
Prologue

Graz, like Austria as a whole, has long been a melting pot for various cultures. It functioned as a bridge between the northeast and southwest of Europe on the one hand, and between the northwest and southeast on the other. Ludwig Gumpowicz, who founded sociology in Austria, is a clear example of the fruits of this cultural diversity. Born in Krakow, Poland, he became a professor at Graz University, which was founded in 1585, and published his works in both German and Polish.

Gumpowicz and his work are history, but the tradition he exemplified is very much alive. Today, we again have many young scientists here in Graz, and they come to us from all corners of the earth. They are carrying on the old tradition—and some of them work at the Institute for Advanced Studies on Science, Technology and Society in Graz. These colleagues are the second consignment of guest scientists to work at the Institute since it was founded. They were based there from October 2000 until September 2001. I have read the research papers of these colleagues with great interest. The themes chosen range widely: Dr. Ellen Balka of Burnaby University (Canada) worked in Graz researching into 'Skill, Gender and User Involvement'; Gerald Berger M.A., an Austrian at Cardiff University (Wales) worked on the 'Evaluation of Technological Innovations in Industry and their Promotion through Instruments of Environmental Policy Making'; Dr. Ulrich Dolata of Bremen University (Germany) chose 'Competition, Cooperation and Networking in Biotechnology'; Dr. Dimitri Efremenko of Moscow University (Russia) took on 'Technology Assessment as an Instrument of Prospective Environmental and Technological Policy'; Dr. Annette Ohme-Reinicke of Flensburg University (Germany) worked on 'Technological Development and Social Protest Movements'; Maria Rentetzi, a Greek M.A. of Blacksburg University (USA) worked on 'Women Physicists and the Material Culture of Physics'; Dr. Ariella Vraneski from the Institute of Technology in Haifa (Israel) wrote about the problems surrounding the 'Planning for Urban and Regional Sustainable Development'; and, finally, Doris Wallnöfer M.A. from

Vienna University (Austria) wrote about 'Techno War: The Diffusion of War into Contemporary Culture and Politics'. Their works are documented in this Yearbook 2002—together with contributions of Guest Lecturers and Visiting Fellows—, just as the works of the first consignment of colleagues, who visited the Institute between February and October 2000, were documented in the first Yearbook (Munich and Vienna: Profil 2001).

At our Institute, we understand 'technology' to be a social project, a synthesis of technology and science which helps shape the future. In this context, we are interested in the social-ecological and social-psychological requirements and effects of 'post-modern' technology, in particular—but not only—computer technology and biotechnology. A nuclear power station, to take an example from another technology, must be administered with total technical perfection. There is no margin for error. But over and above the actual technical demands, a logistically perfect safety apparatus is needed to deal with questions of both space and time, which also directly deals with citizens' rights and sheds an effective ideological light onto other areas too. On account of their formal rationality, this administrative and safety apparatus—based mainly on the technological circumstances—is a medium of power (for the state) of the first order. The dependence—one might even say the restriction—of normal life by (or through) the correct functioning of such bureaucratic apparatus thus induced is increasing steadily, and the dream of the possibility of removing it is becoming increasingly utopian.

The problems surrounding nuclear energy might be an extreme example, but by no means the only example for such (technologically induced) social effects. We see 'technology', as indicated, as a social-historical project. All that the prevailing interests in society intend to do with man and objects in the future, is projected into it. Not only the use of technology, but also the actual technology itself is power; power over nature and power over people; methodical, scientific, calculated and calculating power. The specific aims and interests of those in power are not forced on technology in retrospect and by outside forces (although this can sometimes be the case), but rather: they are built into the technical apparatus from the start. The gut of 'technology' is never neutral. The

reasoning behind technology is always the ruling social reasoning. The implication of this, however, is that it can change structurally. The work of our Institute is marked by the fact that we not only reflect on the situation, but that we also intervene in effective and practical ways in various social fields. We are dealing here with the formation of the social framework for developing and administering technology, influencing it in such a way that certain forms of technology can spread easily whilst the progress of others is slowed down. We take Karl Marx's eleventh thesis seriously in this respect, namely that philosophers interpret the world in different ways, but the crux of the matter is to actually change it.

Actively shaping tomorrow's technology, and the development of it, is one of the greatest challenges of our age. Within the framework of the Institute for Advanced Studies on Science, Technology and Society in Graz, Fellows from all over the world can make valuable contributions towards understanding the complex field of science – technology – society. As I have already remarked, technology is not merely a tool, not simply applied science, nor is science merely an accumulation of knowledge. Rather, both science and technology are formed by the way they are embedded in society. In order to consciously shape technology in a social and ecological manner, reflections which overlap the various fields are necessary, as is also the development of concrete plans of action, entailing both the development of socially and environmentally friendly innovations, as well as the opening up of and democratisation of networks. Engineers and scientists in particular are called upon to play their part in this task in a constructive and responsible manner.

The democratisation of the processes which shape technology demands a more profound understanding of the interrelations between science, technology and society. The interdisciplinary examination of technology, and how it can be socially shaped, is the task of the Institute in Graz. This offers Fellows from all over the world the chance to scientifically explore global technological changes and their social and ecological results. Scientists wishing to research into the correlations and interaction between science, technology and society will find here both the necessary framework to do so as well as an attractive centre for research. The Institute additionally acts as a forum for debate between

international experts. Critical discussions help to improve the quality of the scientific work carried out at the Institute. Both international fellows and the staff at the research institute in Graz itself profit from this. With its efforts in the technological/political field to make a lasting impression upon the development of technology, the interdisciplinary institute consciously takes its place in the scenery of universities and other research institutes in Graz.

The second consignment of scientists to visit the Institute was marked by a further highlight. One of these young scientists, Maria Rentetzi, initiated as part of her fellowship a two-day workshop, from 7th to 8th June 2001, to which she invited scientists from the USA (Prof. Dr. Joseph Pitt, Prof. Dr. Richard Burian), from Australia (Prof. Dr. David Mercer), from Greece (Prof. Dr. Aristides Baltas, Prof. Dr. Michalis Assimakopoulos) and from Russia (Prof. Dr. Vitaly Gorokhov). In this connection, I was particularly glad to hear once again from our old friend Prof. Gorokhov from Moscow. The contributions of these scholars can be found in this Yearbook.

The workshop was not only an academic highlight for the Institute, but also a social highlight. Without doubt, technology is an important element of human culture—and sometimes a dangerous one. But there are also other important means of expression in human culture. Thus at the end of the workshop, the participants departed on a (natural) ‘scientific’ excursion to the southern Styrian vineyards. Wine—and all that goes with it—is without doubt an important element of human culture and, as experience has shown, sometimes a dangerous one. Be that as it may, thanks to modern cellar technology, we now have the best wines ever at prices people can afford. The participants were able to form their own opinion of this. The technological revolution of viticulture began with the introduction of temperature controlled fermentation processes in stainless steel tanks and in pressure tanks. Yeast cultivates best within a fairly narrow temperature range, namely between 12 and 37° C. Steel, unlike wood, is an excellent conductor and can therefore be cooled more easily. In addition, it can be cleaned more easily. A cool fermentation, particularly for white wines, is better able to bring out the fruity aroma and character of the wine. With the aid of higher temperatures, on the

other hand, particularly for red wines, a maximum of colour and intensive taste can be achieved. The regulation of the temperature and the main control mechanisms available to vintners today are largely computerised. Thus the participants of the excursion ran the full circle through computer technology, metallurgy, enology, hygiene and general human culture.

The establishment of the Institute for Advanced Studies on Science, Technology and Society would not have been possible without the generous assistance of the Austrian Federal Ministry of Education, Science and Culture, the Styrian Government and the City of Graz. We especially wish to thank all the decision-makers who gave their support to this project. It is owing to their help that Graz and Styria were able to put themselves on the international map of science and technology research.

My special thanks go to the Karl-Franzens University and Graz University of Technology and to their representatives on the Scientific Advisory Board, Prof. Elisabeth List and Prof. Hartmut Kahlert, who promoted the Institute in many ways. I also extend my thanks to the Institute's staff, Günter Getzinger, Bernhard Wieser and Reinhard Wächter, whose commitment to this institution and to the Fellows is of inestimable value. And finally, my thanks also go to the Embassy of the United States of America in Vienna for its support of the workshop.

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Director of the Institute for Advanced Studies on Science, Technology and Society,
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