When Media Permeates the Body

UTADA Akihiro

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How easy things must have been when people were able to rely solely on direct communication between each other. No, that is not true, even direct communication was not that simple, it resulted in any number of misunderstandings, but now people are becoming separated by media and a virtual world is growing, all serving to make things more confusing.

A "Wearable Computer" symposium and fashion show was held in Tokyo in October 1998 and among the clothes in the fashion show there were some which expressed the emotions of the wearer as they were being experienced. There were others that displayed a profile of the wearer's interests to people they passed in the street. It is very easy to find people who share the same interests as oneself through the Internet or other computer networks, and these clothes were an attempt to create a "street version" of this. They suggested the possibility of a future when "friends" are easy to find and "loneliness in crowds" is a thing of the past.

This may sound great fun, but do we really want to live in a world like that? Letting people know our interests is all well and good (at least those that we are not ashamed to talk about), but when it comes to emotions, we may wish to reconsider. Despite this, however, the clothes offered a glimpse of the complexity of a world where people are separated from each other through media and in this respect, it was very interesting.

Last year's ICC NewSchool on the subject of "Senses and Communication" was held over a period of four days and considered communication and the state of the body in an increasingly complex age. People are separated from each other by various forms of media and this media is changing rapidly. From the television or radio to computers, up until now all forms of media existed separately from the human body, we turn on the switch to view them, we are in control and this provides us with a certain peace of mind. However,

HATTORI Katsura ＋SASAKI Masato

the situation is gradually beginning to change and it is expected that computers and other media will become more natural to use, which is to say, more transparent. To take the example of wearable computers, they become something that we wear, indistinguishable for ordinary clothes and although we will not be able to see them, they will be there and their abilities amplified. Whether we like it or not, we will be forced to communicate through a medium that differs from the bodily senses we were born with. Our very bodies will be permeated by the media to a degree in excess of anything we know today.

So, what will this mean to us?

This is the kind of question that NewSchool made us consider directly, through the participation workshop that took place on the third day. It began in the most surprising way, with those taking part being asked to enter the room dancing. The participants were asked to use the paper and scissors that lay scattered on the floor to make a paper hat and write briefly what they thought about communication on the hat. They were then told to write something on the large sheet of paper that was spread over the floor and talk to the people around them. The people were divided into groups according to the color of their hats, then asked to use the objects in the room to think up a game and play the game with the group next to them. Finally, everyone went onto the stage in the middle of the room and took part in the game.

Afterwards, we looked at the messages written on the paper on the floor and saw that they expressed the bewilderment experienced by the people; "This isn't kindergarten you know?", "What's going on?" "How are we supposed to communicate?" However, UEDA Nobuyuki of the Konan Women's University and the other instructors had been very clever in the way they structured the workshop. From the initial creation of the paper hats, they had provided the participants with definite themes, then gone on to divide them into

larger and larger groups and by the end of the day, an atmosphere of harmony pervaded. Looking at the questionnaire that everybody was asked to fill out before they left, it could be seen that a majority of the people went home quite satisfied. However, they were merely told to think over the day's events without being provided with any explanation, and some of them probably mistook the exercise for some form of psychotherapy.

The act of communication through a medium is the same whether the medium be a hat or a computer, the problem is how one expresses oneself. However, the communication itself is altered through the very existence of the hat upon which you have written your idea. This remains true whether it is a wearable computer that expresses thoughts or emotions, or a paper hat upon which you have written your ideas. Whether hi- or low-tech, the utilization of a medium can either facilitate or hinder communication. It was an attempt to predict the advanced media of the communication age, as symbolized by the computer, through the use of the very low-tech medium of paper hats.

The second workshop took the form of a concert. At first it appeared to be a normal jazz concert, however, the sound was provided by a computer which also possessed data on a variety of venues that it utilized to create virtual locations in real-time. YAMAZAKI Yoshio, a researcher of virtual reality of sound at Waseda University took the opportunity to accurately recreate the music as it would sound at numerous places from the *Opéra de la Bastille* in Paris or Tokyo Railway Station to the Amagi Tunnel in Izu or a limestone cave in Kochi prefecture. During the second half of the day, TOHKURA Yoh'ichi of the NTT Basic Research Laboratories, gave a talk on the nature of sound.

Compared to sight, where the viewer remains separate from the viewed, sound does not

Left——ENDO Ritsuko
Right——YAMAZAKI Yoshio＋TOHKURA Yoh'ichi

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discriminate between the subject and the place in which the media is placed. Sound bears down on the body whether we like it or not and hearing provides an example of what it means for the body to be permeated by a medium more easily than the other senses.

The lecturer for the fourth workshop was IFUKUBE Tohru of Hokkaido University who began his research with the study of auditory perception before moving on to use advanced technology to create support systems for the handicapped. He has developed a "voice typewriter" that converts sound to graphs or letters, allowing it to be understood with the eye as well as a "finger-hearing machine" that allows people to hear through their fingertips. Presently he is working on the development of an artificial internal ear that will be embedded in the ear and convert sound into electronic stimuli that can be transferred directly to the nerves. As part of his research, Mr. IFUKUBE has looked into ways of substituting one damaged sense, such as sight, hearing or touch, with another. The voice of a mynah bird has quite a different wave pattern to that of a human, but its intonation is similar thereby making it sound as though it is speaking the same words. This theory was utilized to develop an artificial larynx (electrolarynx) and the way bats emit high-pitched noises (ultrasonic waves) and use the echoes to sense their surroundings, provided the hint that led to the development of ultrasonic glasses. In addition, the way that blind people can use variations in sound to perceive obstacles is being used to develop an artificial sense of the surroundings in virtual reality and from these it can be seen how far we have come in the development of artificial bodily senses. The wearable computer is merely a medium that has been incorporated into clothes, but before long we can expect media that will become a part of our bodies. This is not science fiction, the permeation of our bodies by various media continues to progress.

What do we mean by perception? The first workshop invited the leading researcher in affordance, SASAKI Masato of the University of Tokyo, who presented what could be called the "basic theory of perception," and explained that perception is not a reality that exists within human beings, rather it is created in actions and responses to the outside environment. Mr. SASAKI was followed by the journalist, HATTORI Katsura, who presented the latest studies into artificial life and robotics which demonstrate that computer programs that respond to surrounding movements and act as if they have life, or artificial life, while robots which are programmed to respond to their circumstances display creature-like movement more accurately than ones which are pre-programmed to execute fixed movements, thereby giving a concrete, direct example of affordance theory adoption in the world of artificial life. Research into perception and the latest studies on the digital world bear an almost eerie resemblance to each other.

Not only are the media and physical senses permeating each other, the digital world is becoming increasingly similar to life itself. What kind of world will it become? We do not have much time to consider this question, technology is progressing at such a pace that it is already becoming a reality.

UTADA Akihiro
Born Tokyo 1958. Formerly Editor-in-chief of *Eureka* magazine. Presently works as freelance editor and writer. He has published several books including *Kaso Hodo* [*Virtual News Coverage*] (Aspect, Inc./ASCII Corporation), and *Maruchimedia no Kyojin* [*Multimedia Giant*] (Just System).

L e f t——H i l l e l WEINTRAUB+UEDA Nobuyuki+OMORI Miya Right——IRIE Kei'ichi+ IFUKUBE Tohru