

Thoughts on Information and Communication Technology

by

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As parents, teachers, educators, in short as contemporaries, we are confronted daily with the achievements of technology. We are challenged continuously to find a relation with technology. In that arena information and communication technology holds a key position, I would like to try to bring some thoughts together with respect to this theme and develop some ideas about how to use this technology. Two pillars, which support a sensible usage, can be described thusly:

1. Technology can always be misused. We can try to understand the apparatus and thereby bring about consciousness of its functioning.
2. Through our own inner steadfastness we can evolve sensible use of technology: ethical, wise, safe.

To elaborate on what I mean by the first pillar, I would like to walk through the history and development of the different media. The first mass medium was the book. But only printing made it that. Prior to the printing press, books were the privilege of an elite group, because there were so few and only a few individuals could read. The importance of printing in transforming the book into the first mass media has often been underestimated.

A next milestone was the development of photography (1839). It was developed originally so that an image of a building could be preserved as a document for posterity. Photography can capture an object. A collection of accurate images can be made. With the medium of photography, one has the capacity to remove a particular detail from a field of vision and store it, first onto a (photographic) plate, later onto paper. A three-dimensional object can be recorded on a plane. A nice anecdote from Picasso can clarify this. A lady was annoyed by the way Picasso painted people and asked him: "Can't you paint a person as he appears to us?" Picasso looked at her with astonishment and asked her what she meant by that. The lady produced a photograph of her husband and

explained to Picasso that this was a proper image of him. After a short glance at the image, Picasso said: “I hadn’t thought that your husband was so flat.”

The telegraph opens the communications door a little further. In his book *Amusing Ourselves to Death*, Neil Postman wrote:

The strength of the telegraph was to transmit information, not in storing, explaining or analyzing it. In this sense the telegraph is the exact opposite of book printing. Books for example are excellent containers to store, for calm sifting and systematic analysis of information and ideas. Writing and reading a book takes time.

With the telegraph, the transport of news was no longer dependent on the speed a human could travel, but on that of electricity. However, the receiver did not get the original.

Printing, photography and telegraphy were all put to use by the newspaper medium. Increasingly news items from all over the world were in circulation and the presence of photos increased. The newspaper slowly changed from being a news medium to a medium of entertainment.

In 1876 the first telephone conversation took place—a conversation with a non-present person was held in real time. The voice of the non-present person was imitated. Edison also thought about how to store the human voice, and in 1877 he unveiled the phonograph. Initially purely mechanical, the machine played a piece of music in exactly the same rendering as the original and as often as we wanted to hear it. In the case of live music, however, the same piece sounds different every time because it is played slightly differently every time.

Again Edison led the way in the transition from photography to moving images. In his application for a patent (October 18, 1888), he wrote: “I am working on an instrument that does for the eye what the phonograph did for the ear, namely the recording and reproduction of moving objects, and that in a cheap, practical and simple manner.” The medium of film allowed for bringing various elements together. The first film to show a coherent story was *The Life of an American Fireman*. In this film documentary scenes of a burning house were brought together with scenes from a theatre performance, recorded at different times and different locations. The audience saw a coherent picture and did not notice that two completely distinct shootings had been combined.

A new era in information and communications was ushered in with the introduction of electronic media—radio, television and computer. Radio today does not play the same dominant role as it did when it was first introduced, when national radio was the news dispenser purely and simply. A colorful mix of information, radio dramas and music was the next development. Today most young people listen only to music and advertisements.

In its beginnings television approached moving pictures and sound quite differently than the cinema. Cinema meant films, and still does. Television began

as an electronic newspaper. On it one could see and hear up-to-date national and international news. Today television offers such a flood of information, which is often hard to digest, and entertainment of questionable veracity and value. In particular we need to make a big effort to establish a reality-link to the images.

According to Neil Postman the problem with television is not that it brings us entertaining topics, the problem is that every topic is presented as entertainment. The introduction of television brought about major concerns, discussions, and studies in many areas of society about both the content and the time spent in front of the television. One result has been an extensive body of literature demanding a more conscious use of this medium.

The invention of both audio- and videotape have allowed for listening and viewing habits to become more individualized and isolated. One can put his own program together according to personal wishes, needs, and schedule. And by using a video camera and video player, one can view his own pictures without even having to process film.

These media are all task-specific and specialized in their focus and function, i.e., there was not an instrument that could integrate or mix the technologies and provide all the information of seeing, hearing and speaking all in one. Until the computer. The computer is the first technology that attempts it all. Computer uses are not just determined by its construction but ever-expanding through programming, software. Human ingenuity has turned the computer to a multitude of services: writing, typesetting, drawing, painting, photography, film, research, composing music, scanning, printing, copying, data sorting, creating databanks, storing, calculating, learning, programming, driving appliances, listening to radio, watching television and video, CDs, iPODS, games, communicating—image telephoning, e-mail, chat rooms—online services such as shopping, banking, trading, advertising, house-hunting, pornography, and so forth, and “virtual” everything and anything. The list goes on and on. The broad range of its applications continues to grow and expand—ever-new opportunities targeting every age group. A special appeal lies in the virtual worlds, which can be created, explored, even believed. Everything seems possible. Here, the user is not in the traditional passive role like when using television, but one can contribute to the action on the screen.

This brief excursion into the world of media demonstrates that, over the course of its development, more and more senses have become addressed and involved. It is only a question of time until all our senses can be reached by cyberspace. With the introduction of electric and electronic media the arts have increasingly been included. It began with music, then drama, and now almost every artistic aspect can be imitated by the computer. It is now possible to reproduce art in many ways and with a fairly high degree of quality, raising

the questions about what is art more and more frequently and whether we can actually create a work of art on the computer.

How do we respond to the different technological achievements? What kind of interaction takes place? For every technology a special consciousness, a certain maturity is required. The devices of media described above present challenge to us. In its time book-printing brought about a far-reaching change—handwriting was replaced by print, a process which today we take for granted! It is characteristic of such processes that we get used to them. A talk on the phone and a face-to-face conversation are different. What is appropriate to discuss in a phone call and what kind of conversations deserve or need personal connection. Often it is not easy to get away from the television; programming literally draws us in or entices us to surf the channels. Most music-listening today is through speakers and all around us. The computer has found its place in daily chores and often determines the way they are carried out. A long list of observations from daily life could be included here.

We live in a high tech world. Individual differences, talents and strengths disappear through the application of technology. Strength of character is required. Are we still able to say no and decide freely which technology we apply, to which situation and at which time? School and home are faced with a challenge. The second pillar can be built and supported through their efforts. Three areas of importance need to be considered and developed: the senses, the ability to discern, and inner strength. All media address and use the senses, but in an incomplete way. There's always something missing. In a phone call the holistic perception of the speaker is missing; he/she is reduced to voice only. Television appeals both to vision and to hearing; one might assume the experience to be more complete; but the screen is flat, three dimensions are reduced to two, and the lower senses are not touched. For the human being, to establish a real “connectedness” with the world, with matter, is a fundamental skill. This skill helps us to build a healthy relationship with our physical body. An intensive training of the senses in the first and second years of life can provide security.

With forming a judgment, it is the same as with many things that require a certain maturity. If influences or demands come too early, we will not have the opportunity to find out how a higher level of maturity would have managed or what could have been accomplished. We can learn to discern things and ask ourselves whether it makes a difference to listen to a live concert or to music from a loudspeaker. Does it matter whether I type a letter on the computer or write it by hand? What kind of relationship do I have to the images and sounds transmitted by television, to the feelings these images evoke, to the knowledge or disinformation they bring?

A huge task lies ahead if we are not to be taken over by technology. A gesture of distancing oneself is always necessary and subsequently a finding of

what is appropriate in each situation. As we cannot know everything, we rely on authorities. The skill we need to acquire then is the ability to discern truth. We can learn to discriminate who is a good judge and who is not. The central issue is how to nurture the faculty of judgment. Inner steadfastness is another key issue. I observe in myself and others how these media devices have a tendency to possess us, to “suck us in.” I lose track of time in front of the computer, lose the will to move away from the television because I want to see what’s next, and I feel the security of being always available by cell phone. The use of media technology requires inner discipline from me, a self-affirmation in the truest sense of the word. In short, I must school myself to be able to say no. I am called to take responsibility for my actions. This requires a training of the will. Here the toddlers can teach us a lot. The world of adults and adolescents is suffering from something that these young human beings do not know at all: laziness. Toddlers are persistent and ready to master all kind of obstacles. In contrast to this our culture tends to remove all obstacles for our young people! Experience shows however that the stones we remove from their path they tend to throw at us later. Our task is not to remove the stones but to help the young people to find ways to deal with them.

In the presence of modern technology there lies a wakeup call of a special kind. Pure thinking is not enough. There must be will activity. For example, the function of a car and all its parts I can learn at the desk, but I still cannot drive it until I do it. Thought-filled intellectual understanding needs to be complemented by thought-filled application, because without application the device remains only an idea. Today the opposite is the case. We apply technology, which we do not understand, totally caught up in the action. Neither experience alone nor idea alone will lead us to a responsible way of dealing with technology. The healthy insight comes from the meeting of those two poles. In this sense modern technology is a challenge that we have to tackle consciously. We are risking a lot, but by taking hold of ourselves, we stand to gain a lot.

Florian Oswald teaches mathematics and physics among other subjects. He is a member of the Hague Circle which organizes the International Conference which takes place at Dornach, Switzerland, every four years. He has made warm connections with the anthroposophical work in the southern hemisphere over some years.