

# Technological development without ethics?

**Speech delivered by Prof. Dr. Zygmunt Bauman at the sixth workshop of the *McKinsey bildet.* initiative at the Deutsches Museum in Munich on February 19, 2002**

Ladies and Gentlemen,

All people like to talk about their own experience, to remember times when they were young. I am not an exception, and so I will start by remembering two cases in my research, in which I think I discovered (for myself at least) some important truths about the problems which we are talking about today.

The first was my experience as a very young sociologist – it happened almost half a century ago – a research project concerning the motivations of people who became members and militants of the communist party in Polish industrial plants. I found out, much to my amazement, that the most active elements in the factory party cells were the most highly qualified engineers. With their high education in this allegedly ‘working class’ party, it was the engineers who played the major role. And then I questioned them: Why did they join the Communist Party cell in the first place? And why did they become its activists? Again, a surprise: these party activists were not second-rate engineers who sought, as we the researchers suspected, a compensation in political careers for their ineptitude and low level of skills in their profession. On the contrary, their average professional level was much higher than that of the non-party-member-engineers. They were highly qualified; they were highly ambitious; they were thoroughly dedicated to their jobs; and when pressed and pressed and pressed to explain “Why did they join the party if they were such dedicated technologists, engineers in the first place, if being engineers, that was their whole life?” they answered: “If I want to have a better technology, if I want to have a better efficiency, a better effectiveness of work, better organization of work, I have to join the party because then I can influence the course of events, I will be listened to and I will be treated right.” So, they said, “membership of the party is just part of my professional status; it is a most logical consequence of my serious treatment of the technology for which I am responsible.” Professionally speaking, they were by all conceivable standards impeccable, exemplary engineers. They were real professionals; they abided by every single rule you can think of in the case of a highly technologically qualified person. They met, I am sure, all the criteria that Professor Rajewsky listed as the measures of the ‘professionally ethical standards’ in technology and in science.

The second case, twenty odd years later, happened when I started studying the history of another mystery – of the involvement of German science in what came to be known as the building of ‘neue Ordnung’ in Europe, part of which was the operation called Endlösung by the perpetrators, and renamed Holocaust by the victims and their researchers. Again, much to my own personal surprise, I found Robert Proctor, who said in “Racial Hygiene” that those who participated in that enterprise did so because they were given an opportunity: they volunteered. Their results were presented at prestigious conferences massively attended by academics. Robert Proctor's conclusions have been amply confirmed by other studies and in whatever I found in my own study. The experiments in Ravensbrück, which in retrospect were to be described as awesome crimes against humanity, were analyzed in a very solid and methodologically flawless scientific fashion by no less a scholar than Professor Ferdinand Sauerbruch, one of the luminaries of biological science of the time. The other people, without whom the history of ‘Rassenkunde’ or ‘Rassenhygiene’ would be simply unthinkable, were similarly highly qualified scientists of international fame, people like Lenz, Verschuer, Fischer, Rudolf Ramm, Kurt Blome, Gerhard Wagner, Lehmann, Baurmeister and quite a few others of similar respectable academic standing and scientific credentials, who quite rightly considered themselves the descendants and the successors of the work undertaken by people like Virchow, Semmelweis, Koch or Pasteur. I can say, and I believe that I am right to say, that on the grounds of their scientific achievements these people would be admitted with pride and joy by any academy of science in any country of Europe. And that they would be showered with scientific distinctions – as one of them, Professor Konrad Lorenz, the author of best-selling books read around the world, who was accorded a Nobel Prize in 1957, but who in 1940, when he had to justify the supplying of funds for his research in Nazi Germany, wrote what follows: “There is certain similarity between the measures which need to be taken when we draw a broad biological analogy between bodies and malignant tumors on the one hand and a nation and the individuals within it and who have become asocial because of the defective constitution on the other hand. Fortunately, the elimination of such elements is easier for the public health physician and less dangerous for the supra-individual organism than such an operation by a surgeon would be for the individual organism.” Konrad Lorenz wanted to be understood by people to whom he addressed his application for funds, so he wanted (he had to) to express the significance of the scholarly project dear to his heart in terms of ‘usefulness’ as defined by those in power. From Götz Ally’s and Susanne Heim’s eye-opening book, “Vordenker der Vernichtung,” you can learn that not just biologists, geneticists, or experts on race but all sorts of other scientific professions followed very much the same way. I quote from this book: “so wie wir sagen, dass russische Anthropologen, Mediziner und Biologen die Ausgrenzung und die Vernichtung ‘Minderwertiger’ als eine wissenschaftliche Methode zur Verbesserung und Gesundung der Menschheit begriffen, so meinten Ökonomen, Agrar- und Raumplaner an einer Gesundung der sozialen Struktur in den

unterentwickelten Regionen Deutschlands und ganz Europas arbeiten zu müssen. Die Wissenschaftler verstanden sich ebenso wie die Experten nicht als Ideologen. Diese Experten lieferten wissenschaftliche Gutachten.”

You can find very much the same attitude and conduct among the luminaries of human science, people like Planck, Sommerfeld, Heisenberg, or Von Laue. All of them counseled patience and restraint in dealing with the government. Their primary goal, naturally for dedicated men of science, was to preserve the professional autonomy of their discipline. The paradox was that in order to preserve the professional autonomy, they had to accept the heteronomy of their status. Heteronomy – being given orders, surrendering to the rules not of their own making but made by the powers-that-be on which they depended for the pursuit of their own scientific research. They were not greedy men. They were not money-greedy men. They were not power-greedy men. They were not shortsighted men. They were not ideologists in disguise. They were first-class scientists who could not promote their science in any other way than by accepting the rules of the game.

Margaret Thatcher once said, “Unemployment is the Trade Unions' fault: they have priced themselves out of the job.” I am not sure about industrial workers, but I guess that this opinion has some credibility in the case of modern science. In the result of its own astounding success, science has become extremely expensive business. It priced itself out of the backyard-outbuilding or the garden-shed private laboratories of rich amateurs of the nineteenth century. It also priced itself, more recently, out of the financing capacity of the state. One hundred years ago almost all scientists were ‘Staatsbeamte.’ It was the matter of the state to promote science, to secure the conditions of its regular development; science at that time was, after all, an element in all main concerns of the political power – like integration of the nation, promotion of the social order, solutions to old and new social problems. But with the falling economic power of the state and the fading interest of the state in the problems mentioned a moment ago, political powers began to sell their orthodox functions off to the market agents.

Science also priced itself out of the state patronage and needs to seek another patronage, which it does. And this other patronage is the market, the big corporations whose favors we seek and to which we write when needing funds to continue our research; and from which, if we are lucky, we receive the funding we need. If we follow the example of Konrad Lorenz, we manage somehow to justify the usefulness of what we are doing not in terms in this case of ‘Verbesserung der Menschheit’ as in the times of Konrad Lorenz, but in terms of profit, of satisfied shareholders, of the benefits that truly count for the companies that fund our research.

What I am trying to convey to you (I’ve developed this topic a little bit more widely in the written text that you have in your files, so you can consult it later) is that you can’t reduce the issue of the ethical significance, the ethical impact of

science and technology, to the question of the ethical convictions of individual scientists and individual technologists. In the same way as you cannot reduce the issue of ethics of politics to the question of morality of the single politicians. What President Clinton does with his cigar, for example, is a very important question but does not come anywhere near the problem of morality of politics as such. In the twentieth century we learned by the hard way how unreliable may be the patronage of the State regarding the ethical principles of politics. But can we trust the wisdom of 'the invisible hand,' 'the finger of Providence,' 'the cunning of Reason' – in other words the spontaneous, elemental, uncontrolled, untamed forces of the market – any more? Can we now hope that the ethical problems or the impact of scientific discoveries and their technological applications will be taken proper ethical care of by the forces of the market?

Well, you read the newspapers as I do, you'll know how truly unreliable the discredited political power has become in the twentieth century, how unreliable these new patrons of science are today. You have read recently with horror about the scandal of Enron, but even more horrifying in the long run is the impact that scandal had on the thinking and conduct of other corporations. They started speaking about ethics quite a lot, about the responsibilities of corporations quite a lot, too. But what are they speaking about? Do they condemn the Enron case for the tremendous harm, the repulsive damage done to millions of people who trusted them, taking advice from the company? No. What they are speaking about, how they define the problem put on the agenda by the scandal of Enron, is how to recover the trust of the investors, to cream off more money yet than before... Their real fear is that less people will want now to buy shares of other, not yet caught in the act, energy companies.

This is, roughly, the message I wished to bring you today: that the problem of the relationship between technology and ethics, between science and ethics, is far from being resolved. It is not exhausted by the issue of the principles by which individual scientists should guide themselves. If scientists are moral in the sense the scientific activity gives to 'ethics' – honest and truthful to their own research, to teaching their students to observe the purity of the experiment, to distinguish between facts and their interpretations – well and good. But by itself it doesn't bring us any closer to the huge question which we are confronting today: the question formulated, for instance, by the great German ethical philosopher Hans Jonas. He said that now, for the first time in history, we have a technology with which we can act with tremendous distance in space and time. With this sort of powerful technology, we can affect the conditions under which faraway people, whom we will never meet, and the next generation, whom we will never know personally since it will be born when we are no longer around, will have to live and struggle through life. But, said Jonas, our moral understanding and powers of discretion are still at the level of Adam and Eve – they do not look behind the nearest fence.

I suggest to you, ladies and gentlemen, that there is a tremendous gap between our ability to act and our ability to morally, ethically master the enormity of our actions. I also suggest that the filling of this gap is likely to be the most daunting challenge confronting you in the 21st century.