CLONING AS A TEST CASE OF AUTONOMOUS TECHNOLOGY

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The advent of human cloning technology seems to be the ultimate test case for the autonomy of modern technology. Given the fact that a large majority of people abhor the idea of cloning, the unstoppable development of this technology would definitively prove the existence of a hidden force behind the propulsion of modern science and technology. If we had any control over technological development left, we should be able to prevent the cloning of human beings.

Admittedly, to make human cloning a test case of autonomous technology presupposes that in fact cloning human beings really is illegitimate. However, sometimes it is hard to find reasons to support the obvious. Contrary to the sincere convictions of the general public it turns out to be quite difficult to explain why it is morally impermissible to genetically duplicate a human being.

In part I of this paper I discuss the grounds presented by Hans Jonas for a ban on human cloning. His argument is deep and thorough, but not fully convincing. I will show that more empirical evidence is needed to decide the case. So my first conclusion will be that conclusive moral evidence for an eternal ban on human cloning is not yet available, even though a majority of people favor an opposite opinion.

Next, I want to take a second step. Maybe applied ethics, pursued this way, is biased. Maybe the difficulty in getting objections against cloning acknowledged is just another symptom of autonomous technology and shows the greasy hands of modern ethics. Autonomous technology, or technological determinism, if you prefer, always presupposes that ethics as a guiding force in modern society is powerless. An explanation for the lack of moral control over technological development will be central to any theory of autonomous technology. Applied ethics is accused of legitimating rather than criticizing controversial technologies. By formulating conditions for the acceptability of a certain new technology, is ethics not in fact just paving the road for its successful introduction?

This issue is reserved for part III, because it presupposes a section (part II) on autonomous technology theories. To examine whether the lack of convincing and effective counter arguments against cloning can be explained by a theory of modern technological development, I first present an overview of different approaches to technological determinism.

Throughout, we will look for lost or unjustly neglected arguments against cloning.

I. HANS JONAS ON HUMAN CLONING

Hans Jonas wrote about cloning already in 1974. He discusses the possibility of cloning adults from adults. He does not pass judgment on cloning animals or fetal tissues for transplantation purposes. In his plea against the creation of adult clones Jonas refrains from appealing to religious or related motives. He tries to put up a moral road-block within the confines of generally accepted morality. This implies that he has to make clear that the clone-offspring is somehow being harmed. Some universal human right must be shown to have been violated.

At the moment, in the early experimental stage of the development of mammal cloning, the likely harm to the clone is already evident enough. The Edinburgh sheep suffered serious side effects. One in five implanted embryos grew into a giant and had to be delivered prematurely by caesarean section. With the benefit of hindsight we can recognize the experiment as a case of cruelty to animals: it ought not to be repeated until the biological causes are understood.

In the foreseeable future we can do nicely in ethics with the medical category of physical harm. Twentieth-century medical science has benefited much from the failures of twentieth-century intrusive medical practice. Thanks to experiments in hormone treatment and transplantation surgery we know much more about short and long-term physical side effects of medical technology. At present, the abundance of medical risk will block even the daring from experimenting with cell nuclear transfer and implantation of human embryonic eggs.

But, of course, the final moral question is: Would cloning be allowed, if it

was completely medically safe? If the answer is clearly no, a permanent and definite ban on human cloning could effectively spoil the enthusiasm in research and thereby prevent the technology to arise at all. Jonas undertakes to establish such a final conclusion. He compares clones to twins, but with the important difference of a time-lag in between: clones are unsimultaneous twins. His major moral premise is that every human being has a right to a totally new and uncorrupted life of his or her own.[1] According to Jonas, an open future is an essential precondition for personal creativity. The clone's personal self-realization and his relation to other people would be thoroughly spoiled by the continuous interference of the preceding life-example of the elder clone-twin brother or sister, whether it be a Nobel prize winner, a beauty king or queen, or just one of its own parents who asked for a clone baby in order to have their own genetic child in spite of their infertility. So cloning should be banned because everybody has the right to find his own way in life and be a surprise to himself.

Jonas assumes that his declaration of a right to an individual open future can get around the difficult question of genetic determinism. On this point, however, I have to disagree with him. Jonas says that the prescience of the virtues and vices of the genetic predecessor will interfere disturbingly in the clone's free unfolding of his own plan of life. No question about that, but it makes a relevant moral difference whether genetic determinism is true or not. If it is true, the harm is caused by the clone's parents or parent, who left their child bereft of a unique set of genes; if it is not, the damage is done by third parties, fostering misplaced expectations regarding this genetic copy, who in reality is a unique individual. In this second case, the parent or parents cannot be held responsible for the fact that other people do not understand the mistake of genetic determinism. Forbidding cloning as an infertility treatment for this reason would be like forbidding Jewish people, for instance, to have a baby because some other people are prejudiced against Jews.

The actual influence of our genes on our lives is largely an empirical question. Proponents of cloning as an optional infertility treatment are eager to point to the small genetic differences caused by extra nuclear DNA, and even the nurture theory is back in town. Summarizng my conclusion: given the fact that genetic determinism presents an empirical problem, the permissibility of cloning adults from adults can not be decided on *a priori* grounds. This implies that a final ban is not justified so far.

Personally, I think that genetic determinism will prove to be true enough to make parents guilty of burdening their clone child with an involuntary insight into his personal future. Maybe Einstein's clone will not pay any attention to the stars at all, but grow grey and die at the same age and just like his late twin brother. I therefore agree with Jonas's conclusion that cloning adult human individuals is morally undesirable. However, anybody else could disagree with us regarding the question what is better: to live a life in happy ignorance and possibly die young, or to be warned early and take your dietary precautions to avert the danger. Or, to put it differently, what is sillier: to live like an ostrich who puts his head in the sand or to combat your genetic fate?

II. AUTONOMOUS TECHNOLOGY

Now I want to return to my question, whether the invention of cloning presents the final evidence for the autonomy of technological development. It cannot be, since it is true, as I have tried to show, that we have to wait for more empirical evidence on the issue of genetic determinism. If cloning remains morally disputable, those who pursue its development may legitimately do so. As long as they inflict no harm and violate nobody's rights, they can go on.

But maybe this approach to ethics is too narrow. Maybe we have to conclude that cloning is not a test case for autonomous technology, but a test case for ethics: an ethical theory which knows no grounds to prohibit the cloning of human beings should be dismissed as invalid or incomplete. The moral theory of reflective equilibrium (Rawls) teaches that sometimes sincere convictions are more important than theories.

First, I must remark that it is a risky business to start disqualifying ethical theories when they do not serve your personal moral purposes. However, such a disqualification is central to every theory of autonomous technology. Technological determinism can be explained in different ways, but it always presupposes that ethics as a guiding force in modern society is powerless; otherwise, evidently, there would be no determinism. I will now present a short overview of approaches to technological determinism and summarize their critique of modern applied ethics.

Autonomous technology, or technological determinism if you prefer, can be explained in two major ways: either by natural, or by social factors.

Naturalistic technological determinism is based on the conception of technology as "applied science": technological innovation follows in the footsteps of progress in the natural sciences. This view bears largely on the evidence of the miniaturization of technology: from steam engine to computer chips and biotechnology.

Social technological determinism, on the contrary, views technology as a "social construct." Because the final image of a technology is underdetermined by natural factors, constructivism regards technology to be of primarily political character.

Moreover, these natural and social factors can intertwine, when a mutually reinforcing relation is detected, which adds to the possibilities.

Soft naturalistic technological determinism does not discredit our moral autonomy: technological development has a logic of its own, but we are free at least to understand our growing dependency on technology. We could oppose the imperative of technology, but due to lack of values or lack of consensus we are not able to. In the end it is human greed and short sightedness which should be blamed for the negative side effects.

Hard naturalistic technological determinism on the contrary believes that modern natural science has undermined the foundations of objective ethics. Liberalism is just the other side of the coin of a vision of nature as dead matter following mathematical laws. The image of the autonomous subject would be idle without modern technology's ruling power over nature.

On the other hand *soft* social technological determinism makes fun of individual responsibility, but keeps up the idea that technological design is a subject for politics. Technology's resistance towards change is caused by the extensive social conditions of its functioning well. If you want to change one part, you will have to change the whole network. You will not sell computers just by rearranging the Qwerty keyboard.

Hard social technological determinism digs deeper by pointing to the cultural division of roles depicted by the image of value-free science and technology on the one hand and political control on the other. This division conceals the existence of technological alternatives and thus forecloses the democratization of technological design.

In either case, naturalistic or social, the difference between hard and soft is not a gradual scale, but a question of final answers. Do we have moral autonomy, yes or no? Is there normally one best solution, and does all fundamental change stem from nature, or do technological alternatives always exist?

All of these answers result in differing perspectives on the possibility of change. When God and the subject have died and moral autonomy is discovered to be a bourgeois fraud, it is hard not to become pessimistic.

Soft determinist theories usually are less comprehensive, and offer more hope for change.

Naturalistic and social theories look for a change in opposite directions. If you believe in moral autonomy you may try to convince or convert your public by moral appeals. If you do not believe in moral autonomy, but do believe in technological choice, that is, in changing the context of choice, you may prefer to bring about some kind of institutional reform or start a revolution.

And when you deny both naturalistic and social technological determinism, people might call you an optimist.

Some conclusions: Corresponding to these different perspectives on technological change, we can recognize different approaches in technological ethics, broadly conceived.

(A) *Applied ethics*, of course, is only compatible with freedom. On the basis of its voluntaristic outlook, it ignores the dynamics of technological development, to devote all attention to the moral dilemmas of the case at hand. Beauchamps and Childress could be mentioned as representatives of this approach. In their theory of medical ethics, technology is simply neglected as a

relevant condition of choice.[2]

(B) *Empirical technology studies* (ETS) focuses on the social constraints of technological innovation, mostly on a micro or meso level of study.[3] The moral viewpoint is mostly implicit, but certainly not absent. Constructive technology assessment (CTA) presents a clear example of an attempt at institutional reform.[4]

(C) *Moralism* respects the natural sciences as the moving force of modernity. It typically opposes morality and technology. At a macro level, some kind of traditional morality, or responsibility, is called for to set boundaries to the unguided enterprise of technological progress. Hans Jonas is a famous moralist.

(D) *Romanticism*, finally, is the one and only really forceful adversary of applied ethics. Both the moralist's and the reformist's way out are denied on grounds of a strictly deterministic explanation of history. Romanticism has its own kind of ethics, but there is no suggestion of a solution of moral dilemmas, no ethical advice or procedure. In opposition to earthly morals, which are just an extension of deterministic structures, there is some kind of secret, personal, existentialist spring, accessible only to an avant garde. Martin Heidegger is the godfather of this approach.

As a last reflection here, I want to note that in discourse where technology is recognized as a subject of moral or political importance, few people support a strict voluntarism or a strict determinism. The crowd is to be found under the headings of "moralism" or "critical sociology."[5] Both approaches sense the need to complement applied ethics with some further reflection on the context in which moral dilemmas arise, but do not want to give up the goal of changing the world (instead of only understanding it) and healing society. However, both positions are theoretically unstable; both are torn between human freedom and material necessity. Moralism believes in moral autonomy and therefore could explain change; its problem is to account for the absence of change without sliding into determinism. Critical sociology can explain order, but has a problem accounting for actual change without becoming either voluntaristic or naturalistic.

III. THE LEGITIMIZING ROLE OF APPLIED ETHICS

Now, with our case of cloning at hand, we can briefly consider which

arguments will be launched by the various schools among autonomous technology thinkers against the approach of applied ethics.

First we must note that, although Hans Jonas's discussion of the case pretended to stick to generally accepted morality and to refrain from religious or otherwise only locally valid motives, in fact it presented a clear example of a moralist critique. Jonas wanted to confront the utilitarian, too eager acceptance of this new fruit of modern technology with a fundamental stance. However, as I have shown, his defense of the ostrich-option, the right to be spared any insight into one's personal future, is not really general. One can imagine that others will consider the clone's option to combat his genetic fate as favorable. As a true moralist, Jonas criticizes applied ethics as legitimizing ambiguous new inventions by omitting fundamental moral evaluations. Liberal morality is unable to lock the door against barbarian science and technology.

Critical sociology's attack on applied ethics takes a completely different angle. In fact, its criticism of Hans Jonas's moralist position is even harsher than its objections against the approach of pure voluntaristic applied ethics. Whereas it only scorns the blind spot of simple applied ethics, permitting the political strategies of others, it opposes both the presumption of moral autonomy and the naturalistic determinist theory of the moralist's position.

Discussion of the cases of cloning has not yet been elaborated sufficiently so that separate examples of such arguments against the one and the other position can be given. However, writing from a critical sociologist's point of view, Jelsma raises doubts about the procedure of delegating evaluation of ambiguous technology to ethics committees (ECs).[6] He mentions three problems: (1) ECs listen to experts much better than to ordinary people; (2) ECs never give uniform answers, so politicians can do as they please; (3) ECs get entangled in the seamless web of technology and society. Industry well understands how to promote projects in such a way as to commit ethics, by serving some of its highest goals, whilst infringing on others. Sour wine is being sold under a sweet label. Jelsma's line of critique is clear: applied ethics wants to speak from a politically impartial and independent viewpoint, which in reality does not exist. Applied ethics is embedded in society. By not reflecting on the use others can make of its presumed independence, applied ethics ends up serving industry by helping to get society accustomed to new technologies instead of adjusting technology to the

needs of society.

I do not want to pass judgment on the functioning of the ethics committees which were summoned to advise, for instance, the European Parliament and President Clinton, but Jelsma's criticism is certainly applicable to Hans Jonas's contribution discussed above. By directing all attention to the question of the quality of life of human adults cloned from adults, Jonas withdraws attention from other possibly much more realistic and urgent problems, like the cloning of fetal tissues for transplant purposes, or animals suffering from more or less successful experiments, and other so-called side effects. Critical sociology invites us to search, quasi-empirically, for the nearby real harm, instead of the far away imagined harm.

As opposed to moralist criticism, which presupposes almighty technology to be able to produce things that could work perfectly but are morally unacceptable, critical technology studies seems to have more moral confidence in nature: a technology, which in a moral sense ought to be forbidden, will turn out to have lots of undesirable side effects. So, instead of abstract theorizing, the ethics of empirical technology studies could follow the heuristic of the side effects. Whereas general applied ethics, by stripping moral questions from their context, makes it impossible to decide whether cloning finally is permissible or not, the side effects, taking place in the close context of people's backyards, have the benefit at least of moral clarity. So if applied ethics knows no generally valid reason to forbid cloning human beings, critical sociology would say that the ethicists have not looked closely enough.

From the last perspective, Romantic criticism, no real discussion is to be expected. The Romantic thinker will regard all applied ethicists as puppets on strings, speaking with the voice of science, technology, and capitalism. Obvious arguments of this sort include that cloning presents the ultimate possibility of eliminating individual differences. This is a precondition for bio-industry to produce strictly equal commodities, all just alike, as consumer electronics industries are already doing. Also, by referring to classical thriller literature, like Ira Levin's *The Boys from Brazil*, a connection is suggested between cloning and modern "totalitarian" technological society. In the Netherlands, the public admonitions of the society for the prevention of cruelty to animals display this doomsday approach.

NOTES

1. Hans Jonas, *Philosophical Essays* (Englewood Cliffs, N.J.: Prentice-Hall, 1974), pp.159 ff. In German, *Technik, Medizin und Ethik* (Frankfurt: Insel, 1985), pp.187 ff.

2. T. Beauchamp and J. Childress, *Principles of Biomedical Ethics* (New York: Oxford University Press, 1994).

3. T. Misa, "How Machines Make History: And How Historians (and Others) Help Them To Do So," *Science, Technology and Human Values* 13 (1988): 317-329.

4. J. Schot and A. Rip, "The Past and Future of Constructive Technology Assessment," *Technological Forecasting and Social Change* 54:2-3 (1997): 252-268.

5. This seems to be in accordance with the division of the professional field into two halves; the moralist side is represented by the Society for Philosophy and Technology, the social side by the Society for Social Studies of Science and the European Association for the Study of Science and Technology.

6. Jaap Jelsma, "Onbehagen is ook een argument tegen klonen," *De Volkskrant*, April 4, 1997.