

## **And the Word Was Made Flesh...**

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### **Demands on a humane information society**

The emotions with which people react to the beginnings of the so-called information society range from euphoria to outrage. As understandable as the individual emotional reaction may be, we should not give credence to its rightness. In this paper I would like to look at the "Informationsmaschine Mensch" and its embeddedness in society, not with uncritical, optimistic exaggeration, nor with an attitude bespeaking a despair of civilization; rather I will avail myself of methods taken from the realm of social and cultural sciences with the aim of evaluating the current trend. What age are we living in? What main trends can we discern? What central problems are emerging? What trends can we expect?

### **"Valuable" science?**

Such a description, however, obviously cannot be objective, but must always be meshed with one's own wishes and hopes — in my case the wish for peace and co-operative co-existence, for conditions that really deserve to be called "humane", for living conditions in which a man does not behave like a wolf to other men. This expression of my personal feelings serves as a compass and a guiding principle for a scientific analysis of the present that is bound by certain methodical standards but from which no particular ethical stance can be derived. That brings us to a core problem of contemporary science that is outwardly unbiased but which, in so being, becomes accessible for all manner of misuse. The first step to be taken by humane science should thus be expressly to disclose its underlying system of values.

So let us take a look at our world with this in mind. Looking to the rich nations of the Earth, the great significance of technological innovations is clearly illustrated. They have advanced to become the key factors of international business competition. No longer are hoards of gold, physical labour or raw materials the foundations of wealth but rather the ability to hold one's own and dominate the world market with new technological means on a global scale. Although the industrial revolution of the previous century represented an unprecedented thrust of virtuoso handling of Nature and natural materials under capitalist conditions, capable of multiplying the productivity of human labour by a factor of between ten and more than one hundred, it not only brought incredible wealth but also undreamt-of poverty upon large sections of the human race, farmers, craftsmen and workers. Personal social predicaments became a breeding-ground for the dissemination of racist anti-Semitic inhuman ideologies, guided by politicians, that were to lead to the great disasters of this century, two world wars and mass murder.

### **Technology as a bringer of salvation**

The ambivalence of technological innovations, amplified by the social order, is not only revealed in 20th-century disaster scenarios but is also expressed in chronic problems of global dimensions. These are not least the result of the sweeping success and fast diffusion of applied natural science on a global scale. Human intervention in natural cycles has caused the greenhouse effect and the hole in the ozone layer, ground-level ozone and radioactive contamination, leading to an imperilment of the fundamental conditions of human life on our planet; the promotion of the economic advance of the First World pushed ahead by the new technologies is creating social inequality in the Second and Third Worlds [which are in the process of dissolving into so-called "Reformstaaten" or former Eastern bloc countries]. This

inequality is worming its way into the affluent metropolises of the world in the form of slums. Entire societies are endangered by their dependence on the omnipresence of new technology, without which they cannot exist. I do not just mean the atomic bomb or civil nuclear technology, I mean the whole banal dependence of our viability on electricity, telephones, computers and electronic networks.

The most recent progress of technology, the emergence of electronic information and communication technologies, is reflected in statements made by leading politicians and business magnates of the countries of the triad [NAFTA, EU and Japan]. They all stress the necessity of a global, trans-continental or national information infrastructure with the aid of which we could construct a new society, the information society. It would create the necessary jobs that have dwindled in recent decades along with the branches and remnants of industrialized society. All levels of the population would be able to benefit from the information society. The drastically reduced costs of information, communication and organisation would allow us to create a democratic society with little hierarchy in which there would be no room for exclusion. Difference of race, class, social stratum, sex, disability would all be concealed behind the computer screen, and the ideal of human equality and democracy could emerge the world over.

Historically, we can observe an inner kinship with statements made at the beginning of this century in which the Russian revolution evokes the humanizing effect of electrical energy with the slogan "Communism is Soviet power plus the electrification of the whole country" [Lenin 1920: 513]. The aspirations of the French Revolution for the blessings of burgeoning natural science can also be compared to contemporary politico-economic rhetoric. Technology is regarded as being the solver of all societal problems and a carrier of the hopes for paradisiac conditions.

### **Current problem areas**

No matter how much my personal wishes coincide with the opinions of Euro-politicians, a methodical restriction is called for. As suggested by the above examples, new technologies cannot have a humanizing effect per se. They merely offer an extended field of opportunities for social or personal development. Only their embeddedness in society will determine what particular paths will be taken from the range offered. In order to realise a specific potential inherent in a new technology it is first necessary to surmount various obstacles, first and foremost the politico-economic, then the social and the cultural. And that's the crux of the matter.

In the name of deregulation, the state is currently gradually passing on traditional monopolies and substantial former activities to private enterprises, on the one hand for reasons of inefficiency and excessive costs, and on the other because it maintains that public services can no longer be financed. This procedure certainly makes sense in a society in which the wealth of all individuals has greatly increased and in which services can easily be financed from the high incomes of private households. In a society of growing social differences and exclusion, deregulation can also lead to increased disintegration. Although a deregulated economy offers greater scope of action for the individual enterprise, although the strategic scope can be expanded vis-à-vis national and international rivals, and — as is the case with the release of electronic networks and phone services — because we can expect to see Internet charges drop, the national job cutback due to rationalisation and outsourcing bears no balanced relation to the number of jobs that could be created through tele-work and innovative products [under the same economic conditions]. The social decline of large sections of the population

in the emerging two thirds society annuls the central precondition for a meaningful strategy of deregulation. Quite the reverse, it necessitates greater commitment by the state to cushion this socially unacceptable situation for a growing minority if society is not to be driven into a decline characterised by desperate individual predicaments, clashes over financial, intellectual and material resources, increased crime, racism, anti-Semitism and anti-women attitudes.

### **Requirements for a humane information society**

If real construction of the information society is to succeed, at least three preconditions must be fulfilled. First, the appropriate infrastructure must be created; second, this infrastructure must provide universal access for men and women; third, it must be possible to acquire qualifications allowing us to use the electronic networks. The order of this list of requirements is important. Fulfilling the preceding item is the precondition for being able to fulfil the next. If even just one of these prerequisites is missing, there will be a danger of further division of society already torn by differences of class and stratum.

### **Is the electronic infrastructure sufficient?**

As we know, especially in Austria the info-highway has not yet been built up so adequately as to provide a sufficient communication infrastructure. Essentially, today's users have two grievances: firstly, phone charges are still too high [40 Austrian Schillings per hour] for less wealthy private individuals, above all young or old people, to take advantage of the Internet or other services without it being an excessive financial burden; secondly, the frequency range of existing lines is still fairly low with the effect that graphic images and videos can only be transmitted in poor quality and after prolonged waiting times. However, a development is emerging with regard to the former that is highly likely to bring about a considerable reduction in charges. The Post Office is expected to reduce charges for data transmissions to 10 Austrian Schillings per hour as of Autumn 1997 — in anticipation of future rival services that will be set up according to EU law as of 1st January 1998 when the state monopoly on phone calls ceases to apply.

At the same time, other clusters of companies are waiting to enter the marketplace as network providers. The biggest cable TV company, Telekabel, will provide former TV consumers with a permanent Internet link via its private network with the aid of a few relatively inexpensive add-ons, at a fraction of previous costs. The Austrian Federal Railways and the electric supply companies [both with nation-wide cable lines] will also take advantage of the needs of the moment and offer their infrastructure on the market. So we can expect to see electronic network connection charges drop rapidly due to competition and increased demand.

What is more, in a few years' time international syndicates will have low-flying earth satellites [IRIDIUM with 77 satellites, Bill Gates' TELEDISC with allegedly in excess of 800 satellites, INMARSAT with slightly higher-lying 12 satellites, and finally GLOBALSTAR, favoured by the EU, with 48 planned artificial satellites are in planning] [Ege/Fleissner 1995: 27]. Basically, the network of the future should be accessible at reasonable prices and should possess the necessary frequency range. Within its ACTS programme [Advanced Communication Technologies and Services], the EU is planning to create the conditions for an extremely fast electronic infrastructure for the information society, above all on the basis of photon technologies in glass fibre lines [Fabianek et al 1997: 54]. The first field trials are already underway and are planned to venture into frequency ranges of 40 gigabits per second, i.e. roughly 300 times faster than current Post Office lines with 155 megabits or 34 megabits per second [Fleissner et al 1996: 258—259].

It can be safely assumed that the necessary infrastructure will no longer be made available by the state as a monopolist provider — as has been the case in the last one hundred years — but rather by competing private companies. But the state should not withdraw completely. It will still be urgently needed to formulate and monitor technological standards and adequate quality of services; what is more, the state — who else? — must ensure fair access conditions and blanket supply so as to avoid any blank areas on the network map.

### **Universal access?**

In order to obtain a realistic assessment of the extent to which electronic networks are actually used it is helpful to take a look at the empirical structure of the users. In Austria there are no precise data. The number of users will probably be something like 300,000, the vast majority being students and teaching staff at universities, public administration and major software and hardware company employees. So far, proportionately, private households have been of secondary significance. Going by that, around five per cent of the Austrian population is currently on the net [1997]. The trend is rising, and with costs dropping and frequency ranges expanding, private PC owners [supposedly around a quarter of all private Austrian households own a computer] will increasingly start buying modems and net connections.

In the United States, the pioneer in all things connected with electronic networks, this trend towards mass private use can already be evidenced empirically. The dynamism in this case is very much akin to the telephone. Where once the telephone was limited to the world of business, it soon spread as a medium of family communication for gossipmongering between members of local neighbourhoods, above all farmer's wives, in big cities and small towns across America [Flichy 1994: 152]. This, then, was the foundation stone of mass, i.e. profitable, use. It would seem that this story is now being repeated with the Internet in the US. According to an empirical American study by Control Data [1995], the main focus of Internet use, at least in terms of email, was initially in the public sector. 83 per cent of employees of public facilities used email, compared to only 62 per cent of private company employees [CONSUME 1995]. At the beginning of 1996 it was discerned that 63 per cent of all users were using the net for work at home [cf. <http://etrq.findsvp.com/internet/demograph.html>], and that 69 per cent have an Internet link at home [only 48% at work and 21% at school]. In the US we are hearing reports of a boom among senior citizens. As net connections spread through the general public, the average age is increasing more slowly [26 at the beginning of 1996], a fact corroborated by the higher percentage of women, 35 per cent. The average income of Internet users is \$ 61,500, i.e. in the high-income bracket, which is also backed up by the large percentage of white participants, 83 per cent. We can expect to see the average income drop, whereas the percentage of women and the average age will continue to rise.

Various results that correspond to the previous conditions in the US can be found in Germany [see <<http://www.w3b.de>> for latest survey results]. In 1996 the percentage of schoolgoers [5.8%], students [29.8%], graduate students studying for doctorate [5.1%], and public officials [3.9%] totalled 45 per cent of the overall Internet clientele, while employees made up 36 per cent. Self-employed persons made up 13 per cent. 45 per cent of all accesses were via university or school, 38 per cent via the employer. At 17 per cent, private access was still fairly low. The usual statement that the Internet is chiefly used by people with a high level of education is also reflected in the German survey: 78.4 per cent of users were high-school graduates [Abitur] in 1996. The relation between the sexes is still distorted in favour of men, although the trend is dropping [FRG: 1995 94%, 1996 91% men]. In Germany, the average age has increased from 29 [1995] to 30 [1996].

So we can hardly speak of universal access to the Internet in Germany and Austria, as is the case with television and, to a great extent, with the telephone.

There are also considerable disparities on a global scale. The main activity of electronic networking is taking place in the major American metropolises, followed by European and Japanese cities and their links. Africa and Latin America are practically blank areas on the global map. So McLuhan's buzzword of the "global village" [McLuhan 1995] will have to wait a while before it becomes reality [only 10 per cent of net users lived in the country in the US at the start of 1996, the majority was located in cities or their immediate surroundings].

### **Higher education or reduced demands?**

Even if costs are reduced and even if user friendliness is considerably enhanced, the education barrier will still be a selection factor favouring the highly-qualified, young and wealthy of this world. There would appear to be two paths to widening net access that are not necessarily mutually exclusive. The first is to reduce the qualifications needed to use net technologies, the second, by reverse, would be to put higher qualifications within the reach of larger sections of the population. Strategies in the vein of the first path would include striving to expand broadband networks in connection with compression technologies or, as an alternative, developing software for easy, safe money transfer in combination with simple searching and ordering facilities on the net. On the one hand, by means of video on demand or interactive virtual reality [electronically mediated encounter between people in virtual space], allowing three-dimensional navigation with the aid of 3D glasses or a head mounted display], the net would be brought into line with television entertainment services, while on the other it would be opened up for mass electronic trade. So the first path could greatly enlarge the demand for net services.

But entertainment and commerce are not the only possible factors for extending use of the net. The second strategy, that proceeds on the basis of increasing the qualifications of the population, would also have the advantage of intensifying the flow of fountains of wealth and culture. There is no limit to the possibilities. I am not just thinking about increasing vocational qualifications [which would above all serve the business world], but also the good old notion of education that was closely linked with humanity. Particularly in an age in which the isolation of the individual is becoming more and more frequent as an empirical phenomenon, in which we hear about increased competition and growing desolidarisation, educational measures would indeed be very important. They could help create a climate characterised by tolerance, co-operation, harmonious and peaceful human relations, in which curiosity and creativity are promoted. On this basis it would be possible to make more humane the new electronic spaces opened up for us by technology, cyberspace and hypertexts, multi-user dungeons and Internet relay chats, the multimedia facilities and video on demand and to fill them with humanity, not least for the commercial benefit of companies and to the advantage of society as a whole on its way towards a sustainable development, without pogroms or wars. Fulfilling the aforementioned demands in terms of infrastructure, accessibility and qualifications is the minimum requirement for a humane information society. However, we must be careful. Even the very best infrastructure setting offers no guarantee that negative traits will not force their way to the fore. Central monitoring, authoritarian governments, racist legislation — essentially, everything is possible with the aid of modern networks. Only humane social policy on as wide an international footing as possible will make it possible to utilise these technological structures in such a way as to contribute to general public welfare.

### **Where does this fascination come from?**

So far, I have opted for a viewpoint that takes into account rational human behaviour. But can such a viewpoint suffice? Doesn't such an approach to the world that is based upon logical human considerations soon lose sight of the world of emotions, yearnings and hopes? Do these sentences, sicklied o'ver with the pale cast of thought', say it all? The media environment says otherwise. Full of euphoria the mass media are picking up on the first steps in the implementation of hyperspace with neologisms such as information superhighway, teleworking, teleshopping and telebanking. The fascination of the mass media and the general public with this subject, I feel, cannot be explained by means of economic or political motives alone. I suspect that this fascination with electronic networks is driven by some historico-cultural force that, despite all modern science, is still fed by the Christian mythical awareness of the developed world in connection with a particular type of personality, the narcissistic personality. This driving force is taking on a more concrete form in an age in which human society on this planet is in an existential crisis and that is thus more susceptible to change [but also to polarization] than ever before. The self-release of the human being from actual and imagined dependencies is reaching a new level. Our survival is not only endangered by the success of traditional industrial mechanical, chemical and electrical technologies. Today man's identity is under debate in two concrete respects, on the one hand as a result of genetic engineering that tamper with the natural biological outfit of the human being and, on the other, due to the new information technologies that are beginning to call into question man's status and self-esteem as the only living being endowed with intelligence and the capacity for thought.

In view of these problems we will see wishes washed up to the surface of society and made practically viable, with all the illusions connected with them, wishes that to date were impossible to fulfil. A process of implementation of religious fantasies in day-to-day human life is being continued, a process that originated in the appearance of markets and money. The Last Judgement is becoming the present in the market, the good are rewarded, the bad punished. In money, the divine power descends to Earth and lives among us, a power that according to Feuerbach [first edition, quoted from 1957: 371] is a fantastic expression of the human being and, according to Marx and Engels [1845: quoted from 1971: 27], of Man the social being. So anyone can have a bit of divinity in his wallet, i.e. the potential of human activity that can be updated through work. Cyberspace and the electronic networks provide food for other notions of God's attributes — that of omniscience and omnipresence. With that — taking into account all the ambivalence of this comparison — the words of the serpent in the first book of Moses are fulfilled when it promises Man in paradise: "Ye shall be as gods" [Gen. 3:5]. Unfortunately, all of God's attributes have not come down to Earth yet. Wisdom, mercy and love have yet to come.

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