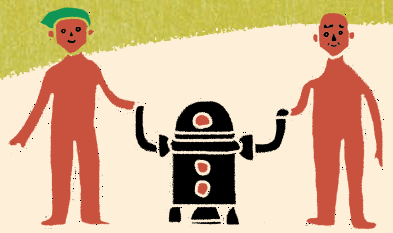
The Present and Future, insights from 15 Experts in the Humanities and Social Sciences

The Present and Future Spoken by 15 Experts in Humanities and Social Sciences.
The Path to Japan, 2050.
Asking About that Process.

Looking at the Processes Towards Japan in 2050

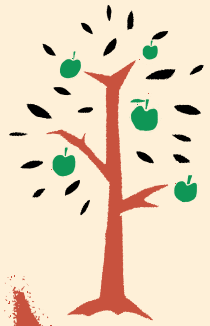
国立研究開発法人
科学技術振興機構
Japan Science and Technology Agency

Introduction



Our future is becoming increasingly uncertain due to the various issues surrounding us, such as global population growth, the increasing severity of natural disasters, social changes caused by advances in science and technology, such as AI and the expansion of virtual spaces. And now, we are also confronted with infectious diseases and a variety of issues are becoming apparent.

Against this background, the "Survey on Social Problems Under the COVID-19 pandemic" (also we call the "Big Picture Survey") was conducted by the Research Institute of Science and Technology for Society (RISTEX) of JST in FY2020. In order to find clues to solve the problems identified in the Big Picture Survey and to find a process to clarify the vision we should aim for in the year 2050, a difficult time when the world's population peaks, We the Department for Promotion of Science in Society provided this report.



It is a practice of the "convergence of knowledge", "So Go Chi" indicated in Japan's 6th Science, Technology, and Innovation Basic Plan (hereinafter referred to as the "6th Basic Plan") which began in April 2021. "So Go Chi" is a concept of integrating knowledge from both the natural sciences and the humanities and social sciences which aims to contribute to a comprehensive understanding of humans and solve the problems of society.

In particular, the humanities and social sciences were newly added to the list of needed areas for promoting science and technology at the start of the 6th Basic Plan. Therefore, in this report, we interviewed 15 experts with backgrounds in the humanities and social sciences who are familiar with the 17 social issues raised in the Big Picture Survey and compiled their suggestions for the future we want.

The 17 social issues listed in the Big Picture Survey

Economy and Labor
- Impact of Changes in the International Situation
- Deteriorating Economic Conditions
- Deteriorating Employment Situation
- Difficulties at Work

Environment and Infrastructure
- Vulnerabilities in Digital Environments becoming Apparent
- Concerns about Regional Development
- Backtracking on SDGs and Environmental Initiatives
- Urban Transportation Problems
- Food Insecurity

People and Livelihoods
- Mental Stress and Stagnating Human relationships
- Ethical Concerns
- Increasing Educational Disparities and Mental Stress
- Changes in Marriage, Childbirth, and Cultural Activities

Government and Politics
- Pressure on the Medical System
- Widening Budget Deficits due to Huge Fiscal Stimulus
- Social Support Measures Not Always Effectively Utilized
- Growing Need for Governmental Digitalization

Index

This report is organized into Chapters 1 to 3. Chapter 1 contains a summary of the interview analysis results, Chapter 2 contains the interview articles, and Chapter 3 contains detailed material on the analysis results.

Analysis Method

The M-GTA (Modified Grounded Theory Approach), a qualitative research method, was used to analyze interviews that were conducted with 15 experts in the humanities and social sciences. Through the five steps of 1) Interview, 2) Transcription, 3) Worksheet Creation, 4) Extracting Points, and 5) Categorizing, we worked to extract commonalities from these experts with different fields and backgrounds.

About M-GTA

"GTA" is a qualitative research method that extracts concepts from data and then relates them to each other to generate new theories. In addition to clarifying the data analysis process, M-GTA, a modified version of GTA, has been enhanced to include a thorough awareness of social practices, such as by asking "Who did XXXXX," "What was XXXXX done for," and "How will XXXXX be put into practice?"

step 1

Narrow 100 candidates down to 15 individuals, then interview them

Based on the 17 social issues listed in the Big Picture Survey, a list of 100 experts in the humanities and social sciences was compiled. The list was then narrowed down to 15 individuals, keeping in mind the diversity of the individuals' backgrounds and fields of expertise.

step 2

Transcribe the 30 hours of audio data

step 3

Extract 400 important remarks and create a worksheet

step 4

Find commonalities from amongst the 400 remarks and extract 56 main points

step 5

Organize the 56 points and generate 16 categories

*For convenience in this report, the terms used in the M-GTA method are substituted as shown: Concept → Point; Variation → Remark Content

Chapter 1

Summary

In this chapter, the points that emerged from the interviews are shown into the four perspectives of "Modern Society is Full of Challenges," "A Vision for Our Desired Future in 2050," "Environment and Activities Necessary to Cultivate Convergence of Knowledge," and "Elements for Creating Our Desired Future."

Culture and Self-Governance being Lost

Harmful influences from current capitalism and social systems have caused a loss of respect for humanity and nature

Things that were once resources have lost their social significance

A growing "leave-it-to-democracy" attitude due to indifference to politics

Industrial and Social Systems at a Standstill

Closed, siloed structures are a mismatch with the times

Issues with both hardware and cyberspace are becoming more pronounced

Lack of human resources for the next generation due to stagnant vocational education and doctoral training systems

Modern Society is Full of Challenges

Japanese society has changed at a dizzying pace, with both the bursting of the bubble economy after a period of rapid economic growth and the birth of the internet giving rise to an information society.

Furthermore, issues such as global warming, economic stagnation, low birthrates and an aging population, the decline of rural areas, and epidemics of infectious diseases pose numerous challenges to our society.

Unconscious discrimination

Social structures are not receptive to diverse backgrounds and values

Lack of a mechanism to pick out the voices and places of affected individuals

Lack of Mental and Physical Health due to Fragmented Relationships

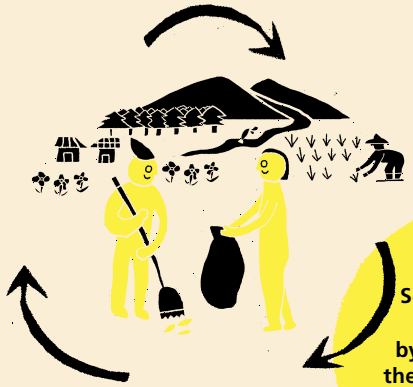
Social divisions are emerging due to differences in the utilization of new technologies and services

Human-centered science and technology alone is no longer sufficient for addressing social issues

Regional disparities in the penetration of cutting-edge technologies are widening

Science and Technology becoming Increasingly Complex

Culture and Self-Governance that are Protected and Nurtured



The future is discussed based on a region's soil and climate

World-leading styles are created

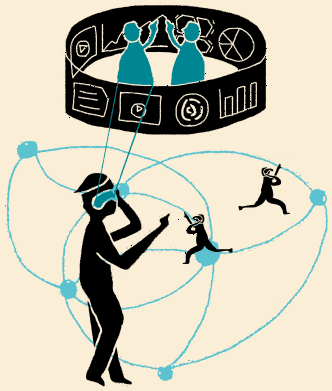
Self-governance is conducted by making use of the knowledge and skills people have cultivated

A Vision for Our Desired Future in 2050

Approximately 30 years from now, in the year 2050, the global population will have reached about 10 billion people, and it is predicted that we will be entering a difficult era, with concerns about food and resource shortages, as well as an aging population.

What kind of future should we envision and live in? From the words of experts, we have developed a vision of our desired future for 2050.

Vibrant Industries and Social Systems

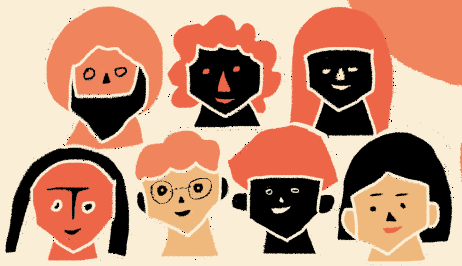


Policies are formulated based on each region's critical issues

Realization of multi-polar urban designs

Powerful innovation is facilitated by dynamic regional mobility of highly skilled human resources

A Life that Realizes Diversity and Well-Being

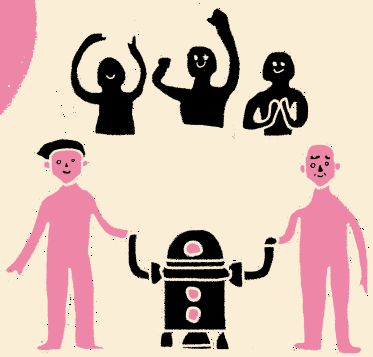


Social systems are in place to prevent minorities from being disadvantaged

There is space for everyone to feel comfortable and to actively communicate

Social structure realizes diversity functions and well-being

Optimized, Democratized Science and Technology



Technologies are democratized and operated on a regional basis

The body, augmented by technology, is fused with people's uniqueness

Benefits can be enjoyed under any circumstances True universal design is pervasive

Environment and Activities Necessary to Cultivate Convergence of Knowledge

"Convergence of knowledge" is a concept that refers to the fusion of knowledge from both the natural sciences and from the humanities and social sciences, and it aims to contribute to comprehensively understanding and solving the problems of people and society. To promote the cultivation of such convergence of knowledge, we have extracted the necessary environment and activities as key ideas.

Knowledge and Characteristics of the Humanities and Social Sciences

1. Nurture the past to create the future
2. Guide the relationship between society and technology from 'I' to 'We,' and evaluate the post-implementation world
3. Have a sensitivity to things that stir the heart and to unknown possibilities
4. Have a critical intellect, moral fiber, and a perspective that questions the obvious

Appropriate understanding and use of the diversity of specialized knowledge

Balance between qualitative and quantitative research

Direct/indirect knowledge, and problem-solving/value-creating activities

Understanding the diversity of academic disciplines

Presenting thoughts, values, and philosophies that serve as starting points for our desired future

Building teams with open relationships and trust

Relationships where people can take on challenges together while enjoying dialogue

Platforms and human resources to connect different fields

Build trust over time in psychologically safe situations

Concrete discussions led by shared social issues and goals

Academia that emphasizes interaction with society

Evaluation processes that incorporate diversity and dialogue among the evaluators

Respect for both vision-driven and interest-driven research

Constructive engagement with politics and government

Participation in the field with entities that take on the challenge of social implementation and problem solving

Elements to Create Our Desired Future in 2050

From a modern society full of challenges, to our desired future in 2050. In order for values and societal form to continue to evolve while undergoing a repeated process of regression and evolution, we have gathered together "elements to create our desired future," as discussed by experts.

Starting point theme

- Discuss familiar issues that everyone can relate to
- Discuss "the future that is sure to come" as a starting point
- Update our perceptions and society while continuously questioning the changing essence of human beings
- Reconceptualize individual problems as problems for society as a whole

Appropriate understanding and use of the diversity of specialized knowledge

Building teams with open relationships and trust

Key subjects

- Discuss with young people who will play a leading role in the future, and share this with society
- Build a new mass media with a highly specialized and long-term perspective
- Politics and government have a bird's eye view of society as a whole, and exist to adjust society's balance
- Create new value through 'editing of knowledge in society' that edits knowledge

Academia that emphasizes interaction with society

How to sketch out our desired future

- Sketching out a vision-first future
- Focuses on "Here, Together, Safely"
- Design that advances forward while moving back and forth between the past and future
- Explores social needs by picking out the hidden voices of those in and involved with an area

Knowledge and Characteristics of the Humanities and Social Sciences

A place to create the future

- Value opportunities for diverse parties to openly discuss their weaknesses and difficulties in life
- Design a place where people can think about ideas from the bottom up, starting with the world around them
- Communicate both virtually and in real life
- Engage the senses to unleash creativity

Our Desired Future in 2050

Modern Society is Full of Challenges

Environment and Activities Necessary to Cultivate Convergence of Knowledge

Chapter 2

Interview

This chapter takes the recommendations of each of the 15 experts and compiles them as interview articles. Supported by each expert's experience and knowledge, the four perspectives and points of view in Chapter 1 are unpacked and examined.

List of Experts (in alphabetical order according to the Japanese alphabet)

Yuki Asakura
Associate Professor,
Komatsu University

mai ishihara
Associate Professor,
Hokkaido University

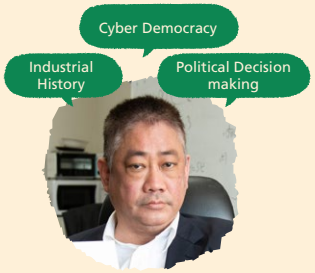
Yohei Ueda
Lecturer,
University of Shiga Prefecture

Sacko Oussouby
General Research Organization
Director (former President),
Kyoto Seika University

Tatsuhiro Kamisato
Professor,
Chiba University Graduate School

Nahoko Kusaka
Professor,
Doshisha Women's University

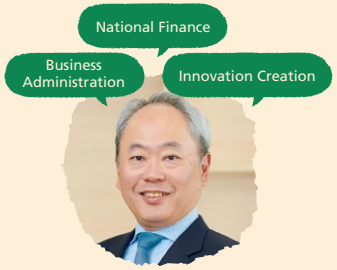
Kei Kudo
Chairperson,
NPO-SODATEAGE-NET



Takeshi Sakade
Associate Professor,
Kyoto University

Takayuki Shiose
Associate Professor,
Kyoto University

Kazuya Sugitani
Lecturer,
Iwate Prefectural University

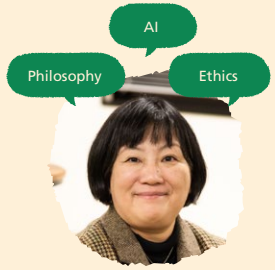


Kazuhiko Toyama
Chairman,
Industrial Growth Platform, Inc. Group

Kaori Hayashi
Executive Vice President and Professor,
The University of Tokyo

Tatsushi Fujihara
Associate Professor,
Kyoto University

Misa Matsuda
Professor,
Chuo University



Yuko Murakami
Professor,
Rikkyo University

no. 01

Yuki Asakura

Associate Professor, Faculty of Intercultural Communication Department of Intercultural Communication, Komatsu University

Restore the unity of culture, art, and science toward a society that mutually recognizes diverse values.

Yuki Asakura is pursuing significance of and ideal way to utilize the diverse values of culture and art to create affluent communities and societies. When asked about the current state of Japan's arts and cultural policies and their relationship with science as we move towards 2050, she pointed out the importance of placing "human happiness" as a starting point.

Our current situation, where art is evaluated via its usefulness, is undermining diversity

These days, science requires unconventional perspectives and ways of thinking, and I feel that recently it has begun to seek out "art" and "sensitivity," but, unfortunately, I think that the current situation in the arts has resulted in a loss of art's richness and confidence. Behind this is a sense of crisis in which art cannot survive unless someone says "It is useful in some way." On the other hand, I am also concerned about over-emphasizing usefulness.

Of course, to promote this as a policy, it is important to objectively demonstrate the benefits and usefulness of art. I believe it is necessary to measure psychological effects and social impact by incorporating methods from other fields, and to demonstrate value in a multilayered manner. But what will happen to art if we give priority only to effects that are easy to numerically demonstrate in evaluations?

Essentially, the power that art possesses is not a matter of logic. When we come into contact with art, we are shocked, our way of thinking is shaken, our sense of values changes, and we are inspired to live positively. Art is an entity that accompanies people in how people live.

However, it is difficult to prove this with objective indicators. The more that someone tries to explain it, the more we only recognize value that can be numerically measured. That results in a loss of diversity.

Particularly since the 2010s, there has been a rise in the idea of the supremacy of economic value, and, although I believe that the broader significance of the arts to society and to the economy is being recognized, I am concerned that it has become solely "money talk."

Rather than narrowly indicating the value of the arts based solely on quantifiable indicators, I would like to create a consensus that culture and the arts are absolutely necessary to society's foundations.

Citizens are the bearers of art and should be creative.

When I actually get involved in policies and projects, I often am not sure if all activities can really be considered art. However, I believe the question"Is this art?" is important for generating discussions.

In Germany, for example, the arts are seen as the foundation of a healthy democratic society. The fact that there are different values in society necessitates dialogue, and the arts and public facilities serve as a platform to encourage such dialogue. In Japan, without such an understanding, we have fallen into a short-sighted discussion of "whether or not art is useful." However, we must share a common understanding that the real meaning of "usefulness" is much broader.

Although I do not hold foreign countries in absolute esteem, my team's research on the cultural policies of other countries has continually made me consider the differences in the principles underlying the policies. I also feel that it is necessary to create opportunities for dialogue with citizens so that these discussions are not confined only to researchers.

Currently, the relationship between the research community and the general public has become very disconnected in many fields. I believe that the themes set by researchers are major social issues in their fields, but they are often not generally seen as social issues. In particular, many people may feel that the cultural and artistic fields are a closed world that has nothing to do with their own lives. This bothers me a lot.

Therefore, in many cases, such as local art projects, we consciously break down the barriers between the general public and art, and work with a strong awareness that "citizens are the bearers of art."

What is needed, then, is to broaden the view of art to a more diverse range. We need to ask, "Was this something that only a few special people did?" Ordinary people can also demonstrate their creativity and become bearers of art. There are also movements to have ordinary people collaborate with artists and become creators. I believe that one effective direction is to break down the barriers between specialists and non-specialists, and to enhance the creativity of all people.

The definition of art is also expanding rapidly, and efforts to put a new perspective on culture that is rooted in daily life, festivals, etc. are now considered art. Even if the local people

don't consider it to be so, creating a place where everyone can gather by themselves can be called an art activity. Art has the power to mediate relationships between people.

A "Mishumashu (to mix up) Sessions" are dialogues about culture and art (courtesy of Yuki Asakura)

Reconsidering the purpose of research in terms of well-being

In looking at the fusion of science & technology policies and cultural policies in the future, I think that, originally, science, technology, and art were one and the same.

For example, mathematics is actually very close to art, and I think that numerical values and beauty are contained in the same idea, and that many beautiful things in nature are also very numerical. There are also many people who are both artists and scientists.

However, in our current situation, what was originally a single entity has been subdivided into many different specialties and research has become siloed. As a result, this has given rise to the detrimental effect of not being able to see the big picture. If this situation continues, then our perspective will not expand because the various fields only have simple links between them. As such, I think that it is necessary to turn our attention to the root of the problem.

Specifically, as disciplines have become more specialized, they have also become more distant from people's existence, and I believe that we need to capture the purpose of research fields within a framework, such as "wellbeing," regardless of the field.

If we aim to create a society where people can live psychologically and physically healthy lives, then we should not be able to subdivide the issue into parts. If we take people as the starting point and value the idea that there are things that must be comprehensively addressed in order for people to live happily, then we may be able to create deeper connections.

It is also important to take a multidisciplinary approach to addressing the diverse issues that exist in a region. However, case studies and social implementation in individual regions are not always well evaluated because they are difficult to generalize. I would like to see support and understanding for research that plays a role in social implementation in local communities.

We need people to connect science and cultural policies

Compared to cultural policy, science & technology polices have received a much more prominent placement in Japan. Cultural policy has been placed at a lower level in terms of policy, giving the impression that it will be done "if there are extra resources." However, researchers and people involved in cultural policies have long argued that they are, in fact, important policies that support the foundations of society.

I hope that cultural policy in the future will not merely be an entity that follows behind science and technology policy, but rather that it will be an integrated whole that supports national development and a diverse society.

At the practical level of the arts, there are predictions that the use of AR, VR, and other technologies will continue to advance and such practical movements will increase at an accelerating pace. However, it is unfortunate that the image of the fusion of art and science is only in this one area.

Particularly in recent years, it has been thought that sensitivity and creativity need to be incorporated into science due to the harmful effects of splitting into many different specialties and becoming siloed. I hope that cultural policy will play a role in this area, and, as an integrated domain that encompasses both, that it will lead to the creation of a prosperous society.

However, there are also challenges. I have some experience from working for the Agency for Cultural Affairs, but administrative personnel are frequently transferred, which makes it difficult to develop expertise. Many local governments have also developed a "designated manager system" for local cultural facilities, which makes it difficult to operate and develop people over the long term.

We need people who can think about society and culture from a broad, long-term perspective, and who can connect different positions and expertise. We also need a system in which such an "ability to connect" is better understood and valued.

I hope that, together with science and with the help of people who connect positions and expertise, culture and art will continue to enrich people's lives.

Yuki Asakura

Yuki Asakura was born in Fukui Prefecture and then later graduated from the Faculty of Letters at Kyoto University. While at school, she was in the Music Department's symphony orchestra and was also involved in the orchestra's management. After working at a company, she completed the doctoral program in Applied Music at the Graduate School of Music at Tokyo University of Arts, and has a Ph. D. Yuki aims to make use of the diverse values of culture to create a prosperous society, and is pursuing ways of evaluating art that include the broader significance of culture. Since 2017, she has been engaged in international comparative research on cultural policies as a researcher at the Regional Culture Creation Division, which was established as a leading organization for relocating the Agency for Cultural Affairs to Kyoto.

no. 02 mai ishihara

Associate Professor, Center for Ainu & Indigenous Studies, Hokkaido University

Resolving issues surrounding minorities will lead to the development of society as a whole.

mai ishihara conducts research that is closely connected to minorities who are invisible in society and must remain silent. As a person with Ainu roots herself, she continually seeks to open up the future through dialogue with people from various walks of life. She spoke extensively about a wide range of topics, including the three types of silence, paths toward resolving them, and the role that minorities can play in the convergence of knowledge.

Modern society is full of "invisible people"

My research until now has focused on the "Silent Ainu." This refers to people who are troubled or disadvantaged by their Ainu background, but for various reasons are unable to speak out and therefore remain silent. These are individuals who are essentially "invisible people."

What led me to my current path was the sense of incongruity I felt during my experiences studying abroad and while being involved in international education as an English teacher.

Although I myself am a quarter Ainu, I was completely unaware of the issues surrounding the Ainu people, and their situation was hardly recognized by Japanese society as a whole, not even within Hokkaido, where the Ainu people are from.

These "Silent Ainu" are like an invisible people who are not seen by society. But this isn't just a problem for the Ainu -- in fact, Japanese society is full of such invisible people. If we just open our eyes and look, we'll find that even in Japan there are other cultures right in front of us. With that in mind, I set my sights on becoming a specialist and began my research career in my mid-twenties.

The same is true when we think about the future in 2050. I believe it is important to first understand what kind of society and culture are right before us. Then, if we can use the next 30 years to solve the problems we face today, I expect that Japan in 2050 will be an affluent and colorful society.

The background of this silence and its harmful effects

I believe that there are three factors behind silence: "hiding," "absence of words," and "exclusion of third categories."

"Hiding" means to hide and live without it being known that you are a minority. When I was 12 years old, I was told that my grandmother was Ainu, but also that "I shouldn't tell other people." Even today, unconscious discriminatory attitudes and racism, such as discrimination in marriage, are deeply rooted in society, so many people try to hide their minority status so that they do not suffer any disadvantages.

An "absence of words" refers to the way that the individuals themselves do not have the words to express and speak about their pain, even if they wanted to. In the case of the Ainu, the absence of words occurred because so many Ainu people and their descendants could not even connect with their history or with other Ainu.

The "exclusion of third categories" refers to the exclusion (or unilateral and forced inclusion) of individuals that do not exactly fit into one of two categories. Multiracial individuals (including myself), transgender individuals, and intersex individuals are likely to be subjected to exclusion in dualistic cognitive structures. Japan's views on ethnic diversity are still developing, and even on the national census there is not a single item where people can respond with "Ainu." In other words, Japan is in a situation where we don't know anything other than that a person is a "Japanese national" or a "foreign national."

Against this background, even if minorities and others try to convey how they have become invisible without hiding their existence, there are no words in the social structures that can be understood by others, and the end result is silence.

Silence makes it difficult to visualize problems that should exist, and it also makes it difficult for the victims themselves to realize that their pain is caused by society.

Places and media to bridge silence

One of my goals is to eliminate discrimination in marriage and suicide on the basis of Ainu origin. To achieve this goal, I believe that "*tojisha kenkyu*," a research method in which parties who are in need of help find a way to solve their own problems by making themselves the object of research, is effective.

And right now, what I value most in my research is "bridging the silence." There are many things that affected individuals are not adequately able to talk about and discuss, and I think that it is important to share the silence that these individuals have.

*mai ishihara's name is written in all lowercase letters to indicate that she is an indigenous feminist.

What is important is for them to create a place of their own where they can feel safe. And then, in that place, to talk about all these things. What happened, and what kind of environment or situation forced them to remain silent? In order to create a better society for the next generation, it is important for us to share each other's difficulties in life and to weave together things that cannot be put into words.

It has been my experience that when I talk about my own pain, about my own wounds, that the people who are listening to me will also start talking about their own pain and wounds. Even people who don't appear to be minorities when you first see them will open up and share their own wounds like this, and I am glad that these sessions are events where people can share their pain.

I have learned the theory of "place" from the works of phenomenologist Yasuhiko Murakami, and I believe that people, not just minorities, are healed in an atmosphere and place where they are allowed to speak their unspoken thoughts and feelings.

On top of that, we are in an era that demands diversity, and, it may sound strange, but I believe that the size of the economic value of minorities is also an important factor in making invisible people visible.

In the case of the Ainu, for example, their economic value is now very high, for better or worse, and they are often featured in the media. On the other hand, there are diverse people whose economic value is not recognized, and these people should also be given equal focus and attention. As part of my research on bridging silence, I hope to provide a fresh perspective on the positive and negative aspects of commercialization and consumption in media and journalism.

Understanding it as a whole-society pathology

There is a strong tendency to try to solve minority problems as problems of the individual mind. However, I feel that those who attack minorities in an exclusionary manner, for example, are manifesting the pathology of modern society more than their own moral problems. It will be difficult to find a fundamental solution to these problems unless we think that continuing to consider and discuss such pathologies will lead to the development of society as a whole, rather than thinking that it will only lead to saving minorities.

On the other hand, looking at the minority side, Shinichiro Kumagaya, a *leading tojisha kenkyu* researcher on people with cerebral palsy and a person with cerebral palsy himself, has proposed the phrase "exoneration from responsibility and shouldering responsibility."

First of all, we (minorities) must exonerate ourselves from responsibility, acknowledging that the wounds and suffering of minorities are not our own problems, but rather that they are caused by historical processes and social structures. Beyond that, we cake on responsibilities that we can shoulder and aim for solutions by ourselves while facing both the past and present. It is important to have processes for both exoneration from responsibility and shouldering responsibility.

People, including minorities, will always have reasons within society that lead to silence and being invisible. First of all, I would like to make them aware of this and create opportunities to exonerate them from this responsibility.

Minority perspectives can contribute to the development of science and technology

From the standpoint of research on minorities and various affected individuals, I am concerned about whether the philosophical terms "people with faces" is being understood amidst the development of science and technology. For example, I wonder whether our information society is respecting the unique nature of people, and, if this is a challenge for the technological side, then I think that our research can contribute a great deal to the convergence of knowledge.

In a future with widespread avatars and AI, I believe that how we perceive identity will also become an issue, and I believe that the "narrative" told by minorities and parties involved can provide great hints and ideas about how to confront it.

It is difficult for people to remember something unless there is pain or emotional attachment, and, moreover, we don't pass such things on to our descendants. I believe that in the future as society becomes more rationalized through the power of AI and other means, we will lose even more opportunities to think about our own identities.

In that respect, minorities live their lives always thinking about where they came from, how their lives are connected, and what kind of existence they have in this society. As such, their memories and stories have the power to be passed on. If we can present a methodology to express ourselves, our ancestors, or our groups, then I believe that there are things we can pass on to the future because we are minorities and affected individuals.

Similarly, I also believe that I have a role to play, and recently I have been describing myself as having a pangolin-like existence. Pangolins are ambiguous mammals, in that they have scales and only give birth to one baby at a time. I feel that is similar to me in that I have always felt that I am neither Ainu nor Japanese.

I had no place to be as an ambiguous existence that could be interpreted in two ways. That is why, with my unique perspective and in a closed society, I may be able to introduce a new power that will lead us to the next step.

In recent years people have often said that "the future is uncertain," but I believe that this also means that "there are hidden possibilities." I want to pioneer research that will enable people who are experiencing difficulties in their own lives to find a role for themself and to think "I will create the future!"

mai ishihara

mai ishihara was born in Sapporo, Hokkaido, and is a multiracial individual with Ainu, Koto Tondenbei (Aizu Clan), and other heritage. She graduated from the Department of English in the School of Humanities at Hokusei Gakuen University. After working at a high school and at a vocational school, she entered the Hokkaido University Graduate School of Humanities and Human Sciences and completed the doctoral course there, earning her Ph. D. in literature. Under the keywords of "silence" and "invisible people," she conducts research with various indigenous people overseas, as well as with various minorities and people in Japan. She specializes in cultural anthropology, indigenous studies, and indigenous feminism. She is also the author of "Autoethnography of Silence: The Silent Ainu's Story of Pain and Salvation" (Hokkaido University Press, 2020; winner of the Masayoshi Ohira Memorial Award) and editor and author of "150 Years of Hokkaido as Seen by the Ainu" (Hokkaido University Press, 2021).

no. 03

Yohei Ueda

Lecturer, Regional Development Education Research Center, University of Shiga Prefecture

Envisioning a future that spirals ever upward through convergence of knowledge that incorporates communities' "personal knowledge"

At the University of Shiga Prefecture, Yohei Ueda works on human resources development and developing approaches to urban development that aim to preserve a "natural life" and a "safe culture." Based on his studies of regional cultures, he uses his own methods unique techniques, such as "hometown picture folding screens" and provided us with suggestions on how the past and culture can be utilized in the future through our own experiences.

Nurturing the past to create the future

Simply put, the "hometown folding screens" that I'm working on use the experiences of people's five senses as materials and express the life history of a region via a single picture or as a picture book. This idea is spreading throughout Shiga Prefecture and other places as a sketch map of local life and culture, as a device for passing on local history and memories, as a medium of communication, and as a method of community development.

The catchphrase for the project is "Nurturing the past to create the future." They have a structure in which separate events that occurred in the past are chosen from a present perspective and then connected.

Omi Yasaka Zu folding picture screen (courtesy of Yohei Ueda)

In a similar vein, the religious leader Satomaro Fujishiro said, "It is not what has been that determines what will be, but what will be that determines what has been."

In short, the meaning of past events depends on what we learn from the past and how we live in the future. What meaning do we give to the past, and how do we interpret it? Those possibilities are open to the future.

Then, since the meaning of past events is constantly being rewritten and developed through new discoveries and interpretations, there is in fact no such thing as an absolute, unchanging, and complete "history." On the contrary, it is even possible to fabricate historical meaning and evaluation, so that one can say, "History is a lie. It is impossible."

However, that is why I believe it is important for many people to talk about history and examine it together, so that together they can enhance the certainty of the process.

Each human being can express and share a different "*umwelt*"

One of the scholars who has greatly influenced me is Toshitaka Hidaka, who established animal behavioral science in Japan. From Mr. Hidaka, I learned the concept of "*umwelt*," which means that each living creature does not live in an objective environment, but lives in its own unique world composed of things that it independently selects as meaningful from its surrounding environment based on the perceptual abilities it possesses. In the case of human beings, it seems that each individual lives in a different *umwelt*, and that we create far more unique *umwelts* than those of animals.

For example, I interviewed an *uchiwa* (traditional Japanese folding fans) craftsman when I was a student, and the subject of our discussion was *madake* bamboo, the material that is used to make *uchiwa*. From this discussed, I learned that, even though all *madake* bamboo looks the same to me, the craftsman had a completely different perspective from mine, focusing on how suitable or unsuitable the *madake* bamboo is depending on when and where it is harvested.

Human beings have the imagination to overcome the limitations of their physical capabilities, there are diverse ways of life according to each person's experience, and there are cultural forces that transcend individuals. Different countries and languages also have very different ways of seeing the world. This richness, this power of human beings, has made me fall in love with it, but at the same time I was at a loss. If each of us sees things differently, then how should we join hands and work together?

In the end, I came to the conclusion that humans are creatures that express their differing *umwelt* in some form, that seek to share and exchange, and that find joy in doing so. There is a human quality to it, and I was able to discover the role of science & technology, learning, and language.

Focusing on 'correctness' cuts of someone's meaning

I started "hometown folding picture screens" because I wanted to look into the *umwelt* of people living in the region, and pictures were a way to express and share it. I thought that it might be necessary to draw pictures in order to share the

relationships between individual events and the overall picture.

I think there will probably be some criticism about the rigor and accuracy of the hometown folding picture screens, and that is partly because, even if you listen to stories from elderly people, they may at times remember things differently from how they actually were.

However, if you interrupt them and point out the accuracy of what they're saying, then they won't want to talk with you.

We don't want to destroy the world that the person is trying to narrate by obsessing over accuracy rather than the meaning of the events. To devalue the "now" time in which the person's narrative is born and the narrative's meaning to the person, and to prioritize the correctness of the story or event as a finished product, to me that feels the same as modern society using productive forces as a value standard and using present lives just as a tool for future purposes.

Are the senses and sensibilities of each individual being cherished today? In our consumer society, are we living with senses created by others? Is the gaze that we turn toward the nature in front of us becoming poor and stale? I feel such a sense of crisis.

However, elderly people recall the times when they lived, in a world rooted in artisans and the climate, they can still see a rich *umwelt*. If we don't listen to them now, then I'm afraid that we won't be able to convey that to the future. And, without a doubt, there are things that have been forgotten in the process of modernization. The theme of my activities is how to create and pass on the "place" where we stand on.

The answer given for the future by those who know the history of life in the region will be different from the answer given by those who do not know it. This is one of the wishes we put into "hometown" folding picture screens.

Instead of drawing a straight, linear path toward the future, we circulate the past over and over again, but moving forward into a future that is different from the past. Although the scenery hasn't changed much, I have an image of the future where dimensions and phases spiral up and change.

Can "personal knowledge" be incorporated into convergence of knowledge?

In thinking about convergence of knowledge, the first question is, "Where does the knowledge come from?"

In my case, when creating hometown folding picture screens, I of course refer to literature and other sources, but, more than that, I seek out materials from the perceptional experiences and recognition that people living in the region have acquired through their five senses. I call this kind of thing "personal knowledge" as a counterpoint to knowledge. In prehistory, this kind of personal knowledge was passed down from person to person.

When creating convergence of knowledge in academia, I believe that the challenge is how to incorporate this kind of chaotic personal knowledge. Moreover, knowledge in a region is not limited to what individuals possess, but also includes the perceptions, thoughts, and attitudes that have been shared across generations through the same occupations in the same places.

Are there words in the natural sciences that express personal knowledge? I would like to have a dialogue about that kind of idea. Through dialogue, I think that we can sometimes clarify each other's knowledge, and, it would be extremely interesting if we could realize convergence of knowledge even for personal knowledge.

I think the essence of genuine technologies are light, thin and small. For example, just as computers have become smaller and smaller, have shifted from heavy and bulky to light and thin, I think that thin and small can be called an evolution of technology.

I believe that that we need to have an idea to put technologies to proper use. In some areas, nuclear power may be necessary, and in other situations, like for village blacksmiths of the past, there may be a need for renewable energy that can be operated with just local, human-scale technologies.

When technology options are presented and democratized, then perhaps it can be said that we are, in a true sense, mastering science and technology.

This environment and this life are "entrusted to us"

Ultimately, my activities are to fulfill the desire to live "here, together, safely." I believe that the wishes of the people in the small communities where I am practicing will eventually end up in this state.

They do not think on a large scale, such as about the future 50 years from now, or the world, or space. Instead they want to live in this place, with their family and friends in the community, and they want to live today as yesterday and tomorrow as today. As such, I want to respond to their modest desire to pass on what their ancestors have handed down to them.

These environments and lifestyles are not our own, but are "entrusted" to use by our ancestors and descendants. We happen to "protect" them for a short period of time and then pass them on to the next generation. These ideas are a wonderful part of Japanese culture that should be shared with the world.

Particularly in the case of Shiga Prefecture, there is an extremely important platform known as Lake Biwa. Shiga Prefecture's environment, economy, and society are all connected by Lake Biwa.

Protecting the environment of Lake Biwa and connecting it to the future is also creating the future of the region. When considering SDGs, I also think that the local culture that has been nurtured around Lake Biwa is very interesting.

Yohei Ueda

Yohei Ueda was born in Kyoto Prefecture, and, after completing the Department of Regional Studies doctoral program in the Graduate School of Human Cultures at the University of Shiga Prefecture, he withdrew from the university. His specialty is regional cultures and regional studies. While he works on research and practices related to life and culture rooted in local climates, he is also involved in nurturing human resources responsible for community development, in developing and operating co-education programs in cooperation with communities, and as an "on-call town development doctor" who provides consultations in all fields related to communities. He has developed a multi-generational co-creative town development method called "mental projection," in which local residents draw and talk about their *umwelt*-like local images (hometown folding picture screens) based on their sensory experiences. This method is widely spreading around the world. One of his major publications is "Regional Development Starting from Place Creation " (co-author, Gakugei Publishing, 2021).

no. 04

Sacko Oussouby

Director, General Research Organization, Kyoto Seika University (former President)

New spaces and ways of communication in line with our information-oriented and diversified society

In 2018, Sacko Oussouby became the first African-born university president in Japan. Sacko is a specialist in spatial anthropology, and we asked him about what kind of spaces and communications we should build in an increasingly information-oriented and diverse society.

Family, society, and space influence each other

In imagining the future in 2050, we must first consider population and aging. What will social structures and family patterns be like in 2050, when the world population will exceed 10 billion and about half of the population will be 100 years old or older? As experts in spaces and architecture, this kind of information will greatly change our proposals. This is because family, society, and space have a relationship that influences each other.

For example, with the rapid progress over the last few years in things moving online, such as telework and remote classes, having a small office at home will become a prerequisite for housing in the future. In addition to this, there are also examples from France of policies aimed at population recovery through common-law marriages, and now there are families where LGBTQ partners are raising adopted children and a variety of family patterns will become commonplace.

In other words, family units will become more organic than they are now. As this happens, housing also need to change, and so building materials and supply chains, etc. will also change.

I believe that the pattern of residents creating and changing their residences to meet their own needs will become the standard throughout the world, and that the work architects do will probably be greatly reduced. The only work that will remain will be to judge at the final stage whether the building meets standards and regulations.

New global standards for an information society

If spaces change, then the communication patterns that we have used until now may also change.

Our information society has brought many channels of communication to the virtual world, which is not limited to space, and for future generations this will become the standard.

Even the students at my university are so immersed in a world of information, and this world of information is so different from the world of their physical existence that they cannot even answer questions about what they saw on their way to the classroom. While this is interesting, it is also alarming, and we need to think carefully about how to create a society that is a hybrid of both the virtual and the real.

Incidentally, African societies have been very interdependent until now. However, as the movement of goods and information has become more active, they have become more independent. Personally, I am very hopeful that their interdependence will diminish and that they will become moderately independent societies.

I believe that the traditional, classical family structure will change, but that does not mean that all forms of communication will change. I believe that a new pattern will emerge in which each person is independent in a supportive society that is uniquely African.

It is unlikely that current social structures will continue for another 30 years. Of course, unique local cultures will remain, but I believe that the information society will spread it to the world and that new global standards will emerge.

Future society will inevitably diversify

I was born in Mali, Africa, and came to Japan in 1991 to attend graduate school at Kyoto University. At first, I felt as if I was expected to behave in a Japanese way, and it was stressful because, despite my best efforts, I could not succeed.

However, at some point, I realized that it was important for me, who has Malian culture and sensibilities at my core, to understand Japan, collaborate with Japanese people, and do good work. That's when I came to think that my presence worked in a positive way.

The awareness that society will be improved by the presence of foreigners is not widespread in Japan. However, society will surely become more diverse in the future. If that is the case, then it is important to consider how we will make a diverse society function.

A hint for this problem is to think of familiar issues that are common around the world and to use them as a starting point. For example, the issue of nursing care is an issue in many developed countries, as it is in Japan, and in countries such as France, many of the caregivers rely on immigrants.

Since the shortage of caregivers will become an increasing issue in many countries, I think it would be good if there was something like an "international license" system that became a global standard and allowed people to obtain skills that are common all around the world.

In fact, in terms of materials, such as diapers, the same products are already in use in Japan, France, and Mali. I hope that the same thing will happen in terms of skills and software.

Aiming for a society we "want to create" rather than a society that "is created"

One of the major issues facing Japan is a social structure that assumes that "the Japanese standard is the global standard."

Because there is already infrastructure in place, Japan is cautious about shifting to new technologies, and, in the meantime, they are unaware that they are unaware that other countries have already introduced these technologies and that Japan is starting to fall behind.

I believe that the cause of this is a lack of self-awareness, and as an educator, I think It's a problem.

For example, science and technology should be used for purposes established by our thoughts, values and philosophy. But now it is the opposite, and we are being used by science and technology. This is because we have put knowledge ahead of society and are betting on the potential of science.

However, what emerged as a result of this is a society that "is created" and limited by science and technology. In order to cultivate the "ability to imagine society" that is necessary to realize the "society we want to create," we must enhance our self-awareness through history and philosophy.

One way to achieve this is to continue studying history and philosophy from the elementary and junior high school stages. In fact, our university has been working on curriculum reforms, such as making philosophy and liberal arts compulsory.

The other is education to hone observational skills. I believe that "knowing oneself" is a skill that is necessary to cope with globalization. This can also be stated as "being able to see where you stand" without being swayed by the masses, through which you can develop and expand your horizon.

That is why it is so important to educate children from an early age to develop a self-awareness of who they are.

Meiso-kan, a new communication hub (courtesy of Kyoto Seika University)

Places for communication are necessary for regional development and diversity

In Japan there are few open places for casual communication. Everything is under control, reservations are required, and things cannot be used freely. This leads to words that shouldn't be used in communication, such as *mendokusai* (bothersome) and *meiwaku* (annoying).

We don't need a reason to communicate. In Mali, we put a lot of chairs in front of a house so that anyone can come. If you create small places like this, then people will naturally come. In the US and other countries for example, there are very active community dialogues.

Such places are also important for community development and for the functioning of a diverse society. It will be necessary for Japan to increase the number of places where people can feel a sense of belonging to the community.

I believe that universities can be places to foster such relationships among citizens. The Meiso-kan, which was completed in February 2022, will serve as a community commons, and we intend to make part of the facility available to the public.

We hope to create new communication in the community and for the students to learn from all the information that they encounter at the Meiso-kan.

Sacko Oussouby

Sacko Oussouby was born in Mali, and, after studying at Beijing Language and Culture University and Southeast University in Nanjing, he became a faculty member at Kyoto Seika University in 2001. He is multilingual and speaks Bambara, English, French, Chinese, and the Kansai dialect of Japanese. Under the theme of "spatial anthropology," he and his students research the real relationships between environments, communities, and spaces that differ from country to country and from region to region. From the familiar perspective of daily life, he advocates for a society that accepts diverse values. From December 2021 he has also been serving as Deputy Chairperson of the Japan Association for the 2025 World Exposition.

no. 05 Tatsuhiro Kamisato

Professor, Graduate School of Global and Transdisciplinary Studies, Chiba University

Bringing true universal design to society by compiling a variety of specialized knowledge

Tatsuhiro Kamisato studies the relationship between professionalism and democracy, the risks associated with science and technology, and ethical issues related to IT and life sciences. As on expert on the history of science, he has written several books, including "Civilization Detective Adventure: Is Now a Turning Point in History?" and "The Realities of Risk: Surviving in an Age of Anxiety." In addition to showing the high expectations of experts who curate various types of knowledge, he has aimed for improving QOL (Quality of Life) through "true universal design."

"The Realities of Risk," Tatsuhiro Kamisato's book

Thinking about the future based on the premise of a "declining society"

When considering Japan's future in 2050, I think that it is important to think about what is certain.

First of all, the most predictable aspect of the future is demographics. Nearly 40% of the population will be over 65 years old, and the population will reach about 100 million people.

Another thing that I consider to be certain is the occurrence of a large-scale disaster. There is a high probability that a Nankai Trough earthquake will occur within the next 40 years and that a major earthquake directly beneath the Tokyo metropolitan area will occur within the next 30 years. In other words, by 2050, Japan will probably have already experienced damage on a greater scale than that of the Great East Japan Earthquake in 2011, and it will be a majority elderly country with very few children.

The economy will also probably get worse. As the working-age population declines, some predict that Japan's share of global GDP will drop to one-tenth of its peak around 1995, and Japan's share of the global population will also be about 1%. If that happens, then Japan's standard of living will probably drop considerably, and, before that, Japan is a country that has not grown economically at all for the past 30 years. I don't see any factors that would allow for a V-shaped recovery in an economy that has not grown in the previous years.

When talking about the future, rather than thinking about the bright side, I think that it's better to start with things like demographics and disasters, which are near-certainties, and to then consider ways to be happy based on the premise of a "declining society."

Finding sources of value in Japan's long-term history

On top of that, it is also important to look at the history of declining nations. Take Spain for example, which because a global empire in the 16th century, but now no one thinks that it is a bad country even though it recently lost its former glory. To the contrary, we think that it is an interesting country with rich food, culture, and a long history, but over the long run it has still declined.

Countries prosper and decline. Some countries prosper more than once. Japan is a country that prospered in the latter half of the 20th century. Even if it goes into decline, Japan has a long history, is very attractive, and has a very rich natural environment. From the perspective of information technology, these can be said to be "data" that are sources of value.

From the point of view of values during Japan's Showa period, from 1926 to 1989, we were in a negative economic situation and were in a rush trying to take measures to fix it. But this didn't work because it was going against historical trends.

The same is true for science and technology. Of course, it would be better for Japan to grow economically, but we need to think about our relationship with society based on the premise that we can no longer grow as we did in the past.

In this regard, I think the vision of the future as described in policy "Society 5.0" is somewhat wasteful.

Improving QOL with true universal design

As to specifically, we should adopt "universal design" in a broad sense. The universal design that is generally imagined today is very limited, for example, "a pedestrian crosswalks

that are easy to cross even for the visually impaired". But the term originally refers to designs that can benefit people in any condition. If we reconsider and review technologies from this perspective, then I think that there is still room for universal design.

What we need to do is to listen and talk to people who are struggling. For example, I interviewed single mothers and elderly people who were suffering and struggling during COVID-19, and the answers that they provided were their most important needs. It is also really important to conduct tojisha kenkyu (research method in which parties who are in need of help find a way to solve their own problems by making themselves the object of research) with the elderly and people with dementia, and, if you can correct their problems by combining a bit of technology, then it will make a big difference in their QOL. Improving QOL also leads to higher productivity for society as a whole, so I think that this is extremely important.

"Social editing" as a concept that creates convergence of knowledge

Convergence of knowledge is created by the ability to edit the knowledge possessed by each expert, or, in other words, it is the concept of "social editing."

For example, music is now being created by editing existing works. The same thing is happening with knowledge.

The initial raw data is produced by experts, but it does not add much value by itself. Therefore, we have to use an object-oriented approach, instead of the traditional academic approach.

And I think what is needed for "social editing" is a certain kind of critical intelligence, logical thinking, and the ability to conceptualize things in the humanities and social sciences.

There are two types of knowledge: *hammer* knowledge and scale knowledge. Engineering, for example, typically uses *hammer* knowledge because it is knowledge that changes society by creating things.

Many fields such as economics and psychology, which aim to apply knowledge, and medicine, in the sense of problem solving, are also *hammer* knowledge. On the other hand, things that serve as indicators of society, such as philosophy, history, and physics that are purely observable, are scale knowledge.

Regardless of whether we are talking about the sciences or the humanities, there is direct and indirect knowledge for both. When organized in this way, I think that convergence of knowledge means considering the relationship between the direct and indirect knowledge, or valuing indirect knowledge in and of itself.

I feel that the current expectation for convergence of knowledge is intended to apply the so-called humanities as a direct knowledge. The intention is probably to use humanities knowledge to solve social problems, which will then lead to economic growth. But I think that this is so short-sighted. It seems to be hard to know the diversity of the humanities from the outside. That's why I think that we need "social editors."

Editing based on the strengths of the humanities & social sciences and emerging trends

Not all knowledge of the humanities and social sciences is useful for what I have discussed so far, but I think that it can be an advantage to have some historical, social, and socio-psychological sense.

We should have the ability to listen to the problems of people in a negative state of mind and to collaborate with consideration for their feelings.

In political science, for example, more and more people are doing new things. The field of quantitative political science, based on data such as voting behavior and public opinion polls, is growing rapidly, as people consider questions such as "What is an election in the first place?" This movement is very interesting as democracy is original a statistical phenomenon in the first place. I am not saying that everything should be done with statistics, because there are risks from the viewpoint of science and technology studies, but it is interesting to see this new way of studying humanities and social sciences.

To set an agenda for the future in light of these new dynamics, we need young people to participate. As we need motivation to talk about future and our society is changing a lot, it is obvious we need ideas from young people.

On the other hand, one challenge is how to motivate young people to participate. They are under pressure to obtain jobs and achievement and are also very busy. We will have to design places where mere participation has a positive effect on them. That's where editors' skills come in.

Editors are kind of strange people. They are both creative and uncreative. They are mysterious mediators. If there were editor-like people for certain areas of society, then I think that everyone would be closer to each other and happier.

Tatsuhiro Kamisato

Tatsuhiro Kamisato was born in Kanagawa Prefecture and graduated from the Faculty of Engineering at the University of Tokyo and earned doctoral credit from the Graduate School of Arts and Sciences at the University of Tokyo. He specialized in the social theory of science and technology, the history of science, and risk theory, and has a Ph. D. in engineering. He is currently a professor at the Graduate School of International Studies at Chiba University, is Director of the Graduate Degree Program of Global and Transdisciplinary Studies at Chiba University, is a visiting professor at Osaka University, and is also a member of the Science Council of Japan. His recent publications include "The Global Revolution of Blockchain " (Kawada Shobo Shinsha, 2019) and "The Realities of Risk " (Iwanami Shinsho, 2020). He supervised the translation of the "Risk Communication Standards Manual " (Fukumura Publishing, 2021).

no. 06

Nahoko Kusaka

Professor, Faculty of Contemporary Social Studies, Doshisha Women's University of Liberal Arts

Changing from the individual-oriented "I" to an empathetic "We"

Nahoko Kusaka is working to make practical communities for elderly people and develop psychological programs for them to create a sense of purpose in life, with the aim of realizing a society in which growing old is a joyful experience. She talked to us about how it is important for affected individuals to create their own standards of well-being together with their peers, and for that, we must transcend individual passions and sensibilities for collective happiness.

The balance between quantitative and qualitative is important

I chose to specialize in gerontology (the scientific study of old age, the process of aging, and the particular problems of old people) because I felt that there was a gap between the negative academic image of the elderly and the real, vibrant lives of the elderly when I came into contact with them in my social science studies. In my doctoral dissertation, I conducted a quantitative survey using questionnaires, but the results of the survey did not overlap with the actual images of the elderly people I encountered. I realized that while it is necessary to present quantitative measures in order to gain a broad common understanding, it is also important to look at each individual from a qualitative perspective, and that a balance between the two is important.

Japanese society today also has fixed values, and the people who have supported these values have created the foundation for today's society, science and technology, and are also the source of society's education. We live in a world where anything that is not in line with these values is unacceptable.

Of course, quantitative standards are necessary in society, but there will always be those who do not fit the criteria. As a result, social divisions will occur between those who control the standards and those who are vulnerable.

Just as an unplanned error can lead to an organic evolution, there are always ways for us to grow from unusual challenges. That is why it is important to carefully and qualitatively look at each individual's differences, and I believe that in doing so there is a chance to change society and values.

The role of technology in aging societies

As science and technology advance and as the role of technology in improving aging societies becomes more important, I feel that in recent years we have rethought how we use technologies.

In the past, people accepted aging as something natural. Around 1980, the mindset of people changed to resist aging by using technology and medicine. Since around 2000, however, society as a whole has no longer been able to resist aging.

That is why I believe that if we can onece again accept aging naturally, which is often spoken of negatively, then new values will be born.

I hope we can use technology to improve our lives and to unlock each individual's potential.

I think that something becomes our own matter by talking with other people. But it is hard to put into words what we are feeling.

I believe that we need tools and technology to support this process, and I have developed tools to help structure each individual's inner thoughts. They are simple devices, but the power of technology makes it possible for each person to share their thoughts and individuality with everyone.

In addition, as with going online, people are no longer constrained by location and can freely choose their activities. Elderly people have become much more active, I feel.

Technology enhances these kinds of communication, and I hope that it will become an engine to develop relationships that create new value.

Individual purpose becomes collective joy

I feel that our view of knowledge is dramatically changing right now. We are seeking fluid knowledge from fixed knowledge, and the emphasis is on applicability and versatility.

The "Wonderful Cube," developed by Nahoko Kusaka, is a tool that assists in life design (courtesy: Nahoko Kusaka)

Because fixed knowledge can now be handled by AI and other technologies, I feel that there is a demand for convergence of knowledge as fluid knowledge.

In this respect, gerontology has always had an interdisciplinary background with no barriers. I believe that it is a field that embodies convergence of knowledge, and is framed by people who are interested in the common issues of "aging," which includes any field such as medicine, economics, psychology, and social sciences, etc.

From my experience, I believe there are two things that are important for convergence of knowledge. One is personal passion and empathy. Things start to flow when people who share the impact of one's passion come together, and then things start to flow and move.

However, even more important is to objectively broaden the goal beyond that of individuals. I often say "changing from I to We," and I think that it is extremely important to transform individual goals into collective joy. It is important for affected individulals themselves to work together with others to create standards of well-being which can be perceived in a various ways.

In order to do so, it is important for people to ask their own questions, such as "Why something is necessary," "Whether something is really useful to society," and "Whether people close to you will be pleased."

"Questions" are actually all around us. Sharpen your senses and openly talk, without fear, about what you feel uncomfortable with. After all, having a firsthand awareness of the issues is important because it stimulates creativity.

To that end, it will be important to train children to express themselves by using their bodies and senses.

Using technology to accelerate methodologies in the humanities and social sciences

In formulating questions, it is important to have an image of what your goal is, such as saying, "we want this kind of society," and to then look at it from the perspective of backcasting. The more attractive that image is, the more specific the conversations can be, and the more diverse people will gather.

I believe that the humanities and social sciences have a role to play in drawing the processes and stories towards goals. We must gather the necessary players and create space for the questions that have been formulated. By presenting a story along with the elements that drive the overall process, it becomes easier to apply specialized knowledge and skills.

Reflection and introspection are also very important. We provide meanings to what we look back on. In other words, experience and knowledge of the humanities and social sciences are actually repeatedly put into practice in a short period of time, and are then repeatedly improved to become a methodology. I also have high hopes that the power of the natural sciences will accelerate this cycle.

I also believe that the creation of indicators is another area where the humanities and social sciences can play a role. The "shared dining" project I am working on is a project in which we are trying to find out for ourselves "what are the criteria for goodness here?

For example, it's great to enjoy a meal together, but the axis of "goodness" varies from person to person. By indexing the characteristic behaviors and patterns of scenes in which people are satisfied, we return the outcomes so that they happen repeatedly. Repeating and formulating a methodology for this will eventually lead to health and economic affluence. But this is just an example of a specific indicator for well-being, and an example that could be used by local governments for preventing frailty and nursing care.

However, researchers are a very limited social group, so the standards of goodness that are considered in academia do not apply to everyone. Research results cannot be confirmed unless you talk to the people that they affect, so I always think that it is necessary for researchers to go into the field and do their work while engaging in dialogue.

I hope the evaluators of academia are also diverse, and I think it would be good to have a system that allows us to work together, instead of merely being evaluators. In order to break our current fixed values, I feel that we need to have a tolerance for "something might be created from this" or "I don't know what will happen, but let's see how we like it" and also to have imagination to picture the possibilities.

Everything starts with small experiments and prototypes, and affected individuals discover methodologies that lead to altruistic behavior and empathy by accumulating small successes while having fun with their peers. It would be wonderful if technology could induce this series of processes.

Nahoko Kusaka

Nahoko Kusaka was born in Hyogo Prefecture and completed the Department of Educational Psychology doctoral course in the Graduate School of Humanities at Kwansei Gakuin University. Her specialty is geriatric psychology, and she is a clinical psychologist and a licensed psychologist. With "wonderful aging" as a keyword, she is conducting practical research on creating a purpose in life in the age of longevity and creating advanced spaces through multigenerational communication design. Her major works include "Wonderful Aging " (Nakanishiya Publishing, sole author) and "Designing Your Life " (Nakanishiya Publishing, editor).

no. 07

Kei Kudo

Chairperson, NPO-SODATEAGE-NET

Expecting academia to provide perspectives and cross boundaries for social implementation

Kei Kudo is involved with projects to support the social independence of young people who have difficulty finding regular employment, people such as NEETs (Not in Education, Employment, or Training) or *hikkikomori* (individuals with acute social withdrawal). He talked with us about the importance of cooperation between academia and other organizations, such as NPOs, and also discussed his expectations for researchers to have a perspective towards social implementation and to actively go outside the boundaries of their academic disciplines.

Aiming for a society that no longer needs us

SODATEAGE-NET is an NPO with employment support as its core value. NPOs can be broadly categorized as "NPOs that solve problems" and "NPOs that create value," and we are one of the former. We support young *hikkikomori* and youth who have been released from juvenile detention centers so that they can work in a way that suits them.

My ultimate goal is for this organization to disappear. In other words, I'm aiming for a society in which these issues are resolved and our existence is no longer necessary. In reality, however, the issues are becoming more complex and more compounded, so we are working while pivoting (changing our policies).

In terms of personal goals, I want the youth I support to have a modest amount of freedom or leeway, such as having enough money to buy some sweets with their own money and add it to their lunch, or to be able to go out drinking with their friends. People who are *hikkikomori* try to live in such a way as to not be hated by their families – they try to eat as little as possible, darken their room, try to avoid using electricity.

But what they are doing is also about getting rid of desires. When people lose their desires, they also stop wanting to work or to go and meet people. I think that we have to kindle small desires in them, such as "I want to eat," "I want to meet someone," and "I want to go somewhere."

Preventative support is the number one priority

In the abstract, the people that we are trying to target with are people who are drowning. There is always some reason that people fall into a river – some people step off a bridge, some people are pushed off by someone else, and for some people they were born without a bridge in the first place.

If the person we are helping is a youth, then we offer a basic employment training program, we support families who are worried about their children, and we support academic studies and daily life for elementary, junior high school, and high school students.

The Japanese government plans to establish a new "Agency for Children and Families," but most of the support it will provide is based on the premise that a family or household has already been established.

After having been involved with supporting juvenile detention centers over the past five years, I have learned that there are many instances where children have already been abused or neglected since birth, or who have no parents in the first place, or who have not been properly nurtured. Support for families depends on the family's ability to receive support, and as such I believe that preventive support is the first priority so that children can receive a minimum social upbringing regardless of whether they have a family or not.

The advantages and disadvantages of technology

In recent years, we have seen a shift in the number of people working without leaving their homes. For example, an individual who has been *hikkikomori* for 10 years is now employed full time after taking an employment training program and an online system developer internship.

His situation of being *hikkikomori* has not changed, but he says, "I'm happy because I have an income." He is working, and he is earning a paycheck, but he stays at home all the time. I'm not sure if the family thinks that is good or not. The gap between values and technological progress is quite interesting right now.

I see both advantages and disadvantages in society's shift to being more online. For example, approximately 800 people attended a recent cybersecurity course. All of these people had their webcams turned off, but I was still able to meet people I had never encountered before, even if it was just via a telecommunications line.

As far as hikkikomori are concerned, the only way to meet them was to have them come or to go to them. The fact that we now have a new option is a big change. In the past when we ran a support program, a conference room could only accommodate about 10 people, but now, with remote access, several hundred people can receive the program.

On the other hand, the practical theory of support that have cultivated essentially started from "meeting," and did not assume remote interactions, which may not be the way it should be. We have to ask ourselves, should we meet at least once, or should we not? I don't know what the correct answer is.

By using technologies such as the metaverse, I think we will continue to see many more options for engaging with people. However, information that can be given face-to-face will become more difficult to distribute as the number of options for interactions increases. Maybe the person on the other side of the screen has fallen down, or maybe the fact that we can't get in touch with them means that something life-threatening is happening. We are blind to these types of risks.

Because there is a need, we are currently building new know-how while going through the process of trial and error because of the absence of scientific evidence.

Expectations of science to promote "socialization of problems"

In the future, instead of qualitative judgements that can only be understood by experts, it will, for example, be important to have students use wearable devices and other such technologies to gain scientific and medical knowledge while creating a form of learning that is most convenient for them.

In recent years, the issues surrounding young people have become even more complex. Because NPOs alone cannot provide preventive solutions, we need to work with businesses and governments to solve complex questions. From a backcasting perspective, we need to work on how to prevent such people from arising, while at the same time applying evidence and scientific findings to policy.

I also feel that there are other cultural and climate problems related to policies and the legal system. This is called the "socialization of problems," and they don't become a social problem unless everyone recognizes the issue as a problem.

And how do we connect to people who aren't interested in these problems? I get some societal reactions through posting on Yahoo! News, but I hope that the mechanism for "socialization of problems" will be scientifically understood.

We need the help of researchers in this area because we can't do it ourselves. Collaboration with highly neutral academia and scientists is also becoming very important.

Communication for "social implementation"

I feel that there aren't very many researchers who are aware of the approach of "do something first, then the money will come," and this is a problem in the collaboration between academia and NPOs. If you think about the basic form of "I will do something because I have money," while keeping in mind research fees and competitive funding, then there is a time lag until the money starts flowing. For example, I hope that it will become easier for NPOs and universities to team up and conduct joint research by using the NPO's budget.

Another thing I feel is that there are surprisingly few researchers who have a perspective on "how to implement research results into society." As an NPO, we are on the "social implementation side," so people come to us to discuss their research, and there are many cases where there is very clear proof or evidence for something but that only have an output or results that is limited to a "presentation at an academic conference" or being "published on the internet." Some researchers who have daily relationships with nursing care facilities and NPOs have clear problems with going all the way to social implementation, so I think that just daily communication on the NPO side is still insufficient.

In order to cross boundaries, sharing issues and needs is necessary

As a way to deepen our daily communication, it would be a good idea, for example, if a university researcher could have a dual job and work part-time at our NPO one day a week. It could also be a PH.D. student. I hope that they could work with us by using the university's secondment system and get paid by us.

As a matter of fact, a person from one of Japan's governmental ministries is now working with us as a member of our team through dual employment. This is a virtuous cycle in which they look at the on-site communication that we have, and, conversely, they investigate the systems we need. If there are barriers when we are working together then lines will inevitably be drawn in communications, so I believe we all need to cross and overcome these boundaries.

In order to cross these boundaries and engage in collaboration, it is necessary for us to come together towards common issues. However, it is difficult to do so without needs. I think that things will work well if we first discuss each other's issues and needs, and then build teams from there. This process takes a lot of time and effort, but it is important in terms of convergence of knowledge.

Work experiences, such as in agriculture, use job training to create a foundation for working (courtesy: Kei Kudo)

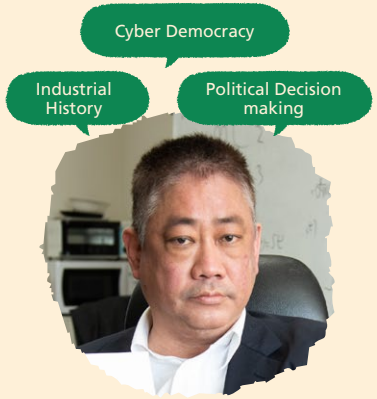
Kei Kudo

Kei Kudo was born in Tokyo and graduated from Bellevue Community College in the United States. In 2001 he established SODATEAGE-NET as a private, voluntary organization specializing in youth employment support, and then in 2004 he converted it into an NPO. SODATEAGE-NET's mission is to connect young people and society. His publications include "*NPO-de-Hataraku*" (Working at an NPO) (Toyo Keizai Inc.) and"*Daisotsu-Datte-Mushoku-ni-Naru*" (College graduates can be unemployed) (Enterbrain). He is a visiting professor at Kanazawa Institute of Technology and a part-time lecturer at Toyo University. He has served as a member of the Cabinet Office's "Personal Support Service Review Committee" and as a member of the Tokyo Metropolitan Government's "Tokyo Lifelong Learning Council." He is an advisor for a JST-RISTEX program aimed at preventing social isolation and loneliness.

no. 08

Takeshi Sakade

Associate Professor, Graduate School of Economics, Kyoto University



Building "cyber democracy" that makes full use of digital technologies

Takeshi Sakade specializes in research on Western economic history and on international political economy. He is also developing research on the theme of "cyber democracy" based on the relationship between democracy and technology. As the virtual world expands further in the future, what kind of social design will be necessary? And what elements should be kept in mind to promote convergence of knowledge? To find out more, we asked him about his thoughts.

In 2050, the real living environment will become important

There are so many possibilities for 2050. For example, will we continue to extend the line of our relatively stable economic society, or will we have an economic, social, and political decline? A variety of technologies will also debut, so it may be possible to realize the mars colonization plan that is being promoted by Tesla's Elon Musk. If people move to Mars, then they may no longer have to think about environmental problems on Earth. Thus, our vision of the future changes depending on where we place our assumptions.

Looking at how things are right now, the "metaverse" is really generating a lot of buzz. I've also tried using a headset for VR spaces, but I thought that "I can't wear this all the time." I think that VR's ease of use will gradually improve, but your eyes, body, and spirit will be exhausted if you wear it 24 hours a day.

Going forward, in cyberspace companies will open stores, malls will be established, and money will steadily flow into this field. There may be a "post-zero generation" of young people who can stay in these kinds of virtual spaces forever, but I don't want to be there all the time. No matter how much technology develops, if we cannot stay in cyberspace 24 hours a day, then the real world will become more important.

Digital worlds may eventually become a more prominent reality, but there will always be the question of how to think about the living environment, which is to say the real world, after goggles and other devices are taken off.

Digital garden cities of 30,000 people built around nature

The "Digital Garden City Concept," announced under the leadership of Prime Minister Fumio Kishida in 2021, has already become a hot topic. The garden city itself was first conceived of by Ebenezer Howard and built in the London suburbs in the late 19th century.

People may have an image of the countryside for garden cities, but they are sophisticated cities with a park in the middle of the city and then surrounded by houses with gardens (not rice paddies). Railroads and roads are built there, there are also vocational schools for agriculture and industry, and the population is about 32,000 people. As such, right from the beginning, modern cities of 200,000 to 300,000 people do not conform to the garden city concept.

If we attempt to create garden cities in the digital age, then they will surely become a mirror world that integrates a garden city in the real world and a digital twin (technology that, based on information in the real world, reproduces real spaces in cyberspace) of the garden in cyber space. As for the residential scale of these digital garden cities, I think that having 30,000 to 50,000 people at most is desirable.

Digital support for the "3 K's" of cyber democracy

What we need to consider, then, is the establishment of freedom and democracy in digital space, which is to say "cyber democracy." At Kyoto University I am conducting joint research with Yasuo Deguchi (professor and philosopher at the Graduate School of Letters) on cyber democracy, and we are actually discussing these ideas with Fukui Prefecture and others.

Population decline will be a major challenge in cyber democracy. Local populations are steadily declining, populations are aging, and few young people are interested in politics.

My idea for this is to build a system that supports the

The CYBER DEMOCRACY booklet published by Takeshi Sakade

"3Ks" – *kyouiku* (education), *kenkou* (health), and *keizai* (economy), and this will be realized through digital tools. Specifically, based on the "e-residency" (e-residents) used in Estonia and other countries renowned for their e-state initiatives, we will first increase the number of people who have access to prefectural government and resident services in the form of "digital Fukui residents." Although there are some challenges, such as the need to authenticate individuals in cyberspace and the need for advanced technological infrastructure, which is still difficult to achieve with current Internet protocols, we are still working on this project.

In addition to this, it will also be necessary to gradually develop a system that enables residents to participate in politics using digital tools. In Europe, "e-cabinet," which digitally streamlines Cabinet meetings, has already been introduced in many countries with advanced digital governments. "e-voting" (in which voting is done through an electronic system) and residents' participation in creating ordinances and budgets, are also no longer just far-off dreams in Europe. If Japan is aiming for digital garden cities, then it should also develop such tools and systems at the same time.

Starting with a review of "Science 2.0," an era where convergence of knowledge didn't work

In considering convergence of knowledge, I think it is necessary to start by looking back at history to see why things aren't going well now. There is also the idea of "two cultures," or what C. P. Snow called "the disconnect between intellectuals in the humanities and those in the sciences," which led to the decline of the United Kingdom, but I take a dim view of the perception that such a split between the humanities and sciences created the current stagnation in Japan and set it back from being a nation of science and technology.

To begin with, convergence of knowledge used to exist. I call that era "Science 1.0." When that period was lost is a question of perception in the history of science, but I believe that, after the emergence of quantum mechanics in the 1920s, disciplines became more specialized and convergence of knowledge became more difficult to achieve. This era can be called "Science 2.0."

And today, if we are to once again promote convergence of knowledge as "Science 3.0," then it would be better to start by sorting out, summarizing, and reflecting on the challenges of the "Science 2.0" era when convergence of knowledge failed to achieve traction.

Convergence of knowledge lies beyond collaborations between closely related fields

There's another point that I would like to make that, although it is obvious, is easier said than done. Each researcher is doing his or her own individual research work, and I don't think that things will go well if we suddenly jump from individual research to abstract generalization or commonality, or if we try to forcibly combine projects. I think it is fundamentally necessary to link the characteristics with other characteristics and to then generalize.

It is very difficult to cross fields because each academic discipline conventions and system. As a researcher, my home turf is economic history, but my personal interests have led me to also include research on the aircraft industry. The aircraft industry is a field that is related to economic history, business history, and diplomatic history, so I cover all three of these fields, but it is very difficult to do so because I have to do prior research in each of these fields and because each of the academic societies and departments are different.

I think it's easier to cross academic boundaries if the fields are far apart, such as for professors of informatics and philosophy. As such, in order to promote convergence of knowledge, we have to create foundations for discussions in neighboring fields. If the fields are close to each other than these kinds of discussions aren't easy because of territorialism, dislike of those others who are so close to one's field, and conflicts of interest, but I think that working together in similar fields is important for convergence of knowledge.

I have been teaching economic history for about 20 years, but this year I started teaching business history, and, as expected, it is completely different. I am like an amateur, so to speak, so there are many new discoveries.

All specialists have a sense of professionalism. However, in order to promote the convergence of knowledge, it is difficult to be a professional and to also be at the forefront of one's own field. As amateurs, we need to have the spirit to compete in these kinds of interdisciplinary arenas.

Takeshi Sakade

Takeshi Sakade was born in Chiba Prefecture, graduated from the Faculty of Economics at Kyoto University, and then withdrew from the Graduate School of Economics. He has a Ph. D. in Economics. He specializes in international political economics, economic engineering, and world history, with a focus on the history of the Western aerospace industry, the history of the nuclear industry, missile strategy, and the nuclear non-proliferation regime. He is the author of "The British Aircraft Industry and American-led Globalisation 1943-82" (Routledge, 2022), edited "Introduction to the American Economy Q&A 100 " (Chuozeikai-sha, 2019), and supervised the translation of "Warfare State Britain: 1920 - 1970 " (Nagoya University Press, 2017).

no. 09 Takayuki Shiose

Associate Professor, The Kyoto University Museum

Think productively about how to live in a society with new technologies

Takayuki Shiose is an expert in creating spaces for creative dialogue and in "question design," which is also the name of his book. He has experience searching for knowledge in the humanities and social sciences, which were lacking in the system engineering education that he specialized in as a student, and, to present new technological alternatives (new perspectives and plans to replace conventional, mainstream methods), he says that the humanities and social sciences also need to be updated.

Question Design, by Takayuki Shiose

Ideals and fantasies create a resilient society

In 1920, a book titled "Japan 100 Years from Now" was published, in which 350 intellectuals predicted the future. The book contained predictions such as "Japan will be the world's number one textile manufacturing nation," "people will be given the right to vote from 18 years old," "there will be female Ministers at government agencies and university presidents," and "civilians will travel in space." As can be expected, the predictions are pretty hit or miss.

However, the important thing to remember here is that the expectations differ from ideals or fantasies. "Japan will be the world's number one textile manufacturing nation," for example, is a prediction. Expectations about the future are also influenced by the era.

On the other hand, voting rights and female Ministers at government agencies are ideals, while civilians traveling in space is a fantasy for the future. It took nearly 90 years, but these have all come true.

In light of these, I think that ideals and fantasies can be an incredible driving force for society. An environment in which ideals and fantasies can be firmly held is crucial for building a resilient society.

Recently, however, all we hear about are predictions based on evidence and rationale. I believe that the word evidence is used only to guarantee their own opinions, evidence is not for creating the future.

For example, if we aim for a carbon-neutral society and the only way to achieve that is to not drive at all, we should be prepared for that. Ultimately, I think people don't take predictions seriously because they don't believe in the evidence that is used to justify the predictions.

No one is sure what kind of life will lead to carbon neutrality. But, if we have to start acting right now, then I think that we should take about 10 years to test multiple indicators based on evidence and then we should all decide in public whether we want to proceed as is or if we want to change course.

Conclusions can be drawn after a period of time. The system for realizing an ideal society can be created in public over a period of about 10 years, so more time should be spent on future predictions for this purpose.

The "ability to assemble" is required for the country and government

The "ability to assemble" is necessary for envisioning a future society. However, there should be roles according to social standing, etc., and the "ability to assemble" is needed by those who formulate and implement policies, such as the country and governments. Given how roles are divided within society, it seems incongruous to ask citizens and researchers to have the "ability to assemble." Dialogue is certainly important, but it is only necessary when there is a firm division of roles.

To begin with, I also believe that researchers do not need to listen to society more than necessary. Especially for groups of very advanced scientists, like at the RIKEN and AIST research institutes who have a mission to breakthrough to the future, there should be things they need to listen to and things that they don't need to listen to.

Henry Ford famously once said, "If I had asked people what they wanted, they would have said faster horses," and the idea to "develop an automobile" probably would have never come up. In the same way, citizens do not always have a true "vision of the future they want to create," so I think it is suitable for top researchers, to some extent, to rush ahead without listening to the voice of society. To that end, the

country and the government need to have the capacity to allow reliable researchers to operate as they please.

Betting on the ideals and fantasies of top scientists may bring new possibilities to the vision of a future society

The humanities and social sciences also must be updated

When there are new technologies that have the potential to make breakthroughs for the future, I feel that there is a somewhat extreme division of roles in how we rely on the humanities and social sciences to implement these technologies into society. But it is also questionable whether the humanities and social sciences, as they are now, can present alternatives. For example, if you ask "What do you want to do with your smartphone" to someone who has never used a smartphone, you can't really expect a constructive answer.

Similarly, in a discussion that is predicated on the use of new technologies that have never before existed, I wonder if historical researchers can really present alternatives, even though they can offer advice from a historical perspective. To promote the convergence of knowledge, I believe that it is also necessary to update the humanities and social sciences from their current state, and I believe that humanities and social scientists who can ride along with the natural science perspective will be in demand in the future.

Any new technology will inherently raise legal issues. Conversely, it can also be said that anything that does not raise legal issues is not innovative, but what kind of position will the humanities and social sciences take when such technologies emerge? For example, if you are overseeing the legal affairs of an overseas companies that is continuing to take on global challenges, then you are responsible for drawing new lines in negotiations between legal issues and technologies, rather than making decisions based on existing laws. However, in the case of Japan, there is a tendency put the brakes on such things to prevent problems in light of current laws or to prevent damage to companies' past profits. While it is certainly essential to cling to the past, such thinking alone can also put the brakes on technological progress itself.

The way the humanities and social sciences are relied upon today is that they are expected to play a role in preventing natural science researchers without a sense of ethics from making breakthroughs. In reality, however, it is not uncommon for them to be refuted because they do not understand the substance of whatever cutting-edge technology is being worked on, and so they end up being dragged forward by accelerators on the technology side. In order to avoid this, I feel that we have the same faint societal expectations as before, namely, that such things might be stopped if we rely on the authoritative opinion of so-called "elders" such as humanities and social sciences professors. If so, then convergence of knowledge will not be nurtured no matter how much time passes.

One of the original tasks of the humanities and social sciences, I expect, was to "redraw the lines." To that end, I believe that we need researchers in the humanities and social sciences who can productively work with us to develop further attitudes about how we will live in a society that has access to new technologies.

Communication is an exchange of indices

In university, I entered the engineering department because I liked the Gundam series (which typically features giant robots), but because it would have been too difficult to make one right away, I decided to start by creating a communications robot.

When I began my research, I felt that the models of human behavior and consciousness that engineering and science attempted to capture were exceptionally thin. In search of the knowledge I lacked in the humanities and social sciences, I happened to participate in the historical Nishida Philosophy Study Group and other organizations when I was a student.

My doctoral dissertation dealt with the study of the transmission of skilled techniques, and there is a culture of "silence and not talking" when it comes to the transmission of these techniques. From an information science perspective, this is not good. You could say the amount of information is zero, but it is still conveyed. However, there was also a proper meaning to these "silent things," such as the idea that if something is directly taught, it will hinder an apprentice's training.

I learned through this experience that communication can be better explained if it is seen as merely exchanging indices, rather than actually conveying information itself. In other words, communication is not possible without providing words that, from your experience, recall something that the other person has experienced. If we consider this to be the original form of communication, then it leads to the collapse of the communication model of "conveying information" that information society is based on.

In such situations, instead of relying on models, I am convinced that there is a lot of knowledge in the humanities and social sciences and that we should be able to face people with sincerity and continue to look at them. I also expect that the humanities and social sciences will once again surface these ideas.

Takayuki Shiose

Takayuki Shiose was born in Osaka Prefecture, graduated from the Faculty of Engineering at Kyoto University, completed the Graduate School of Engineering at Kyoto University, and has a Ph. D. in engineering. His specialty is systems engineering. Since July 2012, he worked as Deputy Director in charge of technology strategy at the Industrial Technology Policy Division, Trade and Industry. He was then reinstated to his former position. He is now in charge of numerous workshops, such as innovator development training at companies and career education workshops at elementary, junior high, and high schools. In 2017 he was awarded the Minister of Education, Culture, Sports, Science and Technology Award (for promoting understanding in the fields of science and technology). His publications include "Question Design: Facilitating Creative Dialogue" and "Inclusive Design: Participatory Design to Solve Social Issues " (co-author for both books, Gakugei Publishing).

no. 10

Kazuya Sugitani

Lecturer, Faculty of Policy Studies, Iwate Prefectural University

Creating the future through the interactions of scientific evidence and the world of citizen's lives

Kazuya Sugitani researches on Evidence Based Policy Making (EBPM), which uses statistical data and various other indicators to determine and implement effective and efficient policies. We asked him about regional futures, the role of researchers in policy making, and convergence of knowledge from his unique perspective of being born in Japan's Heisei period.

EBPM that supports people's ordinary lives

After coming to Iwate Prefecture last April, I have come to believe that there should be a society in which local communities can become self-reliant and self-supporting. Local communities have a "normal life" that has been lived by the people who reside there, and this point of view should be more important for the local people than stories of "such a bright and gorgeous future." I have come to believe that scientific evidence and proof should also be used for the sake of societies that continue to live as they have in the past.

In theory, we know that each region has its problems. By living in a region, you are able to gain a first-hand understanding of how difficult it can be to deal with, say, heavy snowfall, and I think this kind of understanding is very significant. Rigorous evidence alone isn't any good, but, on the other hand, if there is no scientific basis that all you have is intuition and experience, which is also bad. If the experiences of the local people can be utilized in policy making, then the evidence will become richer, so how can we create equal relationships that positively influence each other? In my opinion, there is no need for policy evaluation or EBPM unless it can take the lives and daily lives of people in an area and help to make them easier.

To realize EBPM that is rooted in people's daily lives, I feel that we need to study more about local issues.

Scenarios can only be put together by researchers

As an approach for the future, I think it is difficult to take the stance that "Science and technology will realize that future that people want to bring about." On the other hand, if you ask people, "What kind of future do you want," they probably won't provide you with any specifics. And the reason for this is that, for most people, their most pressing concern is what they are going to eat tomorrow. There probably aren't many people who can even think about what they want to do with society.

In the children's cartoon *Doraemon*, the "four-dimensional pocket" (an essentially magical pocket that lets the user store and retrieve almost any item, etc.) that Doraemon has can be effectively used because Nobita (one of the main characters) has problems and specific desires. If the pocket were given to someone who doesn't really feel the need for it, then at most it they would probably use it as a portal to go to work, and nothing new or interesting would start.

As researchers, I believe that what we can do is ask the fundamental question, "What is the future, and what is our vision?" Initially, we can do this by involving only interested people. I don't think that we need to stretch and strain ourselves to listen to the voices of a lot of people. If we put too much thought and effort into it, then we will just end up exhausted just from the formal workshops.

The only scenario for the future that citizens alone can consider is a 10-year plan for a shopping district. That is, of course, essential and necessary, but only experts can put together something on a larger scale, such as a mega-scenario until the year 2050. Therefore, to carry out that scenario, it is also necessary to exercise a certain kind of authority by involving many people in the name of the university and directing them toward the goal.

We must always be aware of this approach, but we must be careful not to be overbearing. However, this is easier said than done.

Making the abstract into the concrete through dialogue with local governments

When it comes to the phase where you have to take the scenario that you sketched out and communicate it to civil society, I think it is also important to talk to the so-called Generation Z as well as to elementary, junior high school, and high school students. I actually used to make fun of this conventional talk about how "young people change the future." But then I thought, "Why can't the conversations be that easy?" Such as when environmental activist Greta Thunberg asked "How dare you?!" about adults' irresponsible expectations towards young people.

However, as I have immersed myself in communities and become involved with various people, my thinking has gradually changed. As I mentioned, once we are out in the world, we have no time to think about the future. Because we are the ones who make policy, we tend to lack a broad perspective. It is tough to hear what young people are thinking. There are some efforts that consciously try to see

what young people are thinking, but they don't always go well.

It's important to talk about big things like solving social issues, but to start with you can just have fun conveying it that idea as part of learning about SDGs – that kind of thing is enough of a foothold.

Additionally, I think that it would also be good if there is a trend to have young people come up with ideas for the future and try to incorporate them into policies. Many local governments are now also looking for ideas from a new angle. I've heard that some local governments in the process of formulating comprehensive plans have been in a situation where they say "It's good to receive instructions on how to use SDGs, but we are at a loss as to how to organize them." So I think that it would also be effective to combine the activity of formulating comprehensive plans with the action of creating scenarios for the future.

We talk with people in various municipalities and then increase the concreteness of the scenarios and visions so that they align with the local community. Then it becomes more realistic by incorporating what was originally an abstract story into the community's life. This incorporation process of going back and forth between the concrete and the abstract is a very interesting process.

I am from the Graduate School of Human and Environmental Studies at Kyoto University, which is dedicated to fostering interdisciplinary intellectuals. Since the end of the 1980s, when this graduate school was established, there have been calls to deal with how subdivided and specialized academic disciplines have become. In reality, this trend has only increased, and the increasing subdivision and specialization has not yet been eliminated.

I can understand the emphasis on convergence of knowledge and be interdisciplinary in such situations, but I am also a little bit confused when these ideas are referred to as "magic hammers" that can solve any problem. I think that the ideal way is to think about things in research and in actual life, while everyone is working on the issue, and then, before you know it, you will have convergence of knowledge.

Interdisciplinary and Internet culture are the norm for the Heisei generation (born 1989 to 2019)

I feel this way may have something to do with my generation. I was born in the Heisei era (1989 to 2019), and I remember the 2011 Great East Japan Earthquake quite well, and I was also of the generation that was already a working adult when COVID-19 happened. This is also a generation that is familiar with the dawn of internet culture and is familiar with social media such as the "2ch message board" and with flash videos.

One of the characteristics of the generation of academics who have experienced these times of significant change is that many of them have interdisciplinary experience. They are not hesitant to talk with people from various fields and to work across disciplines. They have, by default, received training in communicating their research fields in an easy-to-understand manner, and as such it is easy to share with them. In this sense, there may be a generational impression about convergence of knowledge.

In this generation, many researchers who are enthusiastic about social activities and about posting on social media. I've experienced internet culture, so I guess I've naturally learned how to do things.

From that point of view, I feel like it might be a good idea to work with influencers to spread government plans and scenarios that researchers draw up. If influencers like this make a video on TikTok or similar services, then the information can spread extremely quickly.

These types of ideas are often thought of as frivolous because of how easy and popular they are, but I think it can be said that they provide a clue to consider things from various angles, rather than splitting hairs over details from the start. With the exception of deep discussions, I think that this is an important approach.

Interdisciplinary collaboration based on relationships of trust

I think it is important to collaborate in different fields and to do so with people who have a mutual relationship of trust. However, that alone will result in a narrow network, so expanding connections through trusted acquaintances would also be good. In doing so, we need to select people with similar perspectives and who are likely to understand the essentials of what we are discussing carefully.

I think that this is also significant to have a place for interactions between researchers in the natural sciences and researchers in the humanities and social sciences, to deepen their mutual understanding. My field is good at building networks and communities, but I think that it is important to expand this to include researchers in the sciences and also to build better relationships.

We don't have an opportunity to candidly speak about our basic research to begin with, and, as a personal vision, in the future I would like to work on research that evaluates other research and development.

Even in evaluation research, evaluating science and technology is a challenging topic. There are very few cases of full-fledged evaluation efforts in the basic research phase that include stakeholders in both evaluation and policy fields, so interactions with people doing this basic research are one of my major concerns.

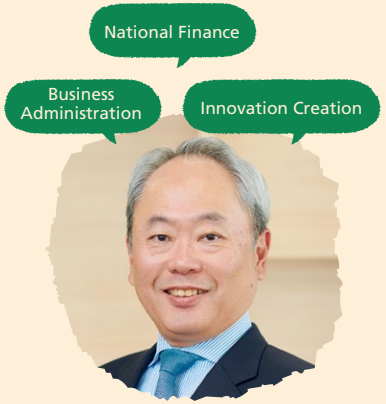
Sugitani Kazuya

Sugitani Kazuya was born in Osaka and graduated from the Department of Public Policy in the Faculty of Public Policy at Kyoto Prefectural University. He completed the doctoral course at the Graduate School of Human and Environmental Studies at Kyoto University, and then withdrew from the doctoral program. He has a Ph. D. in Human and Environmental Studies. After working as a part-time lecturer at Kyoto Bunkyo University and as a researcher in the Graduate School of Letters at Kyoto University, he is now a lecturer at the Faculty of Policy Studies at Iwate Prefectural University, specializing in public policy. His publications include "Is Evidence Necessary for Policy? " (Minerva Shobo), his thesis "An Essay on Kyosei Society and Democracy " (collected in "Symbiotic Society Systems Research" Vol. 13, No. 1), and "What COVID-19 Poses to Public Policy Studies " (co-authored with Yukio Adachi and published in "Public Policy Research" No. 20).

no. 11

Kazuhiko Toyama

Chairman, Industrial Growth Platform, Inc. Group



Designing rules for motivation, towards "local digital Fordism"

Kazuhiko Tomiyama is known as one of Japan's leading management consultants, having been involved in numerous corporate revitalizations as the head of a consulting firm and COO of the Industrial Revitalization Corporation of Japan. We asked him about the challenges of Japan's stalled economy and the approaches necessary for Japan to once again create innovation and help people live a life of well-being.

A wellbeing crisis in a double sense

The Japan of today is divided with vertical walls in every field. There are geographical divisions, and divisions at social conceptual boundaries, such as for industries and companies.

One reason for this is that "hardware-type" industries, which were central to the industrial structure until the 20th century, were well suited to vertical division. Because of the need to manufacture products in large quantities, companies become closed, and even when expanding production bases overseas, it was more profitable if there is an income gap with the country you choose. In other words, the disparity was more desirable, and it was more convenient for the company to codify a "siloed" structure.

In the past, the United States was the first to achieve great success with mass production and mass consumption, and a great middle-class society was born. This is how the "100 million people middle-class era" of Showa era Japan (1926 to 1989), when people enjoyed middle-class wellbeing, came into being.

Japan's success, to the point of being called "Japan as Number One," pushed the United States out of its position. However, the GAFA (acronym for Google, Apple, Facebook, Amazon) model made a comeback with a new way of fighting born out of freedom. This cyberspace business model steers clear of the disadvantages of siloed structures, and the United States regained its growth potential. However, the problem here lies in the fact that the source of value creation at these companies is "brilliant and intellectual people," which means that these companies are not creating employment for the middle class. Only a few highly talented people, and the wealthy who can access through investments, will benefit. On the other hand, the types of industries with middle-class employment that supported Japan's growth have moved to other countries with lower wages due to globalization.

In the midst of such changes in the industrial structure, the United States, which succeeded in shifting to digitalization, faced the problem of disparity, while Japan, unable to escape from the industrialization model, became impoverished as a whole. Both are in a situation where well-being cannot be produced, so it is a crisis of well-being in a double sense.

Motivational rule design and human resource mobility toward an ideal future

I believe the first thing we need to do to move towards our ideal future is "design rules" to motivate people. Rules have a benefit if you follow them, and a penalty if you break them. It can be said that rules are one of the mechanisms for motivation.

For example, about 100 years ago, when socialism was on the rise and capitalism was in crisis. One of the factors that helped capitalism survive the situation was "Fordism." This is a system employed by the Ford automobile company, which converted the majority of the workers into consumers by increasing the productivity of the factory workers and then returning the profits to wages.

This led to the sale of many Ford cars and the company's growth. This investment distribution system is a revolution born of the convergence of knowledge of Henry Ford, an entrepreneur.

So how can we bring about a social revolution in contemporary society? Rather than a mere shift in power, we now need a redesign that maximizes the inclusive well-being of society as a whole as a result of freely unleashing the social system and people's desires.

To this end, it is necessary to break down the vertical silos of both large and small companies and to change the social structure to rules that will allow the mobility of human resources to prevail. It is very important to foster a large number of intellectually creative human resources who can bring about innovation and to "stir the pot" between academic fields, or between academia and the private sector.

The key to this is individuals with Ph.D.s Unfortunately, doctoral programs in Japan remain a process for training university teachers. On the other hand, in Europe, the United States, and China, etc. Ph. Ds are only one stage of vocational training, becoming a university teacher is only a part of the process.

A Ph.D. degree can only be obtained if you can set up your problem, develop a hypothesis, and prove it. If your hypothesis is not novel, it will not be well regarded. In other words, people with a Ph.D. are overwhelmingly helpful in

the industry in situations where they compete on the basis of intellectual creativity, especially when the center of the global industrial structure shifts. That is why, in Europe and the United States, many people in industry and government have a Ph.D. In Japan, too, creating an environment in which such human resources can fluidly play an active role is necessary.

Additionally, innovation can only occur with a common language. However, in Japan, this is a significant barrier. To resolve these issues, we need to create a space where people can work both globally and locally and a system that is as dynamic and optimally fluid as possible.

As dynamism emerges, new wisdom will also surely emerge. If we can design incentives so that this wisdom is directed toward maximizing inclusive well-being, then things will go in the right direction.

Local Fordism

I believe that the capitalist model of mass production and mass consumption of equipment-intensive and tangible assets should be discouraged. The same applies to all social systems in Japan, including education, which was established around this model.

Conversely, the model I believe should be encouraged is "local digital Fordism." This is a term I coined, but something like Fordism should also be done for local industries. The idea is to create a cycle in which profits are returned to the people who worked to create those profits, which are then used for self-improvement and consumption in local economic zones, which accounts for 70% of Japan's GDP and 80% of employment.

So far, no one in the world has been able to realize Fordism that skillfully uses digital technology in a local space. It is important to aim for the realization of more inclusive well-being in the realm of business.

However, well-being is an extremely subjective concept. So, in the end, GDP is often used as an index for the greatest common denominator, but it has limitations because not everything can be included in economic transactions.

Therefore, I believe that one option is to think of well-being in terms of concepts such as "social common capital" or "public commons," as proposed by economist Hirofumi Uzawa. For example, air, health, or something intangible that is not part of individual transactional acts.

In fact, this kind of "intangible, experience-oriented" value is making progress in Japan's local industry. The branding for agriculture, forestry, and fisheries industries falls into this category.

However, businesses are always born when there is new value and innovation. If things continue as they are now, goods-oriented global industries will become a profitable segment and even green innovation will end up falling into the idea of just "creating new batteries." The perspective of enhancing well-being by making things into a value is important, but if we become monetarily poor, then we will not naturally feel well-being, so rather than limiting ourselves to the dichotomy between public and private sectors, we must think about those responsible for the public commons.

Multipolar and concentrated urban design

When we think about the future, we cannot ignore the possibility of a significant natural disaster or economic crisis. Unfortunately, it is difficult to imagine that no one will be sacrificed in such a black swan-like event. How much risk are we willing to accept? If we cannot make that distinction, then we will not be able to take productive measures. The only way to do this is to prioritize and prepare in advance.

In terms of preparedness, we must also change the way we live in Japan. The "Vision for a Digital Garden City Nation" is now being discussed, but there is a risk of falling into "multi-polar dispersion" as a result of avoiding unipolar concentration. We should instead aim for "multi-polar concentration." Japan's population is already declining, and the logistics of supporting everything, including national security and resilience, have already become overstretched. If people were to live separately in this kind of way, then we would have to make wide-scale societal reinforcements.

This is an issue that is very much related to economic rationality, or the efficiency of resident services, to the sustainability of medical and nursing care. We have been promoting a national land plan to "increase residential areas" all along, but going forward, and we will have to seriously work on reducing residential areas and promoting the clustering of people in the safest places possible.

Population decline is talked about like a tragedy, but in Japan, in the early Meiji era (1868 to 1912), there weren't even 35 million people. Time is like a pendulum, and history continuously evolves as it repeats itself like a spiral. As such, it may be necessary to reexamine how things were in the past and develop the idea of layering those past ideas onto modern technologies. Therein lies the clue to convergence of knowledge.

Kazuhiko Toyama

Kazuhiko Toyama was born in Wakayama Prefecture and holds a law degree from the University of Tokyo, a Master of Business Administration (MBA) from Stanford University, and has passed the bar exam. After working at the Boston Consulting Group and serving as the CEO of Corporate Direction, he participated in the establishment of the Industrial Revitalization Corporation of Japan in 2003 and assumed the post of COO. In 2007, after the Industrial Revitalization Corporation of Japan was dissolved, he stablished the Industrial Growth Platform and assumed the position of CEO, and from October 2020, he became the Chairman of the IGPI Group. Also in 2020, he established the Japan Platform of Industrial Transformation and assumed the position of CEO. He is an outside Director at Panasonic and Chairman of the Public Policy Council of the Japan Association of Corporate Executives. He also serves as a member of the Ministry of Finance's Fiscal System Council and as a special member of the Cabinet Office's Tax Commission, among other government-related committees. His recent publications include "Corporate Transformation: Rebuilding Japanese Companies" and "COVID-19 Shock and Survival: Japan's Economic Recovery Plan."

no. 12

Kaori Hayashi

Executive Vice President and Professor, Interfaculty Initiative in Information Studies,
The University of Tokyo

Focus on what kind of journalism the mass media creates

After working as a reporter for a news agency, in academia Kaori Hayashi has specialized in journalism and media theory. She has been Executive Vice President at The University of Tokyo since 2021, and is also working hard to promote diversity at the university. We talked to her about the current situation with and the issues surrounding the media in our increasingly information-oriented society, as well as the conditions for realizing convergence of knowledge.

Put the brakes on the mass media's commercialism

I believe that today's mass media is in a very tough situation. The fragmentation of society and the increasing complexity of politics are making it more difficult to report the news, and on top of that, the business models of yesteryear are crumbling, and commercialism is running unchecked. Commercialism is a distant cause of content leveling off – that is, there being the same stale content no matter which TV station you watch.

In addition, mass media have developed under free market principles in the context of modern and contemporary capitalism. In short, freedom is a fundamental value standard. However, taking advantage of this, I feel that we have come to this day without the media's social responsibility being fulfilled. We have less than 30 years to 2050, so how to put the brakes on excessive commercialism is a significant issue.

Possibilities and challenges of the internet

The advent of the internet has driven the media's role in society into an even more difficult situation. In the case of the mass media, closed "professionalism" has become a particular bastion as a bearer of public nature. In the 20th century, professional associations for newspapers and films were created for professionals, and they played roles such as providing professional training and having codes of ethics.

On the one hand, in the case of the internet, everyone can participate and speak out, not only in the traditional media but also in the general public. This is of course a good thing, but on the other hand, the responsibility for speech is left to the individual.

That freedom has allowed hate speech to hate speech to proliferate, women and minorities are being attacked, and fake news is now being used as a political weapon between nations. Some kind of environmental maintenance is necessary.

Now, platform operators such as Facebook are also shifting towards monitoring and regulating speech, which was unthinkable in the past. In the United States, there is concern about the adverse effects on minors' bodies and minds, especially for vulnerable groups such as girls and young women.

The need to speak and act responsibly has been stated before. However, because of the freedom of the internet, speech spreads quickly and is difficult to control. Even if a national system is established, information can spread across borders in the blink of an eye, and each citizen must be aware of this.

Media's possibilities, and things to pay attention to

The mass media is an institution that developed along with war, and it still has strong male-majority centrism. From a capitalist perspective, women have also had a history of being commodified and consumed.

In contrast, the internet has given a voice to the oppressed and can counter these situations. But this is by no means just a "minority resistance." It will be necessary for society as a whole to move forward. Innovation does not occur without including diverse voices, and we can easily miss the 2050 target we aim for.

The internet has the potential to reach needs that the mass media cannot. The #MeToo movement, for example, spread across borders through social networking sites. Some studies have called this "connective action" (a play on the term "collective action" that is used to describe social movements), and when people's thoughts are connected online, that can be a powerful force in society.

However, depending on how it is used, this kind of thing can also be scary. Everyone should learn and be aware of the appropriate way to use it.

Information education also requires a deep understanding of the shift to an information society

From 2025, the subject of "information" will be added to the standardized university entrance exams in Japan, but I have

some doubts about the current plan.

It is necessary for us to train programmers who can spread their wings and go from Japan out into the world, but at the same time, we must also consider how information technology should be used in society and its fair social uses. I think it is necessary to nurture an environment in which Japanese people can have a deep understanding of the information society and a sense of crisis. It's important to do both of these things.

Additionally, to generate innovation, I believe it is essential to study what the social sciences call "critical theory," and the critical thinking that goes along with it.

Rather than just praising technological development, I hope that people will be able to consider what we are lacking and what should be emphasized in the current situation for Japanese society, looking at it from a historical perspective and with a methodology such as via comparisons with other countries. In terms of technology, the background behind the development of currently available information technology and the interests of governments and companies at the time should be clarified, and then, based on this information, we should consider the future of the information society. It is from this that convergence of knowledge for the information society will be born.

Convergence of knowledge should question the interactions between research and society

I have two thoughts about how convergence of knowledge can be created.

In Europe, after becoming a postdoctoral researcher, I was often asked about the social impact and significance of my research, but in Japan the demand for these types of questions is weak.

Even when obtaining research funds, EU countries emphasize the importance of societal outreach in the application forms. This should be the case in Japan as well. As an interface for interdisciplinary research collaboration, if we don't equally care about how we relate to society, the integration of the humanities and the sciences will not progress.

Another thing is that I think researchers need to be able to answer a simple question, "Why are you doing your research?" For example, when obtaining research funding, it is common today for proposals to be reviewed by members of the same research community, but why is this research necessary for people outside of the research community, and why do we need to conduct this research now? I think that people need to be better prepared to explain these things.

However, the two points I have discussed so far may, unfortunately, become a mere formality in fomality in today's Japan. As such, what is even more necessary is to overcome the mindset of affirming the status quo that "things are fine as they are." The sense of urgency that "it will be bad if things continue as they are" triggers people to think "we need to change." In that respect, those who are in the minority already have a feeling of crisis, and so they have ideas. Which is to say diversity is key. We all have to backcast from the future we want and share in the critical future.

In order to bring about these changes, it is essential to be open to input from the outside, from outsiders. We cannot see many things when we are wrapped up in them, so examples from other countries are practical.

Cultivate expertise and create unique journalism

In the 21st century, I believe that journalism is still expected to function as "eyes from the outside." If it can continue to serve as the driving force for such social change, then journalism can still play an important role.

After reaching its peak in the 1990s, today's mass media has seen a steady decline in circulation and viewership since the 2000s, and a decrease in income. Despite this, they are still doing the same general things as before. As a result, journalists are becoming increasingly busy, and there is a noticeable lack of study and training. There is also the undeniable feeling that journalists have started to look up information on the internet, putting together the opinions of experts with contrasting views and providing safe information.

I believe that each company must discuss what the Japanese mass media are for and what kind of journalism they want to create in the future, and then narrow down their focus to developing human resources. This also applies to reporting on and covering scientific fields, and I think that it would be good if Japan had a group of journalists with more specialized knowledge. Instead of being off to one side, it would be good to steer the direction toward fostering expertise and creating distinctive features.

Kaori Hayashi

Kaori Hayashi was born in Aichi Prefecture. After working as a reporter for the Tokyo branch of Reuters, as an assistant at the University of Tokyo Institute of Social Information, and as a visiting researcher at the University of Bamberg in Germany (Humboldt Foundation), she is now a professor at the University of Tokyo Graduate School of Interdisciplinary Information Studies. Since April 2021, she has been an Executive Vice President at the University of Tokyo (Diversity and Global Affairs). She has a Ph. D. in social information, is the leader of the "AI and Society" project from the Beyond AI Research Organization at the University of Tokyo, and is a commentator for the Asahi Shimbun newspaper. She specializes in media studies, including advocating for constructive journalism. She is also the author of numerous books, including "Media Mistrust: What is Being Question" (Iwanami Shinsho, 2017), "Women and Children: The Ethics of Journalism Care" (Iwanami Shinsho, 2021; new digital edition).

no. 13 Tatsushi Fujihara

Associate Professor, Institute for Research in Humanities, Kyoto University

Realizing a mundane future through autonomy

Tatsushi Fujihara is engaged in historical research at Kyoto University, focusing on the history of agriculture and the environment. He has argued that our vision for the future must be rooted in people's daily lives, and has presented proposals suggesting that autonomy by local people is necessary to realize such visions.

A modern society of "hands-off democracy"

Technology is, of course, important in solving social issues. However, I do not believe that our vision of the future should be a technology-driven one in which flying cars fly around. Technology only truly lives when it has a vision. Looking towards 2050, we need to talk about a more mundane future instead.

When I talk about a "mundane future," for example, I mean a future where everyone can live until 18 without going hungry or a future where women's rights are not threatened. These may seem like simple or modest goals at first glance, but no country has been able to achieve them. I believe that the highest priority should be given to a society in which the "wholesome and cultured living " written in Article 25 of the Japanese constitution can be taken for granted.

I wouldn't turn down flying cars if they are necessary to support such a minimal lifestyle, but unfortunately, I don't think that they are. There are economic effects, but I think conventional policies that have been prioritized in the past have reached a standstill.

I feel that the Japanese education system is also one reason why it is so difficult to envision a future rooted in our lives. Japan confuses "political neutrality" with "apolitical." It is our natural right to obtain unbiased information, but this is conflated with "apolitical" to avoid making children think about political matters. Politics is thinking "What will we do with our taxes for the next 10 years?" We pay quite a bit in taxes, but many people never discuss how those taxes are actually used. Taxes are the future, so to speak, so it's actually a bright topic to talk about. But, as long as people see them as "something that is taken," then I don't think we will be able to talk about the future.

As a result, we rely on politics even though, deep down in our hearts, we don't believe that "if a problem arises, our leaders will solve it." I call this state of affairs "hands-off democracy."

"Autonomy" will be the foundation for creating the future

In the future, I think we should aim for "small government," which is different from that in so-called neoliberalism. The state should exist as a community, and then small community units should discuss and decide how to live together, becoming autonomous. In the truest sense of the word, I believe this is the foundation on which we will build our future together.

Surrounded by the sea and consisting of several islands, I believe Japan is in a geographical environment that will allow us to lead the world in creating a society in which these small units are autonomous, in everything from food to childcare. However, today's Japan is seeking a larger model, and it seems that it is drawing nearer to the bad points of both American democracy and China's fully managed society.

Another thing about the future vision is that people underestimate the disparity between Tokyo and other regions. In Okinawa, for example, there are great expectations for a society that is not bothered by the noise of military aircraft. I think it is necessary create more local ways of envisioning the future based on the compelling problems in an area.

Of course, the government has an important role as a coordinator with a bird's-eye view of local governments and regions. As for the problem of autonomy, there will always be some situations, to a greater or lesser degree, in which improving one's region disadvantages the surrounding areas. There is also the risk that issues, such as the rights of foreign nationals, will develop into international issues. I would like to see the national government play a role in coming to the rescue when such imbalances occur inside and outside a region.

History, market, and food that nurture autonomy

There are three keywords that foster autonomy.

The first is "history." Every land has its history, and knowing that history brings a sense of self-affirmation. Just walking around with someone familiar with local history, listening to their stories, and knowing the context of the area makes me feel so much richer. I believe that listening to the stories of the people who live in an area should be the foundation for making the community thrive.

The second is "market." Markets are places to exchange things, but they can also be places to exchange knowledge. If we can open a market regularly and create a place where local producers and consumers can gather, then it will support us in discussing the future from the bottom up. If you create an environment where it is easy to come up with ideas, then exciting things will definitely happen. I think that we should

believe in the creativity that so-called "ordinary people" have.

And the third is "food." In French, the characteristics of a production area where crops grow are called terroir, and Japan is also full of terroirs. For example, in my hometown of Shimane Prefecture, there is a red pickled turnip called 'Tsuda turnips,' but many locals don't know that it's unique to the region. However, its existence supports the unique culture of regions in the shadows. "Food" should be a theme that everyone can discuss, and I think it would be interesting to talk about the future of a region centered around its terroir.

Are we underestimating local knowledge?

What I would like to see technology address are architecture and urban design. This is because communities need spaces where people can easily gather together and where they don't feel stifled by formality. People from a variety of backgrounds will naturally gather in such places. Only architects can create mysterious spaces where anyone can casually be there, including a parent pushing a stroller alone, homeless people, or the elderly. It is precisely these situations that I believe technology should be used.

However, I feel there is too much of a drive to make profits via technology. For example, visions such as "The kind of future that can be realized by using AI" is often put forth, but even without using AI, I think that you can still create a very intelligent group just by gathering together three farmers. To borrow the words of the scientist Yukio-Pegio Gunji, this is "natural intelligence."

The same is also true of smart society. In the field of agriculture, where I specialize, the visions in recent years have all been about smart agriculture, but, at the same time, I think that we should also be thinking about other approaches to the future.

We are endowed with knowledge that has been accumulated in our local climate and region, so-called "indigenous knowledge" and "local knowledge," but I believe that we are now too often neglecting this knowledge.

It is, of course, important for a nation to lay out a vision for the future. But it should be something simple that can be broadly understood, and at the same time, something that people will remember. For example, I would like to see the state gently support a message that appeals for inclusiveness.

Convergence of knowledge lies beyond issues of everyday life

I see the role of the humanities and social sciences as "introspection," in which we reflect on our conduct. This is something that people really don't want to do. But we can't discuss the future without knowing our own failures and mistakes. It is human to do things the same way over and over again. Presenting what we have learned through such introspection is an essential factor of what is expected of the humanities and social sciences.

I also believe that, when considering convergence of knowledge, it is important to study home economics. In my opinion, more time should be spent on home economics in all elementary, junior high, and high schools to nurture students' ability to live, and that convergence of knowledge can only be based on this. This is because science should only exist as an extension of daily life and living. It is important to build on a foundation of knowledge about the world of home economics and about food, clothing, and shelter. On top of that, I believe that convergence of knowledge will not arise unless we acquire knowledge from the specifics of our daily lives.

Kaneichi Yoshioka, an agricultural scientist who clarified the cause of itai-itai disease (mass cadmium poisoning caused by industrial waste) that once spread in Toyama Prefecture, did research to teach individual patients about the causes of the disease. He read history books from the folklore point of view about what the patients were eating, and hypothesized that the cause was the fish living in the Jinzu River system. He then collected fish, ground them up to determine how much cadmium they contained, and revealed that the Kamioka mine from Mitsui Kinzoku Mining Company was the cause.

In other words, I think that convergence of knowledge is about first having an awareness of problems related to daily life, and then using a variety of knowledge to try and solve those problems. The various academic disciplines are heterogeneous, and unless there is a common awareness of the issues that connect them, convergence of knowledge cannot be achieved by simply bringing together researchers in the humanities, social sciences, and natural sciences.

Additionally, I would like to propose that the method for establishing common awareness of issues should be entrusted to researchers' autonomy. I don't intend to focus on the humanities and social sciences, but I feel that the current situation tends to be one in which the government and companies set many problems. And in terms of evaluations, the culture of report cards is still deeply rooted both in Japan and in universities.

I would like to see more appreciation for research conducted by researchers who freely set their own problems without being judged by anyone, and in fact, there is plenty of excellent research that involves local people. I would like to see a culture that accepts such things.

Media should examine over the long term

Another thing I would like to see change is the media. When the media takes up issues, I would like to see them examine it over the long term. For example, an issue like young caregivers (junior high school and high school students who are heavily involved in caring for sick or elderly family members) cannot be fully resolved in just a year or two, no matter how you look at it, so I would like the media from the beginning to take the attitude of forming reporting teams for 10-year periods.

Additionally, if the media is going to ask researchers their opinions, then I would like those statements to be dealt with over the long term, and to be thoroughly examined. If the media becomes involved in an issue, I would like them to throw themselves into it. Researchers will always have a background to what they are saying, but seeing it turned into one-and-done soundbites is a bit painful.

However, this is also true for universities. They will hold a flurry of symposiums, but the effort and energy do not continue afterward. I feel it is necessary to break down barriers with the community and co-create the community's future with so-called ordinary citizens.

Tatsushi Fujihara

Tatsushi Fujihara was born in Shimane Prefecture, and in 2002 he left the Graduate School of Human and Environmental Studies at Kyoto University. He specializes in agricultural history and environmental history. His major works include "The Nazis' Kitchen " (Kyouwa Koku, winner of the Kawai Hayao Prize), "The Philosophy of Decomposition" (Seidosha, winner of the Suntory Prize), "Eating Connected by Relationships" (Mishima Publishing), and "Historical Study on the Principles of Agriculture" (Sogensha).

no. 14 Misa Matsuda

Professor, Faculty of Letters, Chuo University

Striking a balance in society from a perspective that questions the obvious

Misa Matsuda, a sociologist and author of "What are Rumors ?" has been conducting research focusing not only on the information content of communication, such as "truth" and "accuracy," but also on its media nature. As the online society is taking root at an accelerating pace due to the impacts of COVID-19, what should communication and society be like in the future? We also asked her about the value that the social sciences can bring.

"What are Rumors?" by Misa Matsuda

The problem is a situation where "alone" is a problem

In Japanese there are buzzwords such as *commu-sho* ("communication-impaired") and *bocchi* ("alone"), and I feel that today's society has gone too far in saying that communication is important. Because the number of service jobs has increased so dramatically in the industrial structure, and because an overwhelming number of jobs have come to require face-to-face interaction with people, poor communication has become a problem.

Of course, young people today value their friends and want to get along with them. The times and the tools have changed, but this part remains the same. Rather, the problem is the very situation in which "alone" becomes a problem. It's not just a problem for individuals, and society will become very painful unless we create a social system and a common sense where we do not force communication.

I think it is important to use science and technology to create places on the internet to solve the problem of "alone." However, it is also necessary to have discussions about how to hold back from going too far and not only pursing "what is possible." I think it would be desirable to create a social consensus in this way.

Excessive communication leaves democracy to others

While it is convenient to be connect online 24 hours a day, anywhere in the world, we are increasingly caught up in situations where we do not want to be connected. This is obviously overcommunication, and it is also very time consuming. In other words, a network society is a very annoying society in the sense that essentially everyone has to get involved. If we become a society where people have to stay connected all the time, then everyone is going to eventually collapse.

I have been researching communication tools since pagers first came out, and I find that most people become dependent on pagers, cell phones, or smartphones during adolescence. Part of the reason is that they try to maintain relationships with their friends through communication, but their time for and usage frequency of these devices decreases in adulthood because they can't always find enough time. In other words, this means that there is a certain correlation between relationships and how people spend their time.

But now, excessive communication is taking up all our time. This means that we have to sacrifice something, and, for example, we no longer have the time to think about society.

I was in Taiwan recently, and the debate about wearing masks and using people's behavioral record was not only argued in TV debate programs between the ruling and opposition parties, but also on the streets. In a sense, I think that this is the way that democracy should be, but it is also very time-consuming.

Democracy is fundamentally kind of troublesome because it takes time. Discussions about society should be our own affairs, but, if too much time is take up in daily communication, then we may end up entrusting such discussions to other people thinking that we are not harmed. In the long run, that is not a desirable state for society.

Relationships are important, of course. But I believe that the ideal future will be a network society in which people can choose to have moderate relationships and how to spend their time.

Basic knowledge is necessary to ask "why"

Recently, I have felt that fields such as "digital humanities (humanities and informatics)" have emerged where people in the humanities take on the responsibility of acquiring skills in the sciences and even analyzing them.

On the other hand, I think that even science people who are familiar with analysis and systems should know enough about what the subject is in the first place in order to consider the "why" in analyzing something. For example, if there is an analysis of historical data, then, at a minimum, a background in history is necessary. It is kind of a difficult task, though.

As people become more specialized, they may be able to handle the details, but, from a broader perspective, it is inevitably harder for them to notice "something" that has not yet been identified as a problem. And, once an individual becomes a researcher, it is even more difficult for them to acquire broad knowledge later. That's why I think it's necessary to acquire general knowledge in both the humanities and sciences as early as possible.

In Japan, people are divided into sciences or humanities far too quickly, with this trend starting as early as the high school entrance exam stage. Wouldn't it be nice to have an environment in which students can learn the basic knowledge necessary to think about "why" up to high school or through the liberal arts course at university, regardless of whether they are majoring in the sciences or humanities?

I think it is also difficult for specialists to collaborate with each other unless they have some background in each other's academic disciplines and ideas. It has often been pointed out that the languages used in different academic disciplines are very different and do not work well together. It would be nice if we had the time to work on "useless things" in order to maintain such a mutual base of background knowledge.

Waste is inevitable, and it's common in my research. But now, only "useful things" are required, and results are required in a short period of time. I feel that the "logic of business" has become too strong in universities.

The social sciences are for finding principles of society which are not easy to understand or immediately useful. For example, if there is a problem, such as a false rumor, that makes society uneasy, then we can offer some ways to address it, but, to get to that point it is a long and tedious process that usually involves a lot of research and arriving at some views that may seem obvious.

Social science brings evaluation and imagination to society

It is very important to establish objectives and find the required systems, etc., for an ideal society. However, I feel that this approach is dominated by social science.

I believe that natural science researchers, as members of society, are also aware of these issues, but, when they put them into their own specialty, they tend to focus on solving individual problems, apart from the purpose of "why?" In our approach of starting with a vision of a desirable society, I feel that there is a lack of balance between the humanities/social sciences and the natural sciences.

One of the things that social science can bring to society is evaluation. Some things are acceptable to society and some are not. Social science will evaluate what technologies have failed and why, so, in light of what I said earlier, I hope that the natural sciences will not be overly preoccupied with their vision, but will instead proceed with a conscience.

Another thing that we can bring to the table is "imagination" regarding human beings and society. Imagination, in other words, is the ability to think about future social design and individual lifestyles. It is the ability to imagine that "A" and "B" are possible, not the ability to predict what future society will be like.

I often tell students, "Social science is the study of imagining a world in which your 'norm' is not the norm." Once you know what your "norm" is, try to imagine what things would be possible if that were not the case. Imagination has the potential to change things. I believe that the role of social science is to balance society with such perspectives.

Misa Matsuda

Misa Matsuda was born in Hyogo Prefecture, and in 1991 she graduated from the Department of Social Psychology in the Faculty of Letters at the University of Tokyo. In 1996 she completed her doctoral course from the Department of Social and Cultural Studies and Department of Social Informatics in the Graduate School of Humanities and Sociology at the University of Tokyo. In 2003 she became an assistant professor in the Faculty of Letters at Chuo University after working as an assistant at the Institute of Social Information at the University of Tokyo. She is the author of "The 2000s: The Age of Cell Phones" (co-editor, University of Tokyo Press, 2014), "What are Rumors" (Chuko Shinsho, 2014), and other books.

no. 15

Yuko Murakami

Professor, Graduate School of Artificial Intelligence and Science, Rikkyo University

With the shift to an information society we can enjoy benefits without being aware of them, should prepare for accidents

From a philosophical perspective, Yuko Murakami considers and predicts the impact of artificial intelligence (AI) on society and humanity, and works to develop human resources with the ability to think about how science and technology should be utilized. She worries that the evolution of technology has reached the point where "education cannot solve problems," so we asked her about the kind of social system that we should be aiming for.

Human identity is starting to leave the body

I am quite pessimistic about the future in 2050. While there is much debate about the ethics and social impact of AI, I believe that we have reached a point where the evolution of technology is beyond our control. The dichotomy between "man" and "nature or machine," which comes from the modern Western philosophy of "man controls other," has reached its limits.

Before AI, human identify had already begun to leave the physical body. Traveling by train is an extension of our physical capabilities, and writing notes in a notebook is an externalization of memory, so it is better to think of us as already being socially cyborgized.

With AI and online society becoming so pervasive, it is strange that legal and social systems continue to attach identity to the physical body. This is an extremely difficult task, but this must be changed as soon as possible.

Whether AI can be mastered depends on the social system

Educational surveys such as PISA (Programme for International Student Assessment, which is conducted by the Organization for Economic Cooperation and Development (OECD)) show that while Japanese people have very high literacy rates, their reading comprehension of intricate texts is not very high. However, given that this evaluation criteria is not at a high level in any country, it is reasonable to assume that it is probably not a problem that can be managed through education.

AI itself will permeate throughout society in the future, but if there is a limit to approaches for increasing individual literacy, then the ability to use AI will largely depend on the social system.

There are many people in society who are unable to use augmentative tools due to poverty, the area they live in, disability, and other circumstances. It is necessary to construct a social system and uses of AI that do not disadvantage those who will have difficulty using such systems, and there are limits to what we can do to improve their abilities through education.

The social system surrounding the automobile is relatively well designed and helpful, and there are two important points. One is that we can get the benefits without being aware of them. My sister is mentally handicapped, and even though she cannot drive a car, she can go for a drive if someone drives her and she can eat food that is transported to her. In this way, I believe that a state in which a person can enjoy benefits without directly using the system, or even without being aware that he or she is using the system, is an important element of the social system that should exist.

The other point is to be prepared for accidents. In the case of automobiles, social coverages such as road services and insurance are in place to prepare for accidents. But in our digital society, a system shutdown due to a disaster or cyber-attack would be fatal, so we should urgently create a state of preparedness for possible events.

I think that these two points are perspectives that people involved in research and development should share and be aware of.

What am I contributing to?

It is difficult to prepare for the "singularity" (a technological singularity in which AI surpasses human intelligence) that will eventually come, but the singularity is nothing more than a deep-seated fear. AIs are essentially tools for optimizing individual systems.

Humans can flexibly respond to changes in rules and value axes, and can compare and evaluate multiple values. Even if AI will eventually be able to handle this, humans will still need to grasp the choices for the future society. As such, I think that how we will prepare guidelines and the judicial system for that purpose is an issue that will need to be addressed in the future.

AI also has aspect of algorithmic bias (reinforcing discrimination). When we uncritically follow the rules, saying, "I'm just following the rules," or "whatever the AI decides

is best, so that's what I'm going to do," we lose sight of what we are complicit in. I call this the "digital version of the 'banality of evil,'" after Hannah Arendt's observations of people who faithfully followed Nazi orders. Institutions responsible for important decision-making need people who have the courage to say that something is wrong and why. We need to nurture such people.

However, there are concerns that even with the "GIGA school" concept (Global and Innovation Gateway for All) that is being introduced in Japan, there are still large differences between local governments. I'm worried about what kinds of impacts will appear 10 years from now.

Japan also has issues with reeducation for adults, so we will have to think about the entire education system.

What you see in Tokyo is not the essence of Japan

I am from Tokyo, but, when I was working at Tohoku University, I realized that there are a variety of differences in attitudes and economic aspects between Tokyo and other regions.

With the income disparities that already exist, even if a child can go to a good school, if they are from a rural area then the tuition and lodging fees will be a heavy burden for the family.

In such situations, gender bias often manifests itself unconsciously. An American study that examined the difference in college enrollment rates between girls with a younger brother and girls with a younger sister, and it found that in girls with a younger brother tended to have lower rates of college enrollment. In Japan, such a tendency still seems to be more prevalent in rural areas.

Conversely, it also means that the people of Tokyo are becoming more similar to each other. While I believe that online tools have the potential to change this situation, at least the usual world we see in Tokyo today is not the essence of Japan.

Living in the city of Sendai in northern Japan has given me a strong sense that the system for creating policies and visions based on life in Tokyo is out of alignment and no longer viable.

Ultimately, I believe that a multifaceted vision could emerge if, for example, we set up a conference where only people who have worked in areas other than Tokyo for several years could attend, or if we appointed a person from a regional university as chairperson.

Think in terms of the future we want to avoid

It is quite difficult to think about "the future we want to create" because it depends on our respective positions, values, and backgrounds. Instead, I think it is better to think in terms of futures or actions that "must be avoided."

Of course, visions of the future that we want to avoid will differ from person to person, but if there are visions that exclude people or a certain position, such as people of a certain gender or nationality, then those visions must be halted. If we can properly see "what should be avoided," then we can make constructive proposals that make use of each other's positions and expertise.

Another thing I think is that, no matter how much technology advances, people will not suddenly become Superman. Even 30 years from now, we will still get tired of things that make us tired, and our preferences and sentiments about what we like and dislike will not significantly change. If some technology came out that changed even that, then it would probably be the equivalent of drugs. In such a situation, ethical considerations are necessary.

Knowledge of the humanities and social sciences will give hints on where to apply technologies

As an infrastructure for generating convergence of knowledge, I believe that we need a platform that allows for exchanges across academic disciplines. Currently, local rules prevail in both universities and in academic societies, but I believe that this is contrary to convergence of knowledge. I think that once we establish high-quality data exchanges and communications on a common infrastructure, that then we will be able to have productive discussions on how to think about the future.

Based on this, I believe that the role of the humanities and social sciences is to provide guidance on where to apply technology. This is because we cannot ignore the culture and history of the people who are putting them into practice.

Science inevitably requires the construction of theories that are independent of context, so it is possible that the theories researchers have in mind may not be the best in the individual field of social implementation. In such times, I believe it is the knowledge of the humanities and social sciences that can provide hints.

Having numerous examples of failure is also a characteristic of the humanities and social sciences. I objectively feel that expectations for philosophy have increased in recent years, but I think that it is mistaken to seek out peace of mind in philosphy. Philosophy itself cannot solve our problems, and in fact it may even increase them. However a philosopher's strength is in having many examples of his predecessors who suffered and failed in similar ways, and so I want to be someone who can say things and prevent people from repeating the same mistakes and falling into traps.

Yuko Murakami

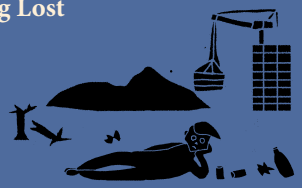
Yuko Murakami was born in Tokyo, Japan. After graduating from the College of Arts and Sciences at the University of Tokyo, she completed a master's program in the Graduate School of Science at the University of Tokyo, and completed the doctoral course at Indiana University Graduate School. After working at the National Institute of Informatics and at Tohoku University, she became a professor in the Graduate School of Artificial Intelligence and Science at Rikkyo University. Her specialty is philosophy and logic. She is interested in the automation of moral reasoning and its social implications, and in the philosophical implications of her artificial intelligence research. One of her representative papers is "Utilitarian Deontic Logic" (Advances in Modal Logic, Volume 5, pp. 211-230).

Chapter 3

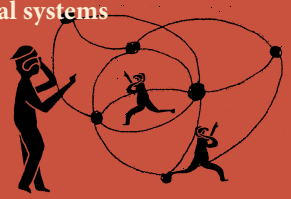
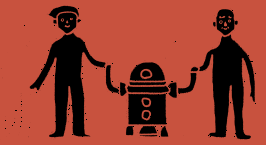
Data

This chapter shows the details of the interview analysis results. The four perspectives and points from Chapter 1 are also presented in greater detail.

Analysis Material 1: Modern Society is Full of Challenges

	Climate and Autonomy being Lost	Lack of Mental and Physical Health due to Fragmented Relationships	Industrial and Social Systems at a Standstill	Science and Technology becoming Increasingly Complex
				
Point	Harmful influences from current capitalism and social systems have caused a loss of respect for humanity and nature	Unconscious discrimination still strongly persists	Closed, siloed structures are a mismatch with the times	Regional disparities in the penetration of cutting-edge technologies are widening
Overview	Humanity and consideration for nature have been lost due to the harmful effects of excessive capitalism and technologically driven large social models	There still remains unconscious discrimination against women, as well as racism, and even the current awareness of diversity is insufficient	The silo-type structures that support rapid economic growth and that are the foundations of modern society are reaching their limits because they do not match the information society and do not create public commons	Advanced technology is becoming more sophisticated, and there is a large difference in the degree of penetration at the national and local government levels
Point	Things that were once resources have lost their social significance	Social structures are not receptive to diverse backgrounds and values	Issues with both hardware and cyberspace are becoming more pronounced	Human-centered science and technology alone is no longer sufficient for addressing social issues
Overview	Our umwelt should originally be unified with the nature in front of us, but has become separated from our lives, and there are an increasing number of resources that have lost their social value and meaning	Diversification of society will surely come, but at present we have not matured to the point where we can recognize it and make it work, and co-creative relationships have not yet been established	Japan is lagging behind the rest of the world because it is unable to break away from the industrial model in its layered industrial structure, but the United States, with the information industry where wealth and knowledge are concentrated, disparities are being created, so each has significant challenges	Potential issues in our complex society have emerged due to COVID-19, global warming, digitalization, etc., and it is no longer possible to deal with them only with the modern, Western human-centered view of nature and science
Point	A growing "leave-it-to-democracy" attitude due to indifference to politics	Lack of a mechanism to pick out the voices and places of affected individuals	Lack of human resources for the next generation due to stagnant vocational education and doctoral training systems	Social divisions are emerging due to differences in the utilization of new technologies and services
Overview	Japan's democracy is being left entirely to politicians and other people with certain attributes, and people don't regard creating the future as one of their concerns	There is a lack of a mechanism to pick out the voices and whereabout of affected individuals and minorities in difficult situation, and they are not reflected in social systems and institutional designs	Vocational education that supports local industries, including agriculture, forestry, and fisheries, is not functioning effectively, and neither are the systems for educating and promoting individuals with doctoral degrees, so there are risks for being able to secure human resources who will lead the next generation	The gap between those who can and cannot use newly emerging technologies and services is creating social divides, making it difficult for society as a whole to transition to new systems

Analysis Material 2: A Vision for Our Desired Future in 2050

	Culture and self-governance that are protected and nurtured	A life that realizes diversity and well-being	Vibrant industries and social systems	Optimized, democratized science and technology
				
Point	The future is discussed based on a region's soil and climate	Social systems are in place to prevent minorities from being disadvantaged	Policies are formulated based on each region's critical issues	Technologies are democratized and operated on a regional basis
Overview	Local cultures, such as terroir and food diversity, are being preserved and developed while at the same time being expanded globally through information technology	Building social systems in which the socially vulnerable and minorities are not disadvantaged and can unconsciously enjoy benefits	Eliminating the Tokyo bias and regional disparities in policy making, and envisioning a future from the perspective of the most pressing problems in each region	Technology is democratized, with appropriate use of heavy/bulky and thin/light technologies, and diffusion of technology in a locally operational manner
Point	World-leading styles are created	There is space for everyone to feel comfortable and to actively communicate	Realization of multi-polar urban designs	The body, augmented by technology, is fused with people's uniqueness
Overview	Building styles that can be communicated to the world by taking advantage of Japan's unique environment and geopolitical characteristics	Establishing spaces that connect relationships and stimulate creativity, such as facilities where people of all backgrounds can be at ease, and residences that can be customized to suit environments and families	Realization of a multi-polar urban concepts wherein people are clustered in safe locations in terms of both cyber and physical security to enhance resilience, and where medical and nursing care and resident services have been made more efficient	Extending the definition of the body via remote technology and other means, while at the same time integrating technology, including institutional aspects, without compromising the uniqueness of the person
Point	Self-governance is conducted by making use of the knowledge and skills people have cultivated	Social structure which realizes diversity and well-beings	Highly skilled human resources freely move between regions, creating free and vigorous innovation	True universal design is pervasive so that benefits can be enjoyed under any circumstances
Overview	Make use of indigenous knowledge and skills (personal knowledge) that have been cultivated over generations in local communities, and operate at small scales on a self-reliant and self-supporting basis	Social systems based on a world of wellbeing, where diversity naturally flourishes and both individuals and society can live prosperously	Highly skilled human resources from both Japan and overseas working with a high degree of fluidity, driven by DX, innovating freely and openly	True universal design by improving the QOL of the elderly and socially vulnerable has become pervasive, so that people under any conditions can benefit from technology

Analysis Material 3: Environment and Activities Necessary to Cultivate Convergence of Knowledge

		Environment Necessary for Convergence of Knowledge		
	Knowledge and Characteristics of the Humanities and Social Sciences 	**Appropriate understanding and use of the diversity of specialized knowledge**	**Building teams with open relationships and trust**	**Academia that emphasizes interaction with society**
Point	Nurture the past to create the future	Balance between qualitative and quantitative research	Relationships where people can take on challenges together while enjoying dialogue	Evaluation processes that incorporate diversity and dialogue among the evaluators
Overview	Reflect on human history and actions from both positive and negative perspectives, and draw out and express people's memories and stories in order to build knowledge and places that will lead to creating the future	Not just looking at evidence in a prescriptive way, but also rooting ideas in people's lives and carefully looking at each individual's differences. It is important that both quantity and quality exist in a well-balanced manner.	Enjoy heterogeneous dialogue with an "amateur attitude" that opens people up to each other's unknowns, and first build relationships that allow people to take on challenges from small prototypes/models	Create new evaluation systems in which diverse evaluators (including diversity from regional characteristics) co-create the future through dialogue with those being evaluated
Point	Guide the relationship between society and technology from "I" to "We," and evaluate the post-implementation world	Direct/indirect knowledge, and problem-solving/ value-creation activities	Platforms and human resources to connect different fields	Respect for both vision-driven and interest-driven research
Overview	Update perceptions based on trends in advanced technologies, lead the relationship between technology and society to shift from I to We, and evaluate the world and the way we live in it after social implementation	There are both direct and indirect knowledge, and problem-solving and value-creating activities and practices. These exist across both across the sciences and the humanities & social sciences, and it is important to determine aptness	Platforms that enable common interactions across academic disciplines, and human resources that connect relationships through communication that takes into account diverse backgrounds, will be important infrastructure for convergence of knowledge	Both research themes that originate from social needs, such as visions and social issues, and research themes that originate from individuals, such as pure interests and awareness of problems, should be respected
Point	Have a sensitivity to things that stir the heart and to unknown possibilities	Understanding the diversity of academic disciplines	Build trust over time in psychologically safe situations	Constructive engagement with politics and government
Overview	Having not only usefulness, but also the experience and sense of being close to people's lives, culture, and living, as well as the possibilities of things born from people's hearts	Fusion across the boundaries of academic disciplines is difficult to achieve. In addition to understanding the cultures of different academic disciplines, it is important to go back to the days when academic disciplines and the arts used to be one and the same.	In situations where psychological safety is ensured, build relationships of trust while putting both issues and selfishness on the table. It is important to accept up front that this process will take time.	Involvement in politics and government is important as part of a healthy relationship with society, and it is necessary to make efforts based on consideration and appropriate understanding of the other party's position
Point	Have a critical intellect, spirit, and a perspective that questions the obvious	Presenting thoughts, values, and philosophies that serve as starting points for our desired future	Concrete discussions led by shared social issues and goals	Participation in the field with entities that take on the challenge of social implementation and problem solving
Overview	Having the intelligence to look at the "normal" things that we overlook in our daily lives and surroundings, combined with a critical perspective and constructive awareness, along with the spirit to point things out without fearing rebuttals or counterarguments	In order to utilize cutting-edge technology to realize our desired future, set goals from the standpoint of driving people based on thoughts, values, and philosophy	First share what the issues are, and then specific social issues and objectives, so that conversations do not become bogged down or tied up in abstract discussions	Clarify the elements necessary for social implementation by increasing opportunities for substantive and proactive activities, such as engagement with the field of social issues and dialogue with citizens

Analysis Material 4: Elements for Creating Our Desired Future

	Starting point theme	Key Subjects	How to sketch out our desired future	A place to create the future
				
Point	Discuss familiar issues that everyone can relate to	Discuss with young people who will play a leading role in the future, and share this with society	Sketching out a vision-first future	Value opportunities for diverse parties to openly discuss their weaknesses and difficulties in life
Overview	Possibilities for standardization increase by envisioning the future from familiar themes that everyone can relate to	Young people will play a leading role in the future, so have them participate in discussions as main players, and, as a driving force to move society, involve influencers who have the ability to communicate	Rather than a vision of the future that is based on technology, being together a diverse range of people with an attractive vision of the future the presents a leading image for society, and then create new technologies and networks to reach that vision	The future for societies and communities will be created when people in a variety of situations can share and discuss their weaknesses and difficulties in open forums
Point	Discuss "the future that is sure to come" as a starting point	Build a new mass media with a highly specialized and long-term perspective	Focuses on "Here, Together, Safely"	Design a place where people can think about ideas from the bottom up, starting with *umwelt*
Overview	Precisely because the future is uncertain, discuss the future and issues that will inevitably come, such as demographics and natural disasters	Break away from the current generalized and side-by-side mass media, enhance expertise, and build a new media that does not only pursue breaking news, but also reflects on its own reporting stance and content, while working on it over the long term	Consider an ordinary future with families and friends, including a society in which people can naturally continue modest lifestyles that have been passed down in regions	Sustainable communities can take shape from the bottom up by designing places where local residents can freely generate ideas based on their own *umwelt* living environment
Point	Update our perceptions and society while continuously questioning the changing essence of human beings	Politics and government have a bird's eye view of society as a whole, and exist to adjust society's balance	Design that advances forward while moving back and forth between the past and future	Communicate both virtually and in real life
Overview	While discerning and being aware of human nature, which has always remained the same, update perceptions in light of new technologies such as body augmentation, and derive new social designs	Based on broad and simple visions presented by the national government, local communities will take the lead, with politics and government playing a role in appropriately addressing imbalances	The path to the future is not a straight line, but instead it spirals upward, like a pendulum, going back and forth from the past while moving upward to the next dimension	As the digitalization of society accelerates, discover the significance and importance of physical communication and make effective use of it
Point	Reconceptualize individual problems as problems for society as a whole	Create new value through 'social editing' that edits knowledge	Explores social needs by picking out the hidden voices of those in and involved with an area	Engage the senses to unleash creativity
Overview	Reconsider the problems surrounding minorities and socially vulnerable groups not as problems of individual awareness and environment, but as issues of the society as a whole that gives rise to such problems	It is difficult for experts to innovate alone, and it is important to have social editing (a social editing function) that creates value by editing specialized knowledge	Socialize problems through dialogue by picking up "voices" that do not surface from affected individuals or places, and explore latent needs based on these voices	Engage the senses to bring out creativity and share experiences to help revitalize communities and regions

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Kensuke Akashi (imato LLC)
Art Direction, Design, and Illustration:
Reika Ohara

Management and Analysis Assistance:
Takashi Arakawa, Naoko Takeda, Mika Nakabayashi, Yuta Wakebe (Kikitudzuri Honpo Co., Ltd.)

Cooperation:
Yuya Nishimura (Mira Tuku NPO and essence Co., Ltd.)
Naoki Miyano (Center for the Promotion of Interdisciplinary Education and Research, Kyoto University)
Hokkaido University Communication in Science & Technology Education & Research Program (CoSTEP)

Inquiries:
Japan Science and Technology Agency
Department for Promotion of Science in Society / Department of R&D for Future Creation
Email: csc@jst.go.jp

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