the survival of human beings, whereas on the other, it is thought to be the greatest opportunity we have to improve our or future generations' existence. The bad or good news, depending on one's perspective, is that there is evidence for both extremes, as well as all points in between. Doom is a causal possibility, although it is difficult to determine its actual probability. Given the complexity of genetic interventions and their impact on the human condition, an unforeseen development could cause chaos that wipes out the species *homo sapiens*. Among unintentional mistakes are accidentally manipulating the human genome to engineer transhumans that replace us, creating a deadly organism that exterminates all organic life, and a myriad of other possibilities limited only by what science can do. The ability to engineer DNA might also bring out eugenicists who would alter the genome to remove every defect in human beings, which could be a way of getting rid of anyone the eugenicists find objectionable, such as those with the ''wrong'' race, gender, or physical and psychological attributes.

On the other hand, genetics can and has improved lives. Genetic testing, for example, has helped people make better medical and life decisions by giving them information they need when they need it. Transgenics, in which genetic material from one organism is transferred to another's DNA to produce a beneficial characteristic in the latter or its offspring, has improved medical care and food supply for many who could not have received such benefits using conventional technology [1]. On the nearer horizon are drugs and genetic interventions designed for that person's particular disease as exemplified in that person, and which have been tested by developing engineered cell cultures from that particular person.

How to evaluate the morality of genetic intervention, the science, the people in the field, and so on is the work of bioethics. When bioethics is done well, it can provide a magnificent example of why human reasoning must be valued. Bioethics helps us to better understand an issue, come to reasonable decisions, justify those decisions to other reasonable people, create effective policy, and assist us in a variety of ways. On the other hand, when bioethics is performed poorly, the consequences can be dire. Intrinsically valuable entities, such as people, are devalued, flourishing thwarted, society harmed, and a number of other negative outcomes are created when bioethics is employed in a sloppy

http://dx.doi.org/10.1016/j.jemep.2016.07.005

manner or actively misused by those who should know better. The majority decision in *Buck v. Bell* 274 U.S. 200, a case of eugenics, is especially glaring:

> *We have seen more than once that the public welfare may call upon the best citizens for their lives. It would be strange if it could not call upon those who already sap the strength of the State for these lesser sacrifices, often not felt to be such by those concerned, to prevent our being swamped with incompetence. It is better for all the world, if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. . . Three generations of imbeciles are enough [2].*

Instead of having compassion for the intellectually disabled, the state had a right, some would say duty, to sterilize the former against their will, and that forced sterilization would not violate the intellectually disabled person's entitlement to due process. Making the court decision even more morally repugnant are its elitist assumptions that social utility is more important than those society deems defective, that the intellectually disabled will commit crimes or be unable to care for themselves, and that there is no social obligation to those citizens who need help to provide such assistance.

Bioethics is often accused of being too impractical or just plain wrong. First, it can be too theoretical, as in the Holmes' ruling, which makes social utilitarianism the only principle that matters, even though utilitarianism of this sort reduces people to mere numbers rather than treating them as individuals worthy of moral consideration. Contrarily, bioethics can be too applied, as happens when experimental outcomes substitute for rational justifications for why we should be a particular way or act in a specific manner [3]. We will examine each in more depth below.

At times, natural science, such as neurophysiology and neurobiology, and social science, such as psychology, stray into overly strong claims that cannot be supported by the actual data, although the claims do grab the media's attention for the sensational. One problem is trying to make things too simple. Some neurobiologists give a reductionist argument that if we could just understand the brain and how it functions, then we would understand what it is to be rational, moral, or human [4]. They believe that the brain is some sort of precise machine, such as a fine clock, which once dissembled down to its component parts and their relations, can be fully understood. All other endeavors to discover or define what it is to be a person or human being are often eschewed as being distractions from the only field that can give satisfactory answers to these questions, viz. neuroscience. Besides the above reductionist position's hubris and the well-known qualia problem, reductionists fail to realize that neuroscience cannot explain why the field is something that should be an object of study. Neuroscience deals only with the ''is'' of a functioning brain, without being able to explain an ''ought''. Hence, it cannot use its own paradigm to justify why anyone should pursue neuroscience or ought to use its results without unintentionally resorting to philosophical/ethical arguments of one type or another. The same issue arises for social sciences, which might merely be recording what the case is rather than what is could or should be. In both instances, the underlying problem is that tools explaining how things are is being used to try to explain why they should or should not be.

A second problem is that less than careful natural and social scientists do not understand the complexity of human thinking and interaction. As a result of the work being done to replicate famous studies' results, we are seeing a number of influential or otherwise studies being called into question based on their methodology, analysis, results, or rather extravagant claims [5,6]. A research project that ''infused'' people's minds with age by telling them they are old [7], did not make them walk as if they were older. Sometimes the results are merely unintentional and unconscious researcher bias. In the ''infusion of age'' case, it appears that researchers were perceiving what they wanted to see. In other instances, researchers might assert, for example, that stimulating people with photographs, words, or other interventions produce results showing that all people exposed in a similar way will have identical behavior. However, a study that uses college students from a particular region of the country taking a particular subject cannot produce reliable general conclusions for any group that does not sufficiently resemble the test subjects, such as older adults without a college education who live in a different region. Therefore, due care needs to be taken so that the conclusions do not exceed what the data permit, and a bit of humbleness might help here.

Despite the credibility issues that sometimes arise, no reasonable person should question the valuable contributions of social and natural sciences to the story of ethics. Both can tell us what morality is possible by discovering which values and principles *homo sapiens* can actually hold. For example, we could theoretically discuss pain being an intrinsic good, but in actuality no person can actually value pain for its own sake. The sciences also can inform us about the values and principles people actually hold, vital information for us if we want to begin conversations about morality with various people from different cultures. Social and natural scientific findings also help us figure out what should be the case given the existing circumstances. We could say that no one ought ever have a bad thought or lie, but that would be a foolish position to take given how people actually function in reality. Lying, for instance, is necessary for social functioning, as has been shown by both philosophers and psychologists [8,9]. Finally, with the information about how ethics works in the brain and psychology of individuals, we can find ways to make things better for them and others using these facts and processes to craft ways of educating the individuals to be better people with flourishing lives.

On the other hand, normative theory and theoretical ethics have a legitimate role to play in the field answering the ''should'' and ''ought'' questions, but can stray into ideal world realms that can exist only in the minds of those thinking about them. Of course, it would simplify the whole business of knowing what to do or what to be if morality were identical to some sort of carefully developed mathematical system, such as calculus, or a finely tuned and crafted clock, such as a Patek Philippe, with its required precision to make the machine work as efficiently as