

Imagination of Collectiveness Improves Our Well-being

Junji Watanabe

*Senior Distinguished Researcher, NTT
Communication Science Laboratories;
NTT Service Evolution Laboratories
(Concurrent)*



Overview

The rapid advancement in digital technology, such as artificial intelligence and virtual reality, is changing the way society works, including the way we work. In Japan, a “super-aging” society, it is said that the population will decline to about 110 million in 2040, and the population over the age of 65 will reach about 30% of the total; in other words, an unprecedented population structure is expected. In such a situation, how will technology affect our lives? We asked Junji Watanabe, a senior distinguished researcher at NTT Communication Science Laboratories, who conducts research on tactile information technology and nonverbal communication, about our well-being and his initiatives to improve it.

Keywords: well-being, sports social view, workshop

Seeking “something” created by collectiveness goes beyond information transmission

—Could you tell us about your current research?

I’m mainly engaged in research and development on tactile sensation and communication, but I’m also involved in workshop-based initiatives on human well-being. Recently, I’ve become interested in how embodied communication works to improve people’s well-being. Much research on sensation is centered on sensory communication, namely, transmitting information from A to B. However, I’m interested in *collective physicality*, which infers that *something* is created between the physical interaction of people and goes beyond information transmission.

Regarding sports broadcasts, for example, the place where spectators gather to watch an event, such as a stadium or public-viewing venue, interests me. Research on “*Ba*” (places where people gather) is extensive; however, I wanted to take another look at it in the context of watching sports. In other words, I wanted to learn what we can do when we think of sports as a way of connecting people. I wanted to reconsider “being with others” from emotional experiences such as the uplifting feeling we get when we witness a great performance together, a sense of unity when people’s excitement coincide, and the feeling that it was nice to watch sports with someone.

One example of my research on watching sports is the project called *Sports Social View*, jointly conducted by Akiko Hayashi, a senior researcher at NTT

Service Evolution Laboratories, and Asa Ito, an associate professor from the Tokyo Institute of Technology [1]. This project aims to extract the essence of a sports event, transform it into a different physical experience, and share it with the visually impaired. In judo for example, two normally sighted people, acting as judo players, pull against each other while holding both ends of a piece of cloth mimicking the pulling on each player's judo uniforms, while the visually impaired person grasps the center of the cloth. By doing so, the visually impaired person can sense the strategy of how judo players use their strength during a Judo bout. The interesting aspect of this project is that spectators (two sighted people and visually impaired) do not need to be completely passive; they can play an active part as well. That is, each sighted person has to move along with the movement of the judo players, while the visually impaired person follows the pulling action with his/her hands so as not to let go of the cloth. It might be more apt to say that the sighted and visually impaired individuals are either recreating the judo bout or creating a new bout. In this project, this experience is called *generative viewing*.

For my current research, I began to think about collectiveness in a place to eat. Eating meals with someone is a collaborative physical activity we experience every day. For example, if you go out to eat the Japanese dish *sukiyaki*, you'll see not only the people who eat the food on one side but also see, on the other side, the *griller* grilling the meat with the skill of a crafts-person and serving it with perfect timing. The griller not only provides meals but also interacts with customers to create a pleasant dining experience. The general flow of a sporting event and the contents of a meal are fixed. Even so, we should not watch such an event by just passively listening to audio or eat by just waiting for the meal to be served; instead, I believe it is important for us to proactively engage in these activities and create a place that leads to autonomous satisfaction in the company of others.

It is possible to expand this concept to research in information and communication technology (ICT). By connecting people in distant locations via telecommunications, watching sports together remotely, and creating a system that allows us to recognize that someone is eating a meal or even to feel the sensation what another person feels when eating a meal, we can create a new form of "Ba." Naturally, this form will also include being with someone in cyberspace in which people, things, and events are digitized.



Fig. 1. Book cover of "Information Umwelt" [2].

—What is the meaning of working with people in research?

In April 2019, we published a book titled "Information Umwelt" (Fig. 1), which summarizes the results of earnest discussions on the theme *information umwelt* [2] among 17 experts from various fields, including researchers, artists, and designers, and the related workshops held over five months. Five people who attended a public talk at NTT Intercommunication Center (ICC) [3] in Shinjuku, Tokyo, became core members, and each member invited others with whom they thought would be interesting to carry out the research together. These core members participated in a total of ten meetings held over five months.

Various workshops were held over that period. In these workshops, participants recognized the differences in each other. The flow of a workshop is as follows. Each participant puts a piece of paper that describes three factors that constitute their well-being into a box. Each participant comes on stage, draws a piece of paper from the box, and talks about the three factors according to what is written on that paper as if he or she were the person who wrote it. In this way, the speakers verbally express unexpected sense of values, and those who heard their factors spoken about by others will have a different interpretation. The above-mentioned discussions, including these

workshops, were compiled as a single book. The term *Umwelt* is a German term that refers to the unique world of perception and movement experienced by a living organism. Taking ticks as an example, we know that they have little visual or auditory sense and live by choosing what is important to them using their sense of smell and temperature. That which can be created by the link between perception and movement is the tick's *Umwelt*. People too live in their own different worlds, but because those worlds are different, I think we can create something new between them.

Sense of balance between being subjective and objective

—You seem to be researching with a focus on the human mind and the individual.

In research on science and technology, experiments are conducted, papers presenting the results of those experiments are written, and the applications of the results are easy to understand. On the contrary, many of my current activities may be difficult to understand from the outside. Therefore, in addition to making sense of the results from social standards and external norms, it is necessary to express them from a perspective of internal norms while maintaining as much objectivity as possible; convincing people of research value while becoming a research communicator. I think it is important to incorporate these internal and external norms in a balanced manner.

A similar balance exists regarding research on well-being. It is important to balance subjective satisfaction (internal) with data or rating (external). We must first consider what well-being is. It may be easy to understand if you look at the “Workshop Manual for a Life of Well-being” [4], which was compiled as part of a project that I am involved in called “Development and Dissemination of Information Technology Guidelines for Promoting Japanese-style Well-being” in the research area called Human-Information Technology Ecosystem (HITE) initiated by the Research Institute of Science and Technology for Society (RISTEX) of the Japan Science and Technology Agency (JST). The aim of this project is designing well-being by focusing on not only subjective well-being—in an individualistic Western manner—but also the value system unique to Japan and how to incorporate ICT in this design. We have also been exploring how ICT can be used in addressing well-being issues unique to Japan.

The manual contains the results of a question asked to 1300 college students, “What are the three main factors that determine your well-being?” The factors that contribute to our sense of well-being can be divided into three main categories, *I* for individuals, *we/society* for relationships with others, and *universe* that goes beyond the other two types of factors. *I* factors include, for example, the autonomy that makes us feel able to make decisions and act and the sense of competence related to our ability. *We/society* factors include consideration and appreciation as well as good relationships within organizations and companies. *Universe* factors include the way the world looks from an overall perspective beyond our specific relationships, sense of peace and meaning of life, and social responsibility. I divided the factors given by the 1300 students into these three categories. While the students who gave all three factors as *I*, accounted for 37% of the respondents, most of the rest gave more than one factor as *we/society*. These results indicate that relationships with other people is important in the well-being of Japanese students.

—If your relationships with others lead to well-being, how you interact with people seems to be important.

The workshop manual also describes a workshop that considers well-being in our daily lives and aims to solve problems based on a sense of well-being (Fig. 2). It contains various scenarios from friction at home to product development. In this workshop, participants first try to loosen tensions between people in places and, as an icebreaker, take part in a task called “heartbeat picnic”—in which a device vibrates in sync with the heartbeat, and participants feel their own and other's heartbeats through their hands. This task is aimed at stopping the making of “good” or “bad” judgments and to focus on what is happening on the spot through physical sensations. After that, the participants work on a *partiality map/pain map* to verbalize one's likes and dislikes. At the same time, the participants listen to others speaking of their likes and dislikes and immediately recognize the diversity among them. What the participants are feeling is then abstracted as the three above-mentioned categories.

Then, problems dealt with in the workshop will be tackled in accordance with the factors that have been conceptualized. During the “vision boot camp” task, feedback is repeatedly received and given many times in a short time to determine the direction of an idea to solve problems in terms of well-being. Then in a four-frame storyboard, participants witness the creation of

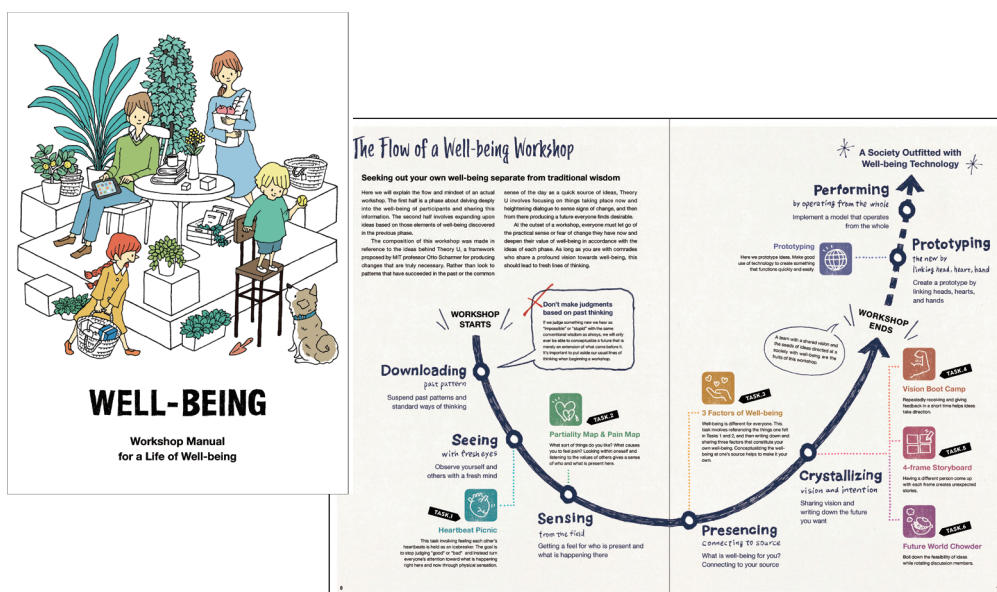


Fig. 2. Flow of well-being map workshop [4].

an unexpected story by four people drawing each panel. In “future world chowder,” participants discuss the feasibility of ideas from various perspectives through discussions in which members are changing.

The steps in this series of workshops aim at focusing on well-being, sharing the story of each participant’s well-being as discussion materials on the spot, and solving problems. This is very different from an approach that focuses on a problem and trying to solve it efficiently. We are planning to experimentally implement such well-being workshops not only in Japan but also in countries with different cultures and values and develop a community base (living lab) for social design centered on well-being.

How to be collective and generative in research activity?

—Where did these ideas come from?

Rather than having a strong and clear will, an inner voice may say, I feel as if “You *might* want to do this.” Even if you didn’t intend to do it at first, you may notice that it matters to you as you continue your work. For example, I did not intend to be involved in research on eating, but the opportunity arose in which I had no choice. When I started getting involved in such research, I came to realize that it was deeply related to tactile sensation and well-being. In my

case, I don’t start research with an explicit goal; instead, if I feel *something* about a particular research topic, I will start it. Then, I think back about what was the *something* I had felt.

—Please give a few words to younger researchers.

Above all, make sure you have good peers. I can say that the book “Information Umwelt” was published because I could work with the four co-authors and enjoyed it. You need to find peers with whom you can tackle large challenges. In addition, your research field doesn’t need to be close to your peers’ research fields. I also think it is necessary for your peers to be able to explain your work. It takes time to properly convey research to outsiders. Even if you can’t explain well what you do, letting people know that what you do is significant will open up other possibilities. If you have difficulty speaking, it’s a good idea to create printed material.

Lastly, I think it is important to conduct research and work without being passive and feeling you are forced to do something. If you look at yourself and others from the perspective of controlling someone versus being controlled by someone (like being made to do something) or investing in someone versus getting a return from someone (like doing something but getting no reward), that *something* (new value created by collectiveness) will not be born between you and

others. Although research is based on the abilities of individuals, *something* new is created in collaboration with other researchers, peers from different fields, and society. This mindset is necessary for pursuing your research.

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■ Interviewee profile

Junji Watanabe

Senior Distinguished Researcher, Human Information Science Laboratory, NTT Communication Science Laboratories; NTT Service Evolution Laboratories.

He received a Ph.D. in information science and technology from the University of Tokyo in 2005. His academic work has been published in scientific journals in the field of neuroscience and interface technologies. He has also presented his work at technology showcases, science museums, and art festivals such as at SIGGRAPH (2006–2009, 2014) and Ars Electronica (2002, 2004, 2007–2017, 2019). His research is focused on cognitive science and communication devices with applied perception.