

Noryangjin Fisheries Wholesale Market, South Korea:
A vibrant seafood market handling marine produce
harvested from various fishing grounds around South
Korea, Noryangjin handles approximately 60% of
all marine products consumed in Seoul. The market
comprises about 800 shops arranged into various
zones, according to the type of fish. Some shops
in the market cook newly purchased fresh food
ingredients for patrons to enjoy there and then.

Photograph: Shigeki Koyama

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[Special Feature]

Food

ISSUE 5
March 2017

The Past, Present, and Future of Food Culture Studies

The *act of eating* is an essential part of human daily life. During the development of the act of eating within given natural environments, unique cultures have formed through the inter-regional exchanges brought about by the movement and migration of humans, since ancient times. With the rapid progress of globalization and information technology, food culture has now expanded into every corner of the world, transcending all existing boundaries and thereby creating a new history. At the same time, some people are suffering from hunger while others tackle the problems associated with obesity. Safety and distribution have become global issues with regard to food. What roles should academic studies play in these issues? At Ritsumeikan University, researchers from a range of fields are tackling food and its culture in their research.

Professor Toshio Asakura of the College of Economics is a researcher studying Korean society through food. He discussed the future of food culture studies with two famous food culture researchers—one from Japan and one from overseas—who participated in the 6th Asian Food Study Conference (AFSC) and the 2nd International Symposium by the National Museum of Ethnology and Ritsumeikan University at Ritsumeikan University's Biwako-Kusatsu campus on December 4, 2016.

Toshio Asakura
Professor, College of Economics

Naomichi Ishige
Professor Emeritus, National Museum of Ethnology

Françoise Sabban
Professor, l'École des Hautes Études en Sciences Sociales

Determination to research the undeveloped field of food culture by exploring food from 100 countries around the world

Asakura: Professor Ishige and Professor Sabban, please explain how you initially became involved in food culture studies.

Ishige: It was probably my marriage that made me delve into the study of food cultures. I decided to get married when I was an assistant at the Institute for Research in Humanities at Kyoto University. My salary at the time was not great and I had run up a large bar tab, so I was thinking something along the lines of, "If I get married under these circumstances, I'll look like a fool." What came to mind as a measure to pay back the bar tab was to write a book. Since majoring in cultural anthropology

at university, I had conducted a lot of fieldwork in the Pacific Islands and other exotic places and had eaten a lot of rare food. I wrote about all of this in my first book, *Shokuseikatsu wo Tankensuru* (Exploring Food Life), in 1980.

What I realized while writing the book was that the study of food culture was really an untapped field of research. Though there were fields of research dealing with food from a scientific perspective, such as nutrition or agriculture, Japan didn't have any research exploring food cultures from the humanistic domain. I belonged to an exploration club at university, and for me, there is nothing more interesting than exploring undeveloped regions. I thus began my studies to develop a new area of study covering food cultures.

Asakura: That is really an amusing motivation for study—certainly unique to Professor Ishige, who has traveled to

more than 100 countries across the globe and is known to have an "iron stomach." I have also studied Korean society from the viewpoint of cultural anthropology. The fieldwork that forms the basis of my research started with visiting a normal household in South Korea and sharing their food. While eating many different home-cooked meals, I came to realize that food is a very effective clue for learning about a country's society—and indeed its culture. And as a result of this realization, I started to conduct my studies focusing on food. What about you, Professor Sabban?

Sabban: My interest in food was cultivated by my mother. When I was young, it was not an era when there was easy access to many food ingredients—unlike today—but my mother always enthusiastically prepared delicious meals for our family. That said, I only actually started to see food as a potential subject for my studies many years later. After studying the Chinese language at the

Table of Contents

02	Opening three-way conversation The Past, Present, and Future of Food Culture Studies Naomichi Ishige (Professor Emeritus, National Museum of Ethnology) Françoise Sabban (Professor, l'École des Hautes Études en Sciences Sociales) Toshio Asakura (Professor, College of Economics)
06	STORY #1 Observing Changes in Korean Society from the Perspective of Food Toshio Asakura (Professor, College of Economics)
08	STORY #2 Creating Regional Brand Value Using Design Concepts Noriji Sato (Professor, College of Business Administration)
10	STORY #3 "White Food," Supporting the Livelihoods of Nomads in Mongolia Takahiro Tomita (Senior Researcher, Ritsumeikan Global Innovation Research Organization)
12	STORY #4 Rescuing the Japanese Food Industry through a Combination of Food and Management Hiroshi Izawa (Professor, College of Economics)
14	STORY #5 Microorganisms to Bring about a Change in Japanese Agriculture, Beginning with the Soil Motoki Kubo (Professor, College of Life Sciences)
16	STORY #6 Ritsumeikan + Food Conducting research in cooperation with local economies and communities, based on food
18	STORY #7 Japanese Migrants Fishing in Pre-war Canada Norifumi Kawahara (Professor, College of Letters)
20	STORY #8 Advertising, That Implies Hidden Qualities Takashi Hayakawa (Professor, College of Policy Science)
22	STORY #9 Why is 6th Sector Industrialization in Agriculture not Working Out? Toyohiko Matsubara (Professor, College of Economics) Shigenori Kusuoku (Part-time Lecturer, Ritsumeikan University)
24	SPECIAL REPORT Earthquake Disaster Recovery Continues Kuniko Muramoto (Professor, Graduate School of Science for Human Services) Shiro Dan (Professor, Graduate School of Science for Human Services)
26	Research Topics
30	Column / Research Office



Born in Tokyo in 1950. Graduated from the Faculty of Humanities, Musashi University. Completed doctoral program without a doctoral degree in the Graduate School of Political Science and Economics, Meiji University. Majored in social anthropology and Korean studies. After serving as Professor and Professor Emeritus of the National Museum of Ethnology, was appointed Professor of the College of Economics and Director of the International Research Center for Gastronomic Science, Ritsumeikan University, in April 2016. His books include *Korean Shakai no Henbo to Ekkyo (Changes and Border-crossings of Korean Society; Rinsen Book Co.)*, *Seikai no Shokubunka Vol. 1 Kankoku (Food Cultures of the World, Vol. 1: Korea; Rural Culture Association Japan)*, *Nihon no Yakiniku Kankoku no Sashimi—Shokubunka ga-nize Sareu Toki (Yakiniku in Japan and Sashimi in Korea—When Food Culture is “-ized”; Rural Culture Association Japan)*, and many others.

Furthermore, as I lived in Japan for two years from 1985, I was able to improve my knowledge of the history of

Asakura: The College of Gastronomy Management will be the first college in Japan where food will be totally taught and studied from an interdisciplinary viewpoint encompassing the humanities, social sciences, and

Françoise Sabban

Professor, l'École des hautes Études en Sciences Sociales (EHESS). Director of the Maison Franco-Japonaise (2003–2008). Specializes in anthropology and the history of food in Asia and Europe, and is especially famous as a researcher of Chinese food culture. Her books include *La Pasta* (Hara Shobo), *Un aliment sain dans un corps sain – Perspectives historiques* (Presses Universitaires François Rabelais), and *Les séductions du palais: Cuisiner et manger en Chine* (Actes Sud Editions), among others.



Ishige: The foundation of all research in cultural anthropology is fieldwork. To understand food, I emphasize first putting it into my mouth and actually eating it. While conducting a survey of pasta in Italy, I ate three pasta meals a day for ten days in a row, with four kinds of pasta at each meal. At restaurants, they serve not only pasta but also a main dish and a dessert, so it was quite tough. When I returned to Japan, I was really in bad physical shape.

Sabban: In *La Pasta—Storia e cultura di un cibo universale*, I summed up changes in the pasta culture developed in Europe and China, based on historic materials. Insofar as

A close-up portrait of an elderly Japanese man with white hair and a goatee. He is wearing a pinstriped suit jacket, a light blue shirt, and a red patterned tie. He is speaking, with his mouth open. The background is dark and out of focus.

Asakura: Thank you very much for your time today.

Naomichi Ishige

Born in Chiba in 1937. Graduated from the Faculty of Letters, Kyoto University. Doctor of Agriculture, specializing in cultural anthropology (Food culture and Comparative culture). After serving as Professor and Director of the National Museum of Ethnology, was appointed Professor Emeritus of the same museum and the Graduate University for Advanced Studies. Won the 24th Minakata Kumagusu Award. His books include *Jikyokukan no Jinruijaku* (Anthropology of Living Space; Kajima Institute Publishing), *Shokuji no Bunmeiron* (Food Civilization; Chukoron-sha), *Gyosho to Narezushi no Kenkyu—Monsoon Asia no Shokuji Bunka* (Study of Fish Sauces and Fermented Sushi—Food Culture in Monsoon Asia; Iwanami Shoten), *Shokutaku no Bunmeishi* (History of Civilization at the Dining Table; Iwanami Gendai Bunko), *Isige Naomichi Jisen Chosakushu* (Selected Works of Isige Naomichi; twelve volumes; Domesu Publishers), and many others.

It is said that you can learn about a person by knowing their eating habits. For this very reason, food is treated as an important area of study in the field of cultural anthropology and folklore. Describing Korea as “a paradise for food lovers,” Toshio Asakura focuses on food in his search for clues to understand Korean culture and society itself.

It was in 1980 when Asakura conducted his first fieldwork on Tocho Island, located in the archipelago off southwestern South Korea. He visited the homes of the islanders, who offered him food and provided accommodation, and conducted a survey of the reality of their lives. The first hurdle to making the survey a success was to “enthusiastically eat all of the food served.” “By sharing food with them, I could earn their trust,” Asakura says. “It was almost like an interview.” Since that time, through fieldwork spanning more than 30 years, he has studied people's lives in great depth and—through the filter of “food”—observed changes in both Korean society and culture.

“What I first feel when eating with Korean people is their vigorous energy

in relation to eating,” says Asakura, while also mentioning that Koreans’ attitude toward food is represented in their tableware. For example, both Japanese and Korean people use chopsticks, but there is a big difference in that Koreans use spoons in addition to chopsticks so they can eat in a more dynamic manner. In addition, Asakura has witnessed the magnitude of Koreans’ energy toward food in their language expressions. “Korean people express becoming old as ‘eating age,’ summer fatigue as ‘eating heat,’ and making a decision as ‘eating heart.’ As these expressions clearly show, the Korean language has many expressions which use the verb, ‘eat.’ This can be interpreted as being a result of their high level of interest in food.”

Asakura has written an interesting book that classifies Japanese and Korean cultures and spirits using the keywords of sharing and hospitality. In Korea, when there is a guest in attendance, they will serve a bowl full of rice and entertain the guest with an abundance of food. At a table, people will assemble around a pot in the center and together pick the food from it. In Japan, a full bowl of rice is avoided

as it is considered to bring bad luck, and it is common practice to serve a sensible amount of rice while also encouraging a second helping. Similarly, in front of a shared dish, Japanese people avoid using their own chopsticks and consider it polite to use serving chopsticks when serving food into one's individual dish. Asakura explains, “This difference comes from the institutionalization of Confucian culture.”

In the Korean peninsula in the 14th century, when the Yi dynasty ruled Korea, Confucianism was designated as the state religion, and its teachings were deeply rooted in society. “According to Confucianism, a relation of the eighth degree is considered to be ‘one's family.’ Furthermore, Koreans have a genealogical familial record called ‘munjung’ and recognize that one's family extends in concentric circles with oneself at the center. They have thus developed a culture where they try to share everything with those within the circle because they are all family.”

At the same time, when Japan imported the Confucian education model in the Edo era, such teaching regarding filial piety did not result in memorial

ceremonies for the ancestral spirits or the institutionalization of familial structures. “In Japan, it is considered that one's family extends up to relations of the third degree at most, and that other people are strangers. In other words, in Japanese society, one is surrounded by more strangers than family members. Such a conceptual awareness of strangers probably led to the idea of caring for others or hospitality,” Asakura adds.

According to Asakura, Korean “Kimjang”—the making and sharing of kimchi—which was recently registered as a UNESCO Intangible Cultural Asset, also symbolizes this culture of sharing. Korea has a custom whereby all clan members make kimchi together before winter, and share it amongst themselves. Even today, there is an activity called “Sharing of Kimjang kimchi”—or giving kimchi to lower-income earners. This is derived from such a tradition.

“Comparing cultures that appear similar but are actually quite different allows for a better understanding of your own culture,” Asakura says. He explains an interesting

Korean sharing *nanum*, and Japanese hospitality *omotenashi*, as seen at the dining table

historical point that led to the difference between Japan and Korea in the use of tableware such as chopsticks and spoons. In Japan, one can still find horizontal picture scrolls and documents indicating that aristocrats used spoons until the 12th century. Asakura suggests that this changed due to the advent of hocho (kitchen knife) culture. “As represented by sashimi or raw slices of fish, a culture of decorating dishes with the skillful use of kitchen knives was somehow established in Japan. I believe that as a result, Japanese people started to use chopsticks exclusively in order to avoid spoiling the beautifully arranged dishes.”

When comparing countries from the viewpoint of food, one can see diverse aspects of individual countries. Asakura says, “It's very interesting to compare similarities and differences between cultures in Asia from the perspective of

food.”

Since the 1980s, Korean society has changed drastically, while its culture has rapidly become globalized. Asakura has identified such changes by observing transitions in people's dietary customs and habits. Going forward, he aims to continually observe the diverse changes as experienced by Korean society in comparison with Japan and other Asian countries, from the perspective of food.”



Toshio Asakura

Professor, College of Economics

Subject of Research: Korean society—Aspects in globalization
Research Keywords: Social anthropology, Korean studies



Observing Changes in Korean Society from the Perspective of Food

Creating Regional Brand Value Using Design Concepts

A linear silhouette reminiscent of a high-rise development appears to have three dimensions as it rises from the paper. Pastel-colored tableware with a metallic gloss. These are KIKOF brand products, designed by the KIGI creative design company and inspired by the Shigaraki-yaki craftsmen of Shiga Prefecture. This tableware is crafted by traditional artisans from Shiga Prefecture as part of the Mother Lake Products Project, which was launched with the aim of creating superbly designed products that meet the requirements of a modern lifestyle. With its metallic textures and dimensions as fine as three millimeters KIKOF tableware does not resemble traditional Shigaraki-yaki. By merging careful design with the sophisticated skills of experienced craftsmen, KIKOF serves up the impression of a new Shigaraki-yaki.

The aim of Noriji Sato, who is the principal of this project, is to achieve regional value creation through design. Sato is attempting to invigorate regions of Japan that are suffering from declining and impoverished economic conditions through the application of design concepts.

“In addition to the narrow sense, signifying shape, color, and function, the term ‘design’ also includes abstract concepts such as the combination of a variety of information,” says Sato. Through the optimal combination of content and information, the design management in which Sato specializes smooths the way for mutual relationships and communication while also creating new value. The force or power of this approach to design management has recently begun to take on a more important meaning in terms of regional invigoration.

In 2010, the Mother Lake Products Project in which Sato is involved was fully launched. About five years prior

to this, Sato had provided consultation services to Shiga Prefecture in relation to improving its brand power. In response to the municipal government’s request to “promote local development by utilizing the traditional skills of Shiga Prefecture,” he initiated the Mother Lake Products Project.

Sato began by touring the region and gathering together young craftsmen with a certain level of willingness and ability. Selecting the Hama-chirimen silk fabric of Nagahama, the lacquerware of Hikone, the Omi-Jofu textiles of Notogawa, the wood beads of Omihachiman, and the Shigaraki-yaki ware of Shigaraki, he took advantage of all of these individual techniques to develop new products with modern designs. However, the first product did not fully satisfy him. “It was

in order to integrate these resources,” says Sato in discussing the role of design management. In particular, when planning a world and a story, food plays an effective role.

“As a human incentive, food is more than powerful. When people learn there is some delicious food to be found, they tend to be willing to visit even remote places. Therefore, in creating a local brand, food-related content is essential.”

Many different regions have their own unique delicious things to eat, but there are not so many cases where such things serve as the actual content of a local brand. Sato goes on to point out that “what is certainly lacking for each locality is not the content itself, but a mechanism to market, distribute, and indeed promote it.”

In addition to the attractiveness of the food, the elements to stimulate a diner’s appetite include the presentation of the food, the dishes and tableware, and the arrangement of the dining space. For example, by totally designing the presentation of a wide range of foods from

Shiga Prefecture using KIKOF ware, tables, chairs, dining mats, candlesticks and candles, as well as the curtains and furnishings decorating the dining space, we can dramatically increase the actual appeal and communication power.

As a result of the appeal of this new attraction of Shiga Prefecture—which is completely different from conventional types—created through the Mother Lake Products Project, the brand value of Shiga Prefecture has been steadily improving. Sato reveals, “In 2016, a certain hotel in Shiga Prefecture decided to use KIKOF for all of its cutlery needs.” In a space like a hotel, new possibilities for promoting the Shiga Prefectural brand are opened in a range of scenarios such as accommodation, meals, and weddings.



KIKOF tableware was created as a result of KIGI combining the skills of Shigaraki-yaki craftsmen with design. Winner of the 2015 ADC Annual Awards Grand Prix.

perfect as a traditional craft product,” Sato says, looking back. “But in order to have an overwhelming impact upon Japan and indeed the rest of the world, I felt that we needed designs that would be two or even three steps ahead of the curve.” To achieve this, KIGI was chosen, leading to the birth of the KIKOF product range that so utterly changes the conventional image of Shigaraki-yaki ware.

“Each region has a wide array of resources such as tourist spots with natural and historical sites, local specialties, and food from both the land and sea, including ‘casual-gourmet’ food and local cuisine. But to create a regional brand, a worldview and a background story are necessary



Hikone lacquer cups and plates



Omi linen scarf



Hama-chirimen book covers

Inspiring a world based on food, from ingredients to dishes, tableware, and dining spaces

Noriji Sato

Professor, College of Business Administration

Subject of Research: Design management/Knowledge and information value
Research Keywords: Management



“White Food,” Supporting the Livelihoods of Nomads in Mongolia



Takahiro Tomita
Senior Researcher,
Ritsumeikan Global Innovation Research Organization
Subject of Research: Study of Transformations in Men-Environmental Relations in Modern Mongolia
Research Keywords: Cultural anthropology, Social history of modern Mongolia

The vast expanse of the great plains of Mongolia. Ger (tents) in the distance appear tiny. Nomadic pastoralists (nomads) move slowly across the landscape with their livestock. In the minds of many people, this image of Mongolia has not changed since the Mongolian Empire was built by Genghis Khan in the early 13th century.

Takahiro Tomita points out that “even in academia, there has been little research to bridge the gap between the so-called traditional Mongolia that existed before the 20th century and that of the modern era.” Tomita feels that there is no way to discuss present day Mongolia without reviewing the socialist era since the 1920s. By focusing on one of Mongolia’s key industries, animal husbandry, he conducts research pertaining to the production, consumption, and distribution of Mongolian livestock products under the social and economic changes of the 20th century. In particular, by studying the impact of socialization since the 1920s in addition to democratization and market-oriented economic reforms in the 1990s, he is attempting to understand changes in Mongolian pastoralist society from a brand new perspective.

For Mongolian nomads, meat and dairy products are very important food resources. Meat is referred to as “red food,” while dairy products are known as “white food,” and people’s livelihoods depend upon both. According to Tomita, Mongolia has a history in which one or a few households as a basic unit

traditionally kept livestock and consumed most parts of meat and dairy products in a self-sufficient manner. The variation among the dairy products that Tomita pays attention to is rich, and nomads have accumulated complex and diverse techniques for processing dairy products over the years.

As elucidated by Tomita, since the establishment of the Mongolian People’s Republic as a socialist state in 1924, the ways of breeding and distribution of livestock has drastically changed. “Basically, self-sufficient consumption within families was the mainstream beforehand, but from the early 1940s, national procurement of meat, fur, leather, milk, etc. started in conjunction with industrial processing of dairy products across all of Mongolia,” explains Tomita.

Among dairy products, butter production started under the influence of the Soviet Union. With assistance from their neighbors, Mongolia built modern dairy processing factories with storage and processing facilities, while establishing dairy producing organizations to support manufacturing—thus forming an organized butter production network spanning the entire

country. Following the Second World War, the importance of dairy produce waned somewhat compared to meat and fur, and after peaking at the end of the 1950s, the volume of production gradually declined (In the 1970s, volumes had decreased to nearly half those of the peak period). At the same time, to feed urban populations—which had dramatically increased alongside improvements to infrastructure and the industrial development in cities—mechanized dairy farms were established on state farms near the capital and secondary cities from the mid-1960s in order to supply milk to those cities. From the early 1970s, with government assistance, pastoral cooperatives began consistently carrying out cattle breeding



and milking, as well as milk collection and processing, thereby stimulating an overall recovery of butter production for urban consumers.

Such research shows how the process of organization and the intensive development of production and distribution of dairy products—especially butter—under the socialist regime was conducted. “Having said that, it is interesting that we cannot simply standardize the processes of the development of the livestock industry,” Tomita says. Gathering opinions from

nomads during field surveys in Bulgan Province, the north area of Mongolia, he identified changes in the livestock industry that couldn’t be understood through documents. One of his findings was that while the livestock industry became organized, traditional production of dairy products in individual households never really declined.

According to Tomita’s survey, in spite of the tightening of regulations following the organization of dairy producing groups within pastoral cooperatives in the early 1970s—such as the obligation for individuals owning livestock to supply milk—nomads continued the small-scale production of dairy produce for consumption within their communities or families. Following democratization, this led to the sale of dairy products in city suburbs by individual households, which has continued to the present day.

In the early 1990s, the socialist system of the livestock production collapsed as a result of democratization and market-oriented economic reforms.

“What characterized this was that a mechanism was established where nomads in the environs of cities would produce traditional dairy products—not at cooperative level, but at the level of one or a few households—and supply these products to cities, where more and more nomads were settling,” says Tomita. “What especially attracts attention here is the fact that households with limited numbers of livestock focus more on the production and sale of dairy products.” With limitations in terms of storage, it is difficult to supply dairy produce to remote places. In addition to physical locations near cities, the living strategy of individual households for maximizing their income with small numbers of livestock helps to maintain the modern dairy industry.

By conducting fieldwork and actually getting in touch with the nomadic lifestyle, Tomita has described elaborately the reality of the livestock industry. His results also shed new light on the issues facing modern Mongolia, such as environmental destruction by nomads who settle close to the suburbs of cities and international development aid, without reviewing the socialist era. Furthermore, Tomita attempts through his research to reveal a reality of the livestock industry that tends to be invisible, by showing in detail the slaughter, meat processing, and dairy product manufacturing processes. All of this also poses some questions for Japanese people, who consume meat and dairy products without giving it too much consideration.

Exploring changes in the Mongolian dairy industry over the 20th century

Rescuing the Japanese Food Industry through a Combination of Food and Management

It is estimated that there are as many as 50,000 Japanese restaurants all over the world. However, most of the managers of these restaurants are in fact not from Japan. “Even if a manager of a successful Japanese restaurant based in Japan opens a restaurant abroad, most of them close within a few months or are replaced with a local overseas manager. Japanese people have the skill to create delicious dishes but don’t sufficiently know how to turn a profit as a business,” says Hiroshi Izawa, pointing out the issues and possibilities for the Japanese food industry from the viewpoint of his specialty, finance.

Japan is known as a manufacturing-based country, but in actual fact, manufacturing accounts for only about 20% of the total sales, profits, and number of employees across the Japanese economy. Nearly 70% of Japan's GDP is derived from the service industry, with the hospitality business and associated food services accounting for the bulk of this figure. The food-related industry is enormous in size, unrivaled by the manufacturing industry. "In terms of the food industry, Japan is overwhelmingly behind the rest of the world," says Izawa, openly displaying his sense of crisis in relation to this topic. And the reason for this concern is illustrated by the example at the beginning: the industry lacks the know-how and knowledge necessary to create a sustainable business on the global stage.

With the increasing prominence of Japanese food around the world, as

exemplified by the inscription of *Washoku* (Japanese cuisine) on UNESCO's Intangible Cultural Heritage list, the food business will play a highly significant role as a driver of the Japanese economy.

"To realize this, it is necessary above all to introduce a management viewpoint to the world of food," says Izawa. One such viewpoint is provided by Izawa's own area of study, behavioral finance—a field which integrates behavioral economics with finance. In behavioral finance, human behavior and decision-making are studied through experiments, observation, and other approaches (experimental economics) and the knowledge thereby obtained is used to analyze finance and transactions. For example, in terms of the economic theory that "companies act to maximize profits," it had been thought that complicated human beings would not make such rational decisions. But through experimental economics, it has been elucidated that the irrational decisions made by humans are seen to follow certain rules. Such a finding could not be revealed without conducting experiments.

Izawa feels that such a method of experimental economics is effective for analyzing decision-making and recognition with regard to food. Under what conditions will a person eat something? The process involved in this decision-making is very complex. It is said that people make 200 to 300 decisions in relation to food every single day—but making such conscious decisions each time we eat would exceed the capacity of our brains. It is believed that this actually

does not happen because humans make food selections more or less out of custom or habit. Through his experiments, Izawa is attempting to understand such human food selections.

Developing the Japanese food industry on a global level will require not only the accumulation of academic research, but also the development of the people necessary to carry it forward. Since being selected for the FY2015 “Industry-Academia Collaboration Project for Fostering Management Human Resources in the Service Industry” supported by the Ministry of Economy, Trade and Industry (METI), Ritsumeikan University is currently targeting “Development of Human Resources for Advanced Management in the Food Service Field.” With Izawa taking the lead, the university plans to develop a practical educational program for working adults, aimed at developing executives and managers in the food service field who have in-depth knowledge of food culture, business and science, and who boast a global viewpoint. Furthermore, in April 2018, the College of Gastronomy Management will be established at the Biwako-Kusatsu campus. “We want to develop human resources who

can support the next-generation food service industry; people who—rather than positioning food from the conventional viewpoints of agriculture or nutrition—will learn about food management and hospitality management, and who can work in global markets,” says Izawa, as he contemplates the future outlook.

To take the global initiative in an academic sense, while developing human resources as an advanced educational institution, Izawa and other parties are currently focusing on building a food database. He intends to “build a comprehensive database covering not only food in Japan and the entire world and all associated recipes, but also food-related histories, cultures, and other peripheral information.” For this reason, experts from diverse fields such as cultural anthropology, robotics, and information technology, including AI, are committing themselves to information collection and format building.

All of the information collected for the database will form a foundation for academic studies going forward, while also being essential for the development of different and diverse food-related businesses. For example, this may be software supporting advanced technology such as a cooking robot to exactly reproduce the taste of a dish from an established restaurant or the *chazuke* (boiled rice soaked in tea) that Ieyasu Tokugawa ate before heading into battle. Or it may be useful for planning a sales strategy for food based on the culture and history of a specific region somewhere in the world. Such a database developed by Izawa and other concerned parties may well go on to form a foundation that supports every food business in the future.

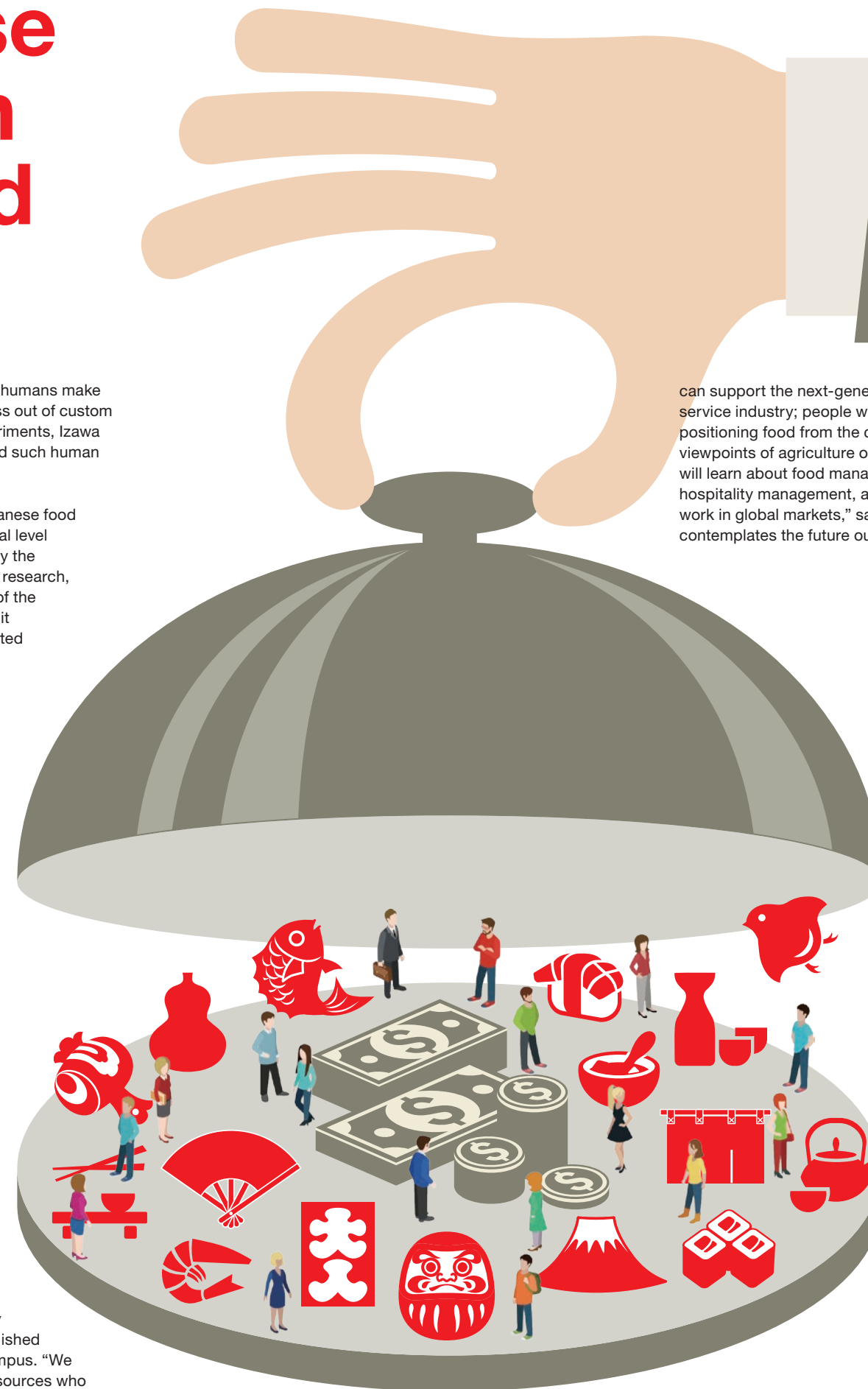


Hiroshi Izawa

Professor, College of Economics

Subjects of Research: Experimental study of risk preferences, empirical study of Japanese financial systems and banking, industrial organization of Japanese banking industry, behavioral economic analysis of financial decision making, behavioral economics of food selection

Research Keywords: General theory of economics, public finance, money and banking



The Japanese food business is overwhelmingly behind the rest of the world.

Microorganisms to Bring about a Change in Japanese Agriculture, Beginning with the Soil

Shocking data suggests that Japan's use of chemical fertilizers and pesticides is among the highest in the world. Compared to European countries, where regulations are very stringent, the actual volume of use is said to be several or even ten times greater. "The issue is not just the volume of chemical fertilizers and pesticides being used," says Motoki Kubo. "Vegetables that grow in farmland where such chemicals have been used for a long period of time are extremely low in nutrients." Over the past 50 years, when agriculture using chemical fertilizers and pesticides become the norm, the vitamin A content in carrots has decreased to about a third of previous levels, while the vitamin C content in spinach has been reduced to less than a quarter.

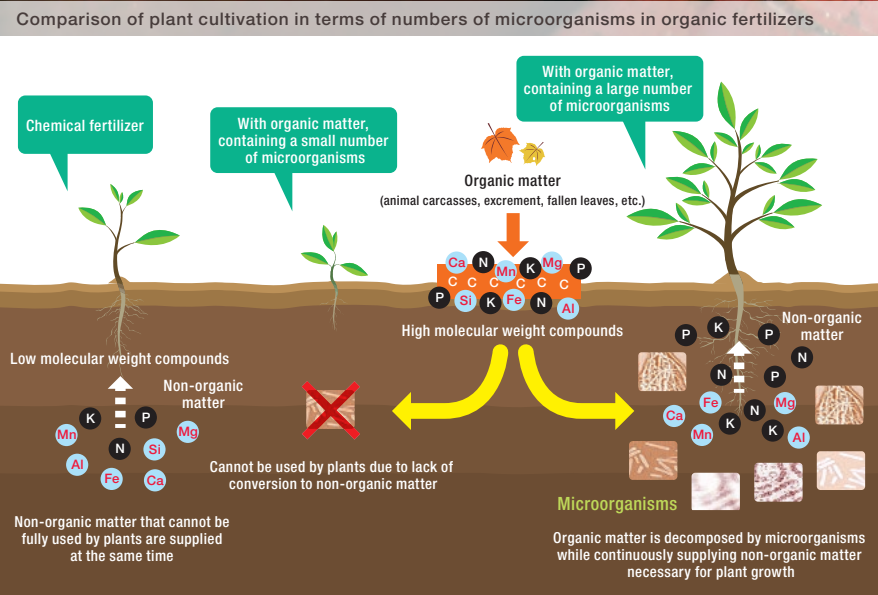
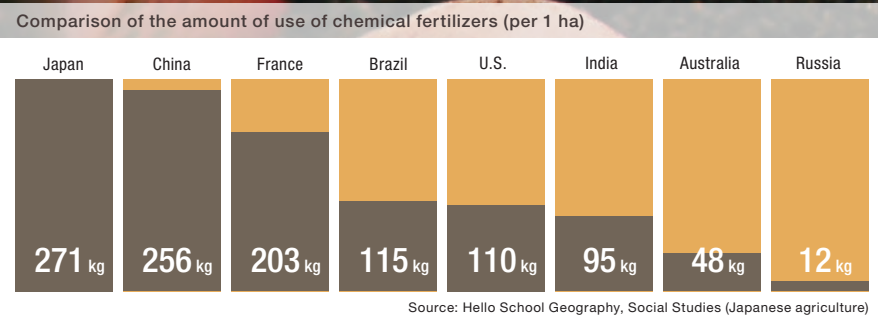
One of the main differences between

soil exposed to chronic use of chemical fertilizers and natural soil is the amount of microorganisms. Previously on farmland, organic matter such as fallen leaves and manure from animals was decomposed into non-organic matter by microorganisms in the soil, and using these natural fertilizers, agricultural produce could be grown. However, chemical fertilizers do not decompose, and are directly absorbed by plants—and without the food provided by organic matter, microorganisms die off. According to Kubo's research, there are quite a few farmlands in Japan where the number of microorganisms is so close to zero to be measured. In soils without microorganisms, plant pathogens and pests breed easily, resulting in a vicious cycle in which more and more pesticide is needed.

For the sake of food safety, it would be ideal to grow healthy vegetables without any chemical fertilizers or pesticides. But if growers begin haphazardly practicing organic agriculture on farmland where such substances have been used for many years, produce will not immediately grow. "To recover material circulation in the soil, it is necessary to increase the number of microorganisms to function as an engine," says Kubo, who is trying to encourage a recovery in Japanese organic agriculture by applying science with the keyword, microorganisms. Developed by Kubo as an index of fertility in soil is the Soil Fertility Index (SOFIX) which will function as a guide.

To judge the fertility of soil, SOFIX measures the amount of microorganisms and the conditions that facilitate their activity. Kubo first extracted and analyzed environmental DNA (eDNA) from soil and developed a unique technology to quickly and accurately measure the amount of bacteria. This was followed by a study of soil conditions which allow microorganisms to be easily activated. "What is most important for the activity of microorganisms is a balance between carbon and nitrogen which function as their nutrients," Kubo says. Because microorganisms do not propagate when carbon and nitrogen are input at random, he identified the optimal ratios of carbon to nitrogen. Based on these studies, he developed biological indices to track factors such as the circulation of nitrogen and phosphorus. He then went on to establish a total of 19 indices by combining his biological indices with chemical and physical analysis. The results of measurements based on these indices are represented in graphs, diagrams, and scores, thereby providing a mechanism for instantaneously diagnosing the level of soil fertility.

Once the fertility of soil can be diagnosed using SOFIX, we can then move on to taking steps toward actually improving the soil based on the information. "It all starts with the input of quality manure and organic materials to achieve the optimal



Results of soil diagnosis using SOFIX. Soil is improved based on data to optimize the balance between carbon and nitrogen.

SOFIX: Farmland Sample name Onion field (after planting)

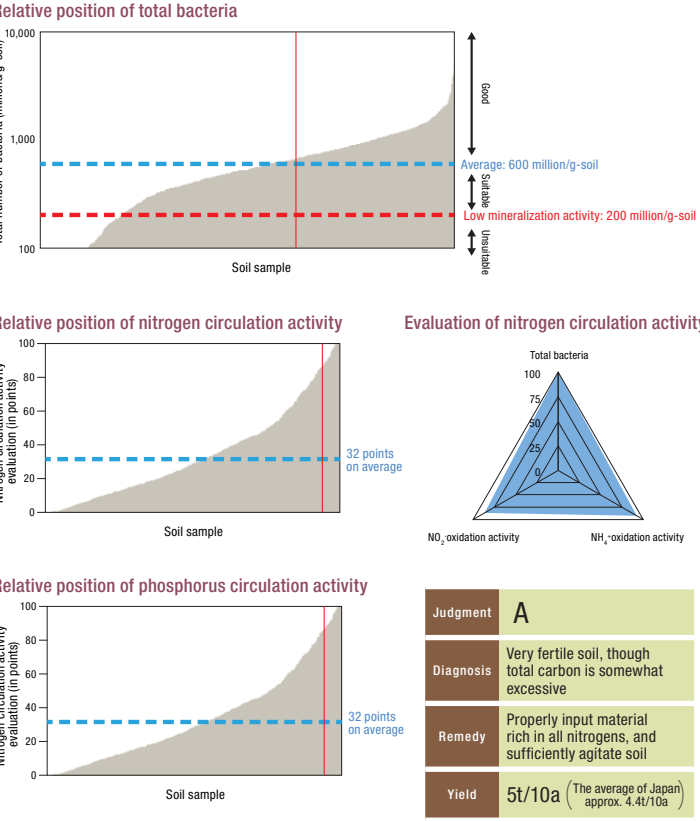
Measured values and evaluation

Measured value of components relevant to material circulation (items pertaining to biological properties)			
Measurement items	Recommended values (field)	Measured values	Evaluation
C/N ratio	10~20	28	↑
C/P ratio	23~46	14	↓
Total carbon (TC) (mg/kg)	≥25,000	45,060	✓
Total nitrogen (TN(N)) (mg/kg)	≥1,500	1,620	✓
Total phosphorus (TP(P)) (mg/kg)	≥1,100	3,290	✓
Total potassium (TK(K)) (mg/kg)	2,500~10,000	10,790	↑
Nitrogen circulation activity evaluation results (in points)	≥38	85	✓
Total bacteria (millions/g)	≥600	670	✓
Ammonia oxidation activity (in points)	≥41	90	✓
Nitrous acid oxidation activity (in points)	≥70	87	✓
Phosphoric acid circulation activity evaluation (in points)	≥30	71	✓

Chemical and physical properties

Measurement items	Recommended values (field)	Measured values	Evaluation
Nitrate nitrogen (mg/kg)	≥10	44	✓
Ammonium nitrogen (mg/kg)	≥10	2	↓
Water-soluble phosphate (Converted to P ₂ O ₅) (mg/kg)	≥50	220	✓
Water-soluble phosphorus (Converted to P) (mg/kg)			
Water-soluble potassium (Converted to K ₂ O) (mg/kg)	≥50	680	✓
Water-soluble potassium (Converted to K) (mg/kg)		680	
pH	5.5~6.5	6.68	↑
EC (dS/m)	0.2~1.2	0.6	✓
Water content (%)	≥20	51	✓
Maximum water retention capacity (ml/kg)	400~600	3	↓

Evaluation based on database



Realizing organic agriculture to improve both safety and productivity

balance between carbon and nitrogen based on diagnostic results, to create soil in which diverse microorganisms will increase," explains Kubo. In this way, when the soil is improved such that it becomes an environment in which diverse microorganisms will propagate, to our pleasant surprise, plant growth is accelerated to a greater degree compared to when chemical fertilizers and pesticides are used. Based on SOFIX, Kubo has improved farming environments in plant factories and SOFIX experimental fields, cultivating five types of vegetables including tomatoes and Japanese mustard spinach. He has been able to confirm that, compared to agricultural methods involving chemical fertilizers, the plants grow much better and to greater sizes—and with increased yields.

In parallel with these demonstration tests, he has used SOFIX to accumulate diagnostic results on the fertility of agricultural land across Japan. His database now contains more than 4,000

cases. While taking advantage of the analysis results for his studies, he is also working on producing instructions for improving farmland, in direct response to requests from farmers across Japan.

Furthermore, Kubo says, "However good organic vegetables are in terms of their health properties, the business model is not sustainable if it increases the burden on farmers," emphasizing the necessity for business models that involve profitable organic agriculture. He demonstrates that with organic agriculture based on SOFIX, not only will the yield increase, but material costs such as manure can be drastically reduced in comparison to using chemical fertilizers. He also calculates that producers can earn higher profits compared to conventional agricultural methods using chemical fertilizers by selling added-value "Safe and high nutrient" vegetables at higher prices.

To realize this goal, Kubo is currently working on establishing a "SOFIX soil fertility certification" as a means to certify

quality agricultural land based on SOFIX. In addition, he is considering developing "Soil consultants"—experts who can analyze the figures obtained from SOFIX and provide advice on improving soil—and establishing a certification system for this purpose.

A major supermarket chain in Shiga Prefecture has started to sell "SOFIX vegetables" grown using SOFIX-based organic agriculture in their stores. The time when "SOFIX vegetables" become popular all over Japan as a safe and secure brand of vegetables is coming closer.

Motoki Kubo
Professor,
College of Life Sciences

Subjects of Research: Study of material circulation-based food production, study of petroleum cracking, study of liquid waste treatment, study of new uses of biomass resources

Research Keywords: Environmental microorganisms, bio-functions, environmental science

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Food

RITSUMEIKAN

UNIVERSITY

Conducting

research

in

cooperation

with local

economies and

communities,

based on food

Regardless of the campus, Ritsumeikan University actively promotes cooperation with local economies and communities using the keyword, food. The activities involved are diverse, ranging from communication with communities, through the introduction of agricultural produce, to joint studies on the establishment and development of sales models for agricultural products and the promotion of local consumption for locally made products. Ritsumeikan University will continue with such research activities and new value creation based on food.

Ritsumame Natto, natto mochi

Keihoku Project, College of Social Sciences

By sourcing local resources in the Keihoku region and proposing ways to utilize them, the Keihoku Project has since 2008 embodied the creation of local economic activities. With the aim of initiating agriculture-commerce-industry cooperation in the Keihoku region, the project has commercialized a new brand of natto (fermented soybeans), called Ritsumame Natto. The project has also seen the development of a Japanese sake that is made from rice produced by the project right from the planting stage, called Ichiyoraifuku. Recently, the project communicated broadly about natto culture in the Keihoku region, which is considered to be the place of origin of Waratsuto Natto (fermented soybeans covered in straw). In addition, to play a role in the so-called “6th sector industry,” the project has focused attention on natto mochi (rice cakes into which fermented soybeans are kneaded) and developed a product that young people can enjoy in the form of a sweet: “Keihoku Somabito no Sato: Natto Mochi,” which is available for sale at Woody Keihoku, a rest area in the Keihoku region and in the Yamaguni Sakigake Center. The project plans to mainly work on the “Shoku no Satooya Project,” under the themes of “Promoting local consumption of locally made products” and “Food education for university students.”



Rits-Farm Project

College of Social Sciences



In this project, which started as a spin-off from the Keihoku Project, students cultivate Kyo-yasai (specifically certified vegetable varieties grown in Kyoto) and fruit at a rental farm for local citizens in the Keihoku region and sell the harvested vegetables and other produce at the “Keihoku Marché”—a market held at the Kinugasa Campus of Ritsumeikan University. The produce is also supplied wholesale to bakeries across the Keihoku region for use as ingredients. This project very much involves activities based on food as well as agriculture—for example, renting a cafe in the city for a day and offering dishes to young citizens using vegetables produced in Keihoku. In the 2016 school year, they visited Akita Prefecture to learn about other activities taking advantage of figs and jointly hosted cooking classes with other organizations of the university.



Town revitalization activity in Hiyoshi Town, Nantan City

Ritsuko Kawamura, Professor, College of International Relations

Professor Ritsuko Kawamura's college seminar group is engaged in a town revitalization project aimed at invigorating the region through agricultural production and sales of produce in Hiyoshi Town, Nantan City. Residents of the Yotsuya and Sasae areas of Hiyoshi—where depopulation and aging are serious issues—work alongside Ritsumeikan University students to operate the Asaichi café in Kyoto, where they sell locally harvested vegetables and dishes as well as seasonal offerings that make ample use of produce from Hiyoshi. Through these activities, the seminar group actively works to conserve agricultural environments, encourages further settlement in the area, promotes intercity exchanges, and propagates local information.



Junmai Daiginjo (super premium pure rice sake), “Hisshonosake Kachiumamai”

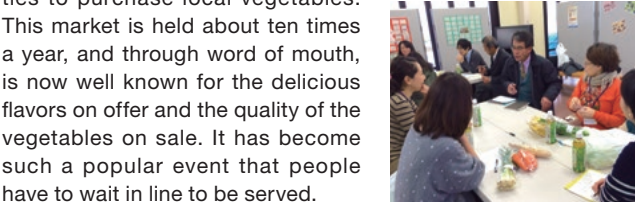
Motoki Kubo, Professor, Department of Biotechnology, College of Life Sciences

Seishu Kachiumamai is a highly refined premium sake manufactured by incorporating the university's knowledge into a 6th sector industrialized product. The product is based on a new concept whereby a scientific grounding is added to agricultural products to create products of high added value, which are then developed into a brand. Rice cultivated using organic horse manure produced by race horses at the Japan Racing Association (JRA)'s Ritto Training Center, in Shiga Prefecture is processed into sake by Konishi Brewing. Professor Kubo, of the College of Life Sciences, applied his technique of soil fertility diagnostics based on microorganisms (SOFIX) to scientifically prove the sake's high quality, safety, and security. Sold both in Japan and overseas, the sake has become very popular and has won a Superior Taste Award (Three Stars) from the International Taste & Quality Institute (iTQi) two years in a row.



Locally produced! Shunsai Marché@BKC

Held by the Biwako-Kusatsu Campus and Ritsumeikan Co-op with cooperation from JA Ohmifuji (Moriyama City) and JA Kusatsu, the “Locally produced! Shunsai Marché@BKC” is a regular event at which locally produced vegetables are sold at the campus to students, teachers, and faculty members. This initiative started in 2012 as part of the Research Core forming the Ritsumeikan Global Innovation Research Organization (R-GIRO) research programs with the theme, “New food research cores by 6th sector industrialization in agriculture and fisheries,” with “The core of developing a regional core model for ‘Slow and local’ innovation in Food and Agricultural Industries,” a program of the Center of Innovation Science and Technology's Radical Innovation and Entrepreneurship Program (COI STREAM) that was launched by the Ministry of Education, Culture, Sports, Science and Technology. The initiative aims to promote local consumption of locally made products and provide students, teachers and faculty members of Ritsumeikan University with opportunities to purchase local vegetables. This market is held about ten times a year, and through word of mouth, is now well known for the delicious flavors on offer and the quality of the vegetables on sale. It has become such a popular event that people have to wait in line to be served.



Japanese Migrants Fishing in Pre-war Canada



Collection and delivery ship carrying salmon to a cannery. A weighing machine can be seen at the stern (left side of the picture).
Photographs: Takasaki Family Collection (Ibusuki, Kagoshima Prefecture)

For Japan, surrounded as it is by ocean, fish have always been one of the most important sources of food. Looking back at the history of the fisheries that have long supported the dietary needs of the Japanese population, it is known that before the Second World War, a large number of people traveled across the seas in search of work and a place to call home. While studies and reports are abundant in terms of agricultural immigrants who moved to Hawaii and North and South America, details on fishing-immigrants are rather scarce, as are the actual number of studies. But Norifumi Kawahara is shedding a light upon such fishing-immigrants—who have remained to a great extent unknown. What is especially noteworthy is the fact that Kawahara defined the realities of life and work of Japanese fishermen through an approach to historical geography based on—for example—fire insurance plans.

According to Kawahara, fire insurance plans are in fact large-scale maps that insurance companies use to assess the risk of fires associated with factories and facilities in neighborhoods to manage insurance claims following a

fire. These maps have been issued since the late 19th century in England, America, Canada, and other countries. Kawahara carefully analyzed the maps and identified very interesting facts about the Japanese migrants to Canada around 1920.

An interesting example is the presence of migrant fishermen who worked in the salmon canning industry in British Columbia (BC), in Canada. Looking at fire insurance plans in the 1920s, there were about one hundred salmon canning factories (canneries) located along the BC coast, close to Steveston at the mouth of the Fraser River. They were run by British Canadians, who employed many Europeans, Japanese, and Chinese, in addition to a number of locals. “An interesting thing is that the labor was divided such that Japanese caught the salmon, Chinese canned them, while the locals provided supplementary labor,” explains Kawahara.

Kawahara confirmed that at the same time, canneries to the north of BC very rarely had any Chinese workers. Instead, Europeans monopolized the most important roles, while Japanese and local people were responsible for both fishing and canning operations—illustrating

significant regional differences in the system in terms of division of labor.

Following this, Kawahara worked out the family structures based on the housing conditions. “Referring to fire insurance plans and photographs from those times, it can be clearly seen that there were multiple forms of worker residences adjacent to the canneries. Chinese people lived in lodgings which were known as ‘Chinese bunks.’ At the canneries, Chinese men often worked away from their families, living in bunkhouses in which double bunks were arranged. The houses where the Japanese lived were known as ‘Japanese Cabins,’ and it is apparent that these dwellings comprised independent or row houses—albeit very simplistic ones. This was because many fishing migrants from Japan lived with their wives and children in family units. In addition, locals mostly lived in ‘huts.’”

Kawahara also attracts attention by discussing the roles of workers from Kagoshima Prefecture, which until that point had been largely ignored. What really interests him is that the people from Kagoshima Prefecture—whose work had nothing to do with fishing—became

involved in the salmon canning industry in northern BC.

“People from southern Kagoshima Prefecture initially went to Canada as contract immigrants to work in mining or railroad maintenance, but as this work was very hard and dangerous, many of them turned to the salmon canning industry at the termination of their three-year contracts,” Kawahara surmises. “However, southern BC already had immigrants from Wakayama Prefecture who were highly skilled in the fishery industry, so they were probably forced to work for small but relatively new canneries in places other than Steveston, such as the Brunswick Cannery or even in canneries in the north.”

Kawahara is also expanding the scope of his research to fisheries other than salmon. One of these is whaling, which involves the extraction of whale oil; and he has again shown that

Japanese played an important role in the dismembering of whales.

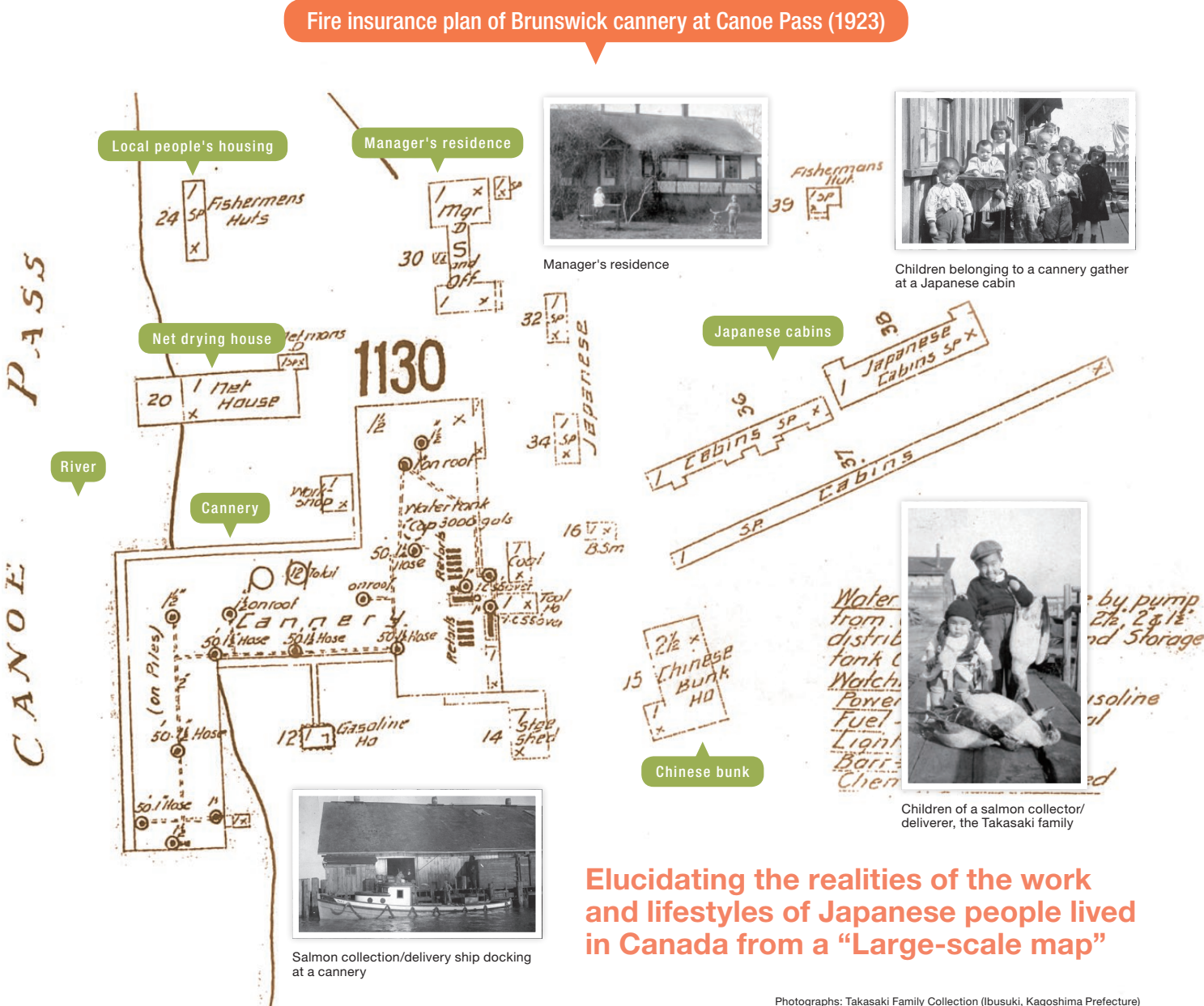
Another topic Kawahara has looked into is the Japanese engaged in the herring processing business. Canadian fisheries didn’t attach the same level of importance to herrings as they did salmon, and the herring industry was monopolized by Japanese fishermen for a period in the 1920s and 1930s. Perusing documents such as “Kaigai niokeru Honpoujin no Gyogyojokyo (The Situation of Japanese Fisheries Overseas)” and “Kanada-Taiheiyō-Gan Nishin Ohirame Gyogyochosahokoku (Fishery Survey Reports on Herrings and Halibuts on the Pacific Coast of Canada),” by the then-Ministry of Agriculture and Commerce during a fact-finding survey of second generation Japanese immigrants involved in herring fisheries, Kawahara uncovered many precious facts. “Japanese fishermen

in Canada caught herrings coming into the Strait of Georgia and established a global distribution network that exported them to Japan and Japanese colonies such as Korea and Taiwan,” a smiling Kawahara explains. “It’s so interesting to follow such dynamic movements that were unique to fishing migrants in the Pacific region.”



Norifumi Kawahara
Professor, College of Letters

Subjects of Research: Geographical study concerning the migration and job changes of fishermen in the present day
Research Keywords: Historical geography, study of Canadian-Japanese immigrants



Elucidating the realities of the work and lifestyles of Japanese people lived in Canada from a “Large-scale map”

Photographs: Takasaki Family Collection (Ibusuki, Kagoshima Prefecture)

Advertising, That Implies Hidden Qualities

Let's say you come across a recently-launched canned coffee at a convenience store. You can't know of course whether it tastes good unless you buy it. Will you buy it or not?

"Those products or services whose true value can be revealed only after purchasing or trial use are referred to as 'experience goods.' Products or services that can be evaluated easily before purchasing by their appearance are known as 'search goods', while 'credence goods' are those whose quality cannot truly be recognized for a substantial period of time after purchasing or starting to use. A typical example of credence goods is life insurance," explains Takashi Hayakawa, who studies the field of marketing communication—the communication of the value of products and services to consumers.

It is easy to tell a lie about the quality of experience or credence goods, if a seller want to do so. Therefore, if there were no mechanisms to prevent sellers to deceive, the market would be flooded by unreliable experience or credence goods, which make the market mechanism cease to function sooner or later. The license mechanism is one of the effective means for keeping the quality of experience or credence goods high enough to maintain the function of market.

"In academic parlance, a mechanism—such as a license—that communicates and guarantees hidden functions and qualities of products is known as quality signaling," says Hayakawa. The term of "signaling" means actions to help transaction to be settled by informing of hidden qualities, which can't be known directly, through providing the "signal" that is an indirect but obvious clue of hidden qualities. Advertising is also a way of quality signaling. It is true that advertising attracts consumers by well-

refined messages and thereby increase sales of seller-advertiser. On the other hand, interest and attention of buyers-audience raised by advertising eventually make it function as a "signal." If the message gives a false impression of the quality, the level of interest and attention will directly serve as a force to punish the advertiser.

Most foodstuffs are experience goods. Major food manufacturers are well known because they properly communicate hidden quality through "signal" including advertising. In the area of food advertising, Hayakawa discusses The Foods with Function Claims, for which "advertising must play especially important roles as 'quality signals.'" The system of "Foods with Function Claims" was enforced in April 2015 as a new framework for the regulation of food with functional claims. Different from Foods for Specified Health Uses (FOSHU), which require strict screening on a national level as well as clinical testing, Foods with Function Claims do not require clinical testing, and their functions may be indicated in the form of scientific research reviews proving the mechanisms of their components. The system of Foods with Function Claims was introduced as a deregulatory move aimed for consumer benefit at increasing the number of health foods that can indicate their effects and efficacy in an easy-to-understand manner.

"If it's easy to obtain an indication for a food with a functional claim, the effect of the license as a quality signal is weak. So it's necessary to compensate for this weakness with a different signal," says Hayakawa. "One of the way for it is advertising."

By clearly indicating the health functions of foods, with functional claims, advertising was expected to be able

to communicate those functions more effectively. As such, they were actively developed with a view to increasing sales. However, in reality, goods registered as Foods with Function Claims have sometimes seen a decrease in sales from the level prior to registration. "The advertising messages regarding effects and efficacy that are allowed for Foods with Function Claims may not win the hearts of consumers," says Hayakawa. Counterintuitively, deregulatory moves expected to enrich advertisement expressions may in fact narrow down the range of expressions.

If sales of registered goods do not increase, people may eventually stop using the system. "In any case, advertising has the function of properly communicating the value of a product to consumers, so sellers need to improve their advertising skills, while regulators should continue their efforts to adjust the system such that it meets the original purpose of the policy," Hayakawa says.

The issue of marketing communication is closely related to that of market information that affects the viability of the market at its very core. "In particular, in the case of food whose quality may threaten life, the role played by marketing communications is substantial," says Hayakawa, illustrating the significance of his research.



Takashi Hayakawa

Professor, College of Policy Science

Subjects of research: Advertising as a mechanism assuring product quality, asymmetric information matters of industrial goods markets
Research keywords: Commerce, management, economic policies

Is it possible for Foods with Function Claims advertising to win consumers' hearts?

Agribusiness cannot succeed without consistently covering everything from production to processing, distribution, and consumption.

In October 2015, Shima City in Mie Prefecture, was harvesting its specialty crop, Hayatoimo sweet potatoes. During this time, students and teachers from Ritsumeikan University and Mie University participated in the harvesting of a certain field. Among some of those earnestly digging were the leaders of this particular project, Toyohiko Matsubara and Shigenori Kusuoku.

In the region of Shima, Kinkoimo—a type of dried potato made using

Hayatoimo—has traditionally played an important role as a reserve food and as an easily carried ration. In recent times though, due to a decrease in the number of producers or farmers, the volume of production has fallen dramatically. In response to a request by the Shima City government to “devise a mechanism to increase the production of Hayatoimo from the viewpoint of 6th sector industrialization in agriculture (Value added activity of agriculture),” Matsubara is now working

with the city and Mie University to further develop products using Hayatoimo.

“The problem with the food production system in Japan thus far has been its evolution focusing only on production,” Matsubara says. Despite the nationally-promoted aim of 6th sector industrialization in agriculture of viewing—and integrating—primary, secondary, and tertiary industries into a single total industry, there have been in fact few successful cases to date.

“Many producers have tried to tackle 6th sector industrialization in agriculture, but they have not been able to grasp the characteristics of agricultural products, regional resources, social needs, etc. in order to develop products; nor have they been able to create adequate mechanisms to distribute and deliver those products to consumers,”

a paste, the labor and time involved in making the Kinkoimo is greatly reduced.”

Currently, they are not only developing distribution channels for the product, but also marketing it as a paste. “By establishing it as an agribusiness, we aim to interest young human resources who feel a certain attraction to the production of Hayatoimo,” says Kusuoku as he takes a hard look towards the future.

While conducting such demonstrative research, Matsubara also focuses on the development of human resources that can take on the 6th sector industry. The “Jitsugaku! Social Business and 6th Sector Industrialization Challenge Seminar” that has been held in Hokkaido and Tokyo since 2015 is one such effort. Through on-site training and workshops, participants

in the seminar not only learn about the concept of 6th sector industrialization in agriculture and the practical know-how to implement it, but also ultimately master the skill of developing a business plan. “I want to develop human resources who have an understanding of primary, secondary, and tertiary industries while also being capable of causing and bringing about innovation by connecting their individual know-how,” Matsubara says. In his lectures, he emphasizes the development of management ability as a core principal.

In addition, Matsubara is heralding a further target, with the thinking that, “as an academic institution, we need to play a role in the accumulation and creation of knowledge, in addition to practical issues.” His aim is not just visualizing knowledge that cannot be expressed

through language such as wisdom in terms of agriculture and fisheries through demonstrative research, but also turning all of the tacit knowledge necessary for 6th sector industrialization in agriculture—including the know-how of processing and distribution—into universal explicit knowledge.

“In the future, I plan to launch a knowledge-creating core in the form of an ‘Agri-Food Lab’ which will bring together people engaged in 6th sector industrialization in agriculture, companies, municipalities, and research institutions such as universities,” says Matsubara. Toward the promotion of 6th sector industrialization in agriculture in Japan, expectations are rising toward a future being created by Matsubara and others.



Seminar students participating in the production of Kinkoimo. All processes of harvesting, drying, and sun-drying were manual, taking at least two months to complete.

says Matsubara. “To qualitatively and quantitatively recover Japanese food production, it is necessary to build a comprehensive system that encompasses production and processes right through to the distribution and consumption of agricultural and fisheries products.” With such a view, and as a representative of “New food research cores by 6th sector industrialization in agriculture and fisheries,” a research program under the Research Core forming the Ritsumeikan Global Innovation Research Organization (R-GIRO), Matsubara is constructing a comprehensive food-agricultural partnership model to integrate all processes from production and processing through distribution and consumption, including both food

education and dietary cultures.

To respond to the request from Shima City, as part of the R-GIRO research program, Kusuoku first held a discussion with the responsible city government officials and Mie University to extract all of the relevant issues and establish targets. “Behind the declining production of Hayatoimo lies the reality that due to the aging of producers, the production of Kinkoimo has become rather difficult,” Kusuoku explains. Making Kinkoimo requires a lot of time and effort. In addition to the cultivation of Hayatoimo itself, the sweet potatoes must be dried for a month, then boiled and dried in the sun for another month, with repeated turning. “To solve this issue, it is essential to reduce the labor involved in the making

of Kinkoimo and attract young people to the task.” Kusuoku and other involved parties came to this conclusion following their discussions and built on the concept of developing a “processed product with a reduced burden on elderly producers” that “represents Shima City,” and which also “takes advantage of the beautiful and golden Kinkoimo.”

In cooperation with a manufacturer of Japanese sweets, a prototype was completed in February 2016. “We had the idea of coating Hayatoimo paste with kudzu (a sweet sauce made from arrowroot starch seasoned with soy sauce and sugar) so that it resembles a golden version of the pearls that are a real specialty of Shima,” Kusuoku explains. “The advantage here is that by using



Prototype Japanese sweets using Hayatoimo paste

Why is 6th Sector Industrialization in Agriculture not Working Out?

Toyohiko Matsubara
(Third from left)

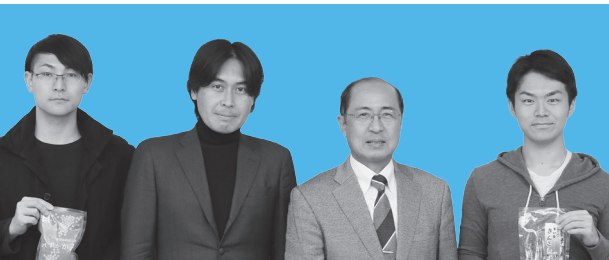
Professor, College of Economics

Subjects of research: Agricultural structures and agricultural administration in Canada, multinational agricultural business, 6th sector industrialization in agriculture
Research keywords: Economic policies (including economic conditions), agricultural economics

Shigenori Kusuoku
(Second from left)

Part-time Lecturer, Ritsumeikan University

Subjects of research: Development of human resources for 6th sector industrialization in agriculture, university education studies from the viewpoint of organizational theory, career education of university students from the viewpoint of organizational theory
Research keywords: Management organization, career education



Photograph: With seminar students who participated in the Hayatoimo project

East Japan Family Support Project: Supplementary Report

Earthquake Disaster Recovery Continues

In 2016, the special feature of the second issue of this journal, “Living with a Disaster,” covered the East Japan Family Support Project. This article reports on current efforts, following up with people living through the period following an earthquake disaster.

Exhibition of cartoons touring disaster-stricken areas held in Kyoto

For nine days between June 27 and July 5, 2015, panels from *Under the Shadow of Family Tree*, a graphic novel by Shiro Dan, were displayed at Sanjo Station on the Keihan Railway in Kyoto. Passengers getting on and off trains, who usually come and go in a hurry, stopped to carefully look at the cartoons.

In the wake of the Great East Japan Earthquake, a cartoon exhibition titled “Mirai no Tameno Omoide: Kokoro Kasanaru Project (Memories for the Future: Project Bringing Hearts Together)” was held as a spin-off of the East Japan Family Support Project, a ten-year exhibition touring four disaster-stricken prefectures. Project leader, Kuniko Muramoto has been working on the project of acting as a witness to the impact of the earthquake and the present state of people living through the disaster and its aftermath.

In addition to hosting a cartoon exhibition reflecting on the Great East Japan Earthquake, the current project—with its theme of “The power to overcome difficulties (resilience)” —has the objective of actively researching the concept of “mental disaster prevention.” Over and over while touring disaster-stricken areas and hosting cartoon exhibitions, Muramoto and Dan witnessed the different reactions of people who read the cartoons. “*Under the Shadow of Family Tree* doesn’t deal with the earthquake or the disaster,” says Muramoto. “But all of the stories illustrated have a universal quality and appear to be able to bring up the personal experiences of readers in encountering and overcoming difficulties and tragedies.” In the research, she aimed to shine a light on what was elicited in individual hearts and minds. Reading a story about facing and overcoming a difficulty, and thinking about one’s own experiences and becoming able to think, “Many things happen in everyone’s lives, but people still manage to continue somehow” serves as an attitude that helps—and indeed provides a source of encouragement—when facing difficulties. She believes this is the essence of “Mental disaster prevention.”

Emphasizing the “power to overcome difficulties” that we all possess

Based on the counseling approach of eliciting one’s “power to overcome difficulties,” Muramoto came up with three questions—namely, “Your impressions of the cartoon exhibition,” “How you overcame difficulties in your life,” and “Your advice for people facing difficulties now.” At the site of the cartoon exhibition and with the help of 20 graduate school students and graduates of Ritsumeikan University studying under Muramoto and other faculty members, she conducted interviews, collecting some 250 opinions over the nine-day period. “Experiences of war, experiences of risking one’s life, the death of someone familiar... In interviews lasting just a few minutes, amazing stories beyond our imagination were heard.”

Muramoto and her group qualitatively analyzed the interview data, elucidating the meanings of Dan’s cartoons for individual readers and compiling them into “Strategies for overcoming life’s difficulties.” According to these strategies, the power to overcome difficulties comes from “depending on others and gaining strength through our connections,” “taking over our life with determination” and “accepting our destiny as it is—i.e. our philosophy on life.” What Muramoto thinks is especially important in terms of “connecting with others” is loose relationships that are not necessarily tied to direct support. She says, “Just being with someone, and maintaining such a loose relationship leads to a form of resilience.” This is the very reason why Muramoto and her team are spending a decade trying to be witnesses to the disaster and restoration.



Thinking about disaster-stricken areas becomes “Mental disaster prevention”

“It is our responsibility as researchers to turn the results of our surveys and research into theories and practical know-how,” says Muramoto. “However, something that is more important is enabling interviewees to become psychologically prepared for the next disaster by sharing their power to overcome difficulties through the process.” Another benefit from the survey was the impact felt by the graduate school students engaged in the interviews, in addition to the interviewees. Being surprised by and feeling gratitude toward the strangers who responded to the requests and discussed their dramatic lives, the students learned that everyone has a history of living up until that point, and made them reflect that the project became their own “Mental disaster prevention.”

The real meaning of such an effort is “Going beyond the framework of existing support,” explains Dan. “Although there are many methodologies in which support is provided by experts in different fields, there are always some people who are still suffering. For these people, we probably need a completely different framework from the conventional ones.”

With disasters occurring frequently all over the world, this is not a matter for other people. “What is important is that everyone continues to think about disaster-stricken areas, remembering that ‘this could happen to me,’” Muramoto says. “That will create the power to stand up again for disaster survivors and also help yourself when you face some difficulty.” Her words sound as though they are directed at everyone.

Under the Shadow of Family Tree Todokeru! (Delivering!) Project

A special version of *Under the Shadow of Family Tree* was launched as part of the overall disaster support. If, after reading this article, you feel a strong desire to send a copy to a certain person or if you have a heart-felt urge to present the booklet, we can send up to 10 copies per applicant to a designated address. For further details, please visit the “Todokeru! (Delivering!) Project” website.

<https://www.facebook.com/kokagenomonogatari>



Kuniko Muramoto (Left)
Professor, Graduate School of Science for Human Services

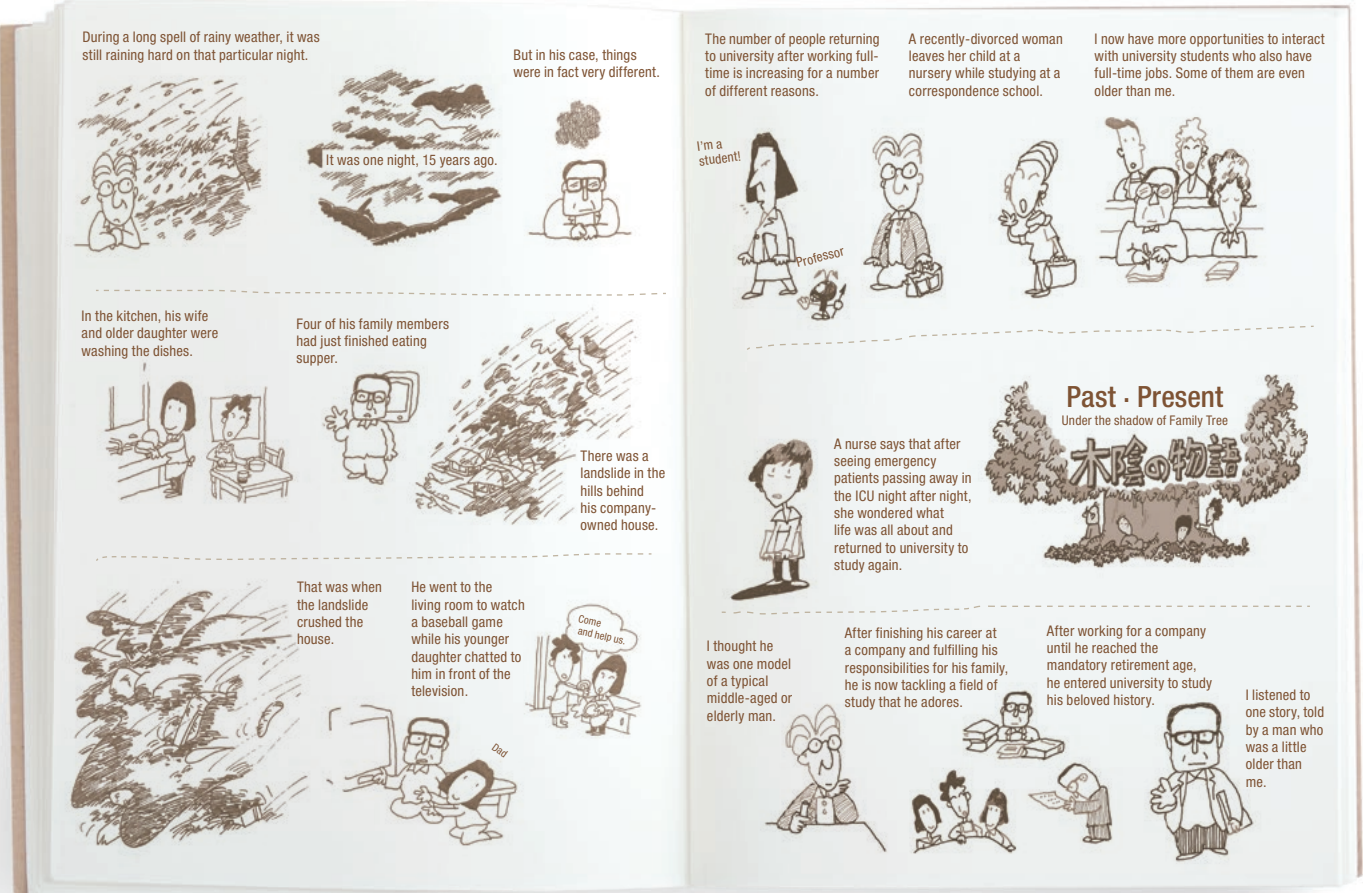
Subjects of research: Child-rearing support and prevention of child abuse, clinical support of women and children affected by domestic violence, sexual abuse, etc., intergenerational traumas caused by war, disasters, etc. and peace education

Research keywords: Clinical psychology

Shiro Dan (Right)
Professor, Graduate School of Science for Human Services

Subjects of research: Actuality of family support issues

Research keywords: Family therapy



RESEARCH TOPICS

Commissioned Research Fund Implementation No.1 for Two Consecutive Years

On January 13, 2017, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) published the AY2015 Industry-Academia-Government Collaboration Activities at Universities. For the second year running, Ritsumeikan University was Japan’s top-ranking institution nationwide (total of 287 programs; 247 in AY2014) for the amount of research commissioned and funded by private-sector industry.


MEXT conducts the Industry-Academia-Government Collaboration Activities at Universities survey on an annual basis, with the aim of reflecting the results of the surveys in the planning of industry-academia collaboration, among other initiatives. The survey covered 1,071 institutions including national, public, and private universities (including junior colleges), national, public, and private technical colleges, and inter-university research institutes. Since 2006, Ritsumeikan University has consistently heralded industry-academia-government collaboration as a very important pillar of the social contributions it makes through its research activities, with the institution focusing particularly on collaboration with local companies in Kyoto, Shiga, and Osaka Prefectures. In a category titled Intra-Prefecture Joint and Collaborative Research with Corporations and Local Municipalities (by Region), which was announced for the

Amount of Research Commissioned and Funded by Private-Sector Industry			
No.	Name of institution	Number of programs	Category
1	Ritsumeikan University	287	Priv.
2	Kindai University	275	Priv.
3	Keio University	196	Priv.
4	Nihon University	169	Priv.
5	Waseda University	155	Priv.

Commissioned research: Institution with Greatest Increase in Commissioned Research Year on Year			
No.	Name of institution	Number of programs	Category
1	Ritsumeikan University	40	Priv.
2	Kindai University	36	Priv.
3	Nagoya University	24	
3	Jichi Medical University	24	Priv.

Commissioned research: Institution with the Greatest Average Growth in Accepted Amounts from AY2010 to AY2015			
No.	Institution	Average growth rate	Category
1	Ritsumeikan University	About14.9%	Priv.
2	Kindai University	About12.0%	Priv.
3	Waseda University	About7.4%	Priv.

Category Priv.: Private university; blank: National university
Ministry of Education, Culture, Sports, Science and Technology, AY2015 Industry-Academia-Government Collaboration Activities at Universities



AY2015 Industry-Academia-Government Collaboration Activities at Universities
http://www.mext.go.jp/a_menu/shinkou/sangaku/1380184.htm

first time, Ritsumeikan University was ranked first among all private universities in the Kinki region. Ritsumeikan has worked to improve its research support system through internal financing in addition to forming research cores and producing results that lead to additional external funding. These efforts have resulted in the university also taking out the number one spot in a number of categories such as “Institution with Greatest Increase in Commissioned Research Year on Year,” and “Institution with the Greatest Average Growth in Accepted Amounts” from AY2010 to AY2015.

Selected for Private University Research Branding Project

Ritsumeikan University was selected for the AY2016 Private University Research Branding Project (Type B)* that was announced by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in November 2016. As its contribution to the formation of a model for a sustainably developing society in the 21st century, Ritsumeikan University established the Ritsumeikan Global Innovation Research Organization (R-GIRO) under the leadership of the chancellor in AY2008. The aim of R-GIRO is to develop solutions to policy issues to confront the challenge of forming the aforementioned model. Under R-GIRO, research cores have been established with the aim of “realizing a society that can coexist sustainably with nature” while focusing on “solving the negative (destruction of nature on earth) aspects of innovation associated with science and technology” and “tackling the challenge of extending humans’ healthy life expectancy”—all of which resulted in improving the university’s branding power. Capitalizing on Ritsumeikan University’s strengths as a university, R-GIRO has advanced studies in the field of medicine and health beyond the frameworks of natural and social science, ever since its establishment. Recent years have seen the establishment of the College of Sport and Health Science and the College of Comprehensive Psychology, forming a robust foundation on which to study issues relating to aged people such as their exercise levels and mental activity across various fields. Based on the three projects in progress at R-GIRO and by advancing “the establishment of a sustainable development model of aging in Japan through the life support science of Ritsumeikan” through the integration of arts and sciences, this project aims to further accelerate the branding power of the university.

* In AY2016, 198 universities applied for this project, of which a total of 40 were selected (Type A: 13; Type B: 27). Type B (Global Development Type) involves conducting “Research that contributes to the national or international development of an economy and society and the advancement of science and technology through improving advanced and interdisciplinary research cores.”

Kick-off Symposium for Initiative for Realizing Diversity in the Research Environment

On January 31, 2017, a kick-off symposium for the “Initiative for Realizing Diversity in the Research Environment (Distinctive Features Type)” was held at the Biwako-Kusatsu Campus. This initiative was selected for funding under the Development of Human Resources

in Science and Technology Project in AY2016. At the symposium, Yasuko Yamamura, Program Officer in the Department for Science and Technology Program Promotion at the Japan Science and Technology Agency, gave the keynote address. Yoshie Soma, Fellow of the Chemical Society of Japan, gave a lecture on “Realizing research environments in which female researchers can play active roles,” and Masayo Takahashi, of the Riken Center for Developmental Biology, discussed “How to proceed with research of iPS cells.” After an introduction of Ritsumeikan University targets, initiatives, and advanced cases, the panel moved onto a more in-depth discussion on the theme of “Realizing research environments in which female researchers can play active roles.”



Evidence of Effect of Weakened Geomagnetic Fields on Climate Change Discovered

Working with colleagues, Associate Professor at the Research Centre for Palaeoclimatology, Ikuko Kitaba, Centre Director Takeshi Nakagawa, and Professor at the Research Center for Inland Seas at Kobe University, Masayuki Hyodo have discovered evidence of climate-changing clouds formed by high-energy galactic cosmic rays (radiation). Their discovery was announced in *Scientific Reports* (online version) on January 16, 2017. In recent years, climate change due to declining solar activity has increasingly become a matter of concern. This research provides an insight with specific details of climate change that may be caused by the sun, and introduces a new perspective to the discussion of climate change, which tends to focus on greenhouse gases. The research empirically demonstrates that clouds are an important mechanism linking increasingly observed galactic cosmic rays and global cooling.

Life Sciences Research Group Discovers New Evolutionary Model

Working with Associate Professor Hiroki Ashida and Academic Researcher Takunari Kono, both of Kobe University, Professor Hiroyoshi Matsumura of the College of Life Sciences discovered an evolutionary model for a biological function that creates CO₂ from glucose in photosynthesis in primeval, non-photosynthesizing microbes. The group’s research results were published in a British online general science magazine, *Nature Communications* on January 13, 2017.

The research group discovered that methanogenic archaea—which are thought to have existed since before the development of photosynthesis—possess genes similar to those that play a role in photosynthesis, and proved that they use a primitive pathway that closely resembles the metabolic pathway in photosynthesis to synthesize carbohydrates such as glucose and carbohydrates. Going forward, this discovery is expected to resolve the mystery of how the system of photosynthesis developed during the evolutionary process and lead to an increase in food and bio-fuel production through advanced improvements and the application of photosynthetic functions. This research project was jointly conducted by Ritsumeikan University, Kobe University, the Nara Institute of Science and Technology, the Birla Institute of Technology and Science (India), Osaka University, and Shizuoka University.

Relationship between Exercise Workload and Cognitive Function Elucidated

Working with their colleagues, Associate Professor Takeshi Hashimoto and second year doctoral candidate Toshihito Tsukamoto—both of the College of Sport and Health Science—were able to scientifically prove that by exercising with high workloads and especially at high levels of intensity, the improved cognitive function that results from exercise can be sustained for longer periods. This indicates that in order to enhance cognitive function in this manner, it is important to exercise at high workloads—and in particular, to undertake such exercise at high levels of intensity. The results were published in the journal of the American College of Sports Medicine, *Medicine & Science in Sports & Exercise*. It was already known that the magnitude of the health effects of aerobic exercise is influenced by the actual workload, but the relationship between the exercise workload and the increase in and sustainability of cognitive functions had not been elucidated until now. The research group examined the acute effects of different exercise workloads at varying exercise intensities and exercise durations on the cognitive function (executive function) that controls decision-making ability, and scientifically demonstrated that a high exercise workload—especially at high intensity—enables improvements in cognitive function to be sustained for longer following exercise.

Shirakawa Shizuka Institute Holds International Symposium

On December 3, 2016, an international symposium titled “The Present and the Prospects of the Learning by Shirakawa Shizuka” was held. Generally referred to as “Shirakawa Studies,” the research of the late Dr. Shizuka Shirakawa, Professor Emeritus of Ritsumeikan University, continues to have a wide ranging academic influence on many different fields. At the symposium, four panelists—Zang Kehe (China), Zhang Yuwei (Taiwan), No Yohan (South Korea), and Zhang Li (Japan)—were invited from countries that use Chinese characters to discuss the history of acceptance and current status of Shirakawa Studies, and considered the roles it can play in the future development of learning. On the day of the symposium, more than 100 researchers and citizens gathered at the venue to earnestly listen to the lectures and engage in active and open discussions.

6th Asian Food Study Conference (AFSC)

On December 3 and 4, 2016 at Ritsumeikan University's Biwako-Kusatsu Campus, the 6th Asian Food Study Conference (AFSC) was held in conjunction with the 2nd International Symposium commemorating the academic exchange agreement between the National Museum of Ethnology and Ritsumeikan University. Titled, "Exchange and Dynamism of Food Cultures in Asia – Past, Present and Future," the symposium was attended by about 150 food culture researchers. After introductory remarks from Professor Toshio Asakura of the College of Economics, Professor Emeritus at the National Museum of Ethnology Naomichi Ishige and Chairman of the Japan Food Service Association/Chairman & CEO of Royal Holdings Co., Ltd. Tadao Kikuchi, delivered keynote addresses titled "History of Food Culture Exchanges – The Case of Japan" and "Towards the Sustainable Growth of the Food-Service Industry," respectively. In subcommittees, more than 100 research reports covering seven themes were presented. By holding this event, we were able to refresh the sense of awareness of issues pertaining to food culture research and establish an international network of joint studies. In addition, we gained beneficial knowledge toward creating a curriculum for the College of Gastronomy Management, which is scheduled to open in AY2018.

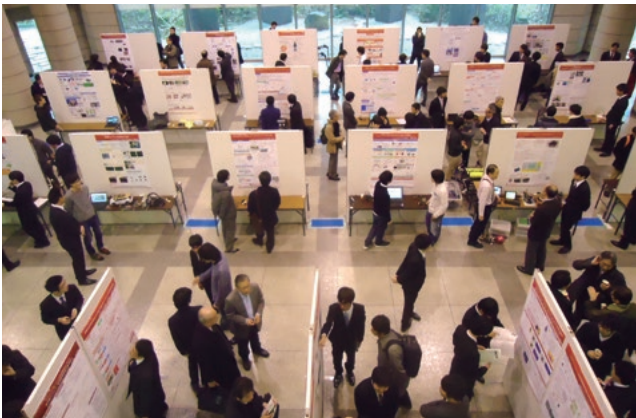


FIELD ROBOTICS: Toward New Developments in Next-generation Technologies Symposium

Sponsored by the Ritsumeikan University VLSI Research Center and the Robotics Research Center, a symposium titled "FIELD ROBOTICS: Toward new developments in next-generation technologies" was held on January 27, 2017. Targeting new developments in field robotics, this symposium also incorporated another symposium being hosted by the Ritsumeikan University VLSI Center, titled "Connected vehicles," as well as a research report meeting on "Research on infrastructural technologies for information-driven mechanical system



that propels growth of the next generation 'satoyama and satoumi,'" which was implemented by the Robotics Research Center as part of the MEXT Supported Program for the Strategic Research Foundation Grant-aided Project for Private Universities (AY2013–2017). Field robotics is a highly prospective technology that can support future generations in the form of automatic driving, drones, agricultural/forestry/ fishery robots, underwater robots, construction robots, and infrastructure assessment robots. The event also featured a special lecture on the future outlook of technology from Carnegie Mellon University's Professor Takeo Kanade, a world-class authority in the field of robotics who was awarded the 32nd Kyoto Prize.



International Symposium Held by Ritsumeikan Inamori Philosophy Research Center

On February 8, the Ritsumeikan Inamori Philosophy Research Center held its 2nd international symposium, titled "Realizing a society based on the Inamori Philosophy." The symposium was attended by about 200 people, including Japanese and overseas researchers, business-people, and students. Following opening remarks by Kazuo Inamori, Director Emeritus of the Ritsumeikan Inamori Philosophy Research Center (and Chairman Emeritus of KYOCERA), John Yang, Professor of Management at the National School of Development (NSD) and Co-Dean of the Beijing International MBA Program at Peking University (BiMBA), gave a keynote address in which he described the increasing adoption of the Inamori Management Philosophy in the management of Chinese companies. Yoshinori Hiroi, Professor of the Kokoro Research Center at Kyoto University also delivered a keynote address. The symposium also featured presentations of final and intermediate research results and a panel discussion. In the panel discussion, five panelists including Ikujiro Nonaka, Professor Emeritus of Hitotsubashi University examined the "Challenges and methods in implementing robust management and a strong society based on the Inamori Management Philosophy."

Professor Kawamura's Project Selected as a START Program

A project led by Professor Sadao Kawamura of the College of Science and Engineering, "Strategic theories and applications of robotic arm operations in visual relative positions," was selected as a "Program for Creating Start-ups from Advanced Research and Technology (START, Project Support Type)" by the Japan Science and Technology Agency (JST). (Project promotion unit: Representative Executive Agency: JAFCO Co., Ltd.) The "technological seed" selected this time was a visual feedback control technology that helps to control fingertip positions and robotic poses by providing visual information from a camera to the robot's joint angle coordinate system. This technology enables robots to achieve highly precise fingertip positions and poses without the normally-required strict calibration and teaching. In response to this selection, the project will proceed through collaboration between Ritsumeikan University and industry under the management of JAFCO, implementing developments in robotic movement control theories in actual applications. In addition, thanks to support from JST, we will commercialize technologies from the university and target the establishment of a venture company in two years' time.

*Program for Creating Start-ups from Advanced Research and Technology (START): a program that utilizes human resource ("business promotion") units with commercialization know-how to bring public funds for R&D and business development together with commercialization know-how, etc. in the private sector, even for technologies in the early stages of development at universities and other ventures. The program thereby creates business and intellectual property strategies and supports commercialization while considering markets and exits with regard to high risk but potential technological seeds. The program aims to establish the Japanese-style innovation model as a sustainable mechanism, while returning research results from universities, etc. to society.

Thesis Prize 2016 from Research Federation "L'Europe en mutation"

Associate Professor Asako Wechs Hatanaka of the College of Law has won the 2016 Thesis Prize from the research federation "L'Europe en mutation." Awarded for an outstanding degree thesis in the field of European research, the prize was established by the research federation "L'Europe en mutation," which is a research institute under the National Center for Scientific Research (CNRS), France's largest basic research institution, comprising seven research centers of the University of Strasbourg. In her award-winning thesis, "Mediation and intellectual property law – A European and comparative perspective," Hatanaka analyzed issues pertaining to mediation theories in European law. Focusing on a comparison between French and English laws, she proposed an approach to optimizing the mediation system for intellectual property laws.

Excellent Achievement Award in 2015 Research Challenges by HPCI Use

Assistant Professor Kota Kasahara of the Department of Bioinformatics in the College of Life Sciences has won the 2015 Award for Excellence in the Application of HPCI for Research Challenges. The HPCI (High Performance Computing Infrastructure) connects

the "K" supercomputer with other major supercomputers installed at universities and research centers across Japan, via a network. Kasahara used HPCI to conduct his research and went on to achieve the excellent research results that earned him this prestigious award. Kasahara used a supercomputer to conduct simulations targeting two transcription factors that are heavily associated with the cancer generation process and which are highly significant in medicine, Ets1 and p53. This enabled the structures and functional mechanisms of these factors to be elucidated, providing knowledge that is expected to be applied to drug developments in the future.

Professor Takahashi Wins KAKENHI Judge Award

Professor Takuya Takahashi, College of Life Sciences, was recognized with a Judge Award for AY2016 Grants-in-Aid for Scientific Research (KAKENHI) from the Japan Society for the Promotion of Science. The Japan Society for the Promotion of Science operates Grants-in-Aid for Scientific Research for the promotion of academic studies, and strives to conduct proper and fair screening of all allocations. The allocation screening for grants is conducted in two stages: A 1st stage (initial document review) and a 2nd stage (panel review). Because the society emphasizes raising the standard of its screening process, a review is conducted after each screening. Based on the results of this review, committee members from the 1st stage who have appended opinions which are significant for the 2nd stage are selected and recognized. In this recognition for AY2016, a total of 268 committee members were selected out of approximately 5,700 members who participated in the 1st stage review. Professor Takahashi was responsible for reviewing documents in the research field of structural biochemistry. On November 30, 2016, Professor Takahashi delivered a report on winning the award to Chancellor Mikio Yoshida and Vice-Chancellor for Research, Kozo Watanabe. Chancellor Yoshida presented a testimonial to Professor Takahashi.



COLUMN #1 The World of Shirakawa's Letter Science

Kanji of the Year
for 2016 “金” (Gold)

Takao Sugihashi

On December 12, 2016, following publication of our previous installment, the “Kanji of the Year for 2016” was announced. It turned out that quite a number of people were actually unable to read the calligraphy of Kiyonori Mori, the Chief Abbot at Kiyomizu Temple, but this was really due to the calligraphic style that he used.

Dr. Shirakawa wrote that “the character ‘金’ is a hieroglyph. It has the shape of a cast lump of copper, among other things, and is considered a generic term for metal. In ancient times, copper was written as ‘金’ (*kane*; one of the pronunciations for ‘金’—which now also means money); however, this character was never established as a meaning for copper, as Japan never had a cultural era like a bronze age.” He also wrote, “When gold, silver, copper, iron, etc., began to be distinguished from each other, people called them, *Kogane* (“ko-kane”), *Shirogane* (“shiro-kane”), and so forth.” He also quotes a famous poem of Yamanoue no Okura from *Manyoshu* (the term Kane (金) in *Jikun*).

銀(しろがね)も金(くがね)も玉もなにせむに
(Shirogane mo kugane mo tama mo nani senni)
まされる寶(たから)子に及(し)かめやも
(masareru takara, koni shikame yamo)
Translation: Can silver, gold, or even a jewel be compared to a child
who is a marvelous pleasure?
No, they cannot.

This is a piece of text that truly displays the profound scholarship of Dr. Shirakawa on ancient societies in Japan and China.

Many different things come to mind in relation to the Japanese sense of beauty and the value of gold and silver. The *Hakuginhi* (silver ratio) that the Japanese people were said to prefer may be just a linguistic expression, but expressions such as *Kinkaku* and *Ginkaku* or the attractiveness of *ibushigin* (literally “oxidized silver”; figuratively “exquisitely polished, yet quiet and restrained”) carry substantial additional meanings. An excessive level of praise for gold appears to have come from China and Europe. This also reminds me of the fact that Japan once accounted for about one third of the entire world’s silver production.

Many of the ancient Chinese characters I have chosen for this series so far are based on the Shirakawa Font, which was recently opened to the public. I had made it a rule to choose characters from the oldest inscriptions on animal bones and tortoise carapaces. But this time around, I picked a character from a next-generation *kinbun* (Chinese bronze inscription).



The Shirakawa Font is an ancient character font that was developed by the Shirakawa Shizuka Institute of East Asian Characters and Culture. About 4,000 ancient characters that correspond to modern Chinese characters are now in common use, which means they can be used for personal names and can be searched for. The provision of a database of such a scale to members of the public at no charge is a first in Japan. Ancient characters are written in three styles of calligraphy, namely kokotsu (inscriptions on animal bones and tortoise carapaces), kinbun (Chinese bronze inscriptions), and tenbun (seal-engraving style). Multiple characters can be batch-converted. Once installed, the Shirakawa Font can be easily used in general text generation software.

[Download] <http://www.ritsumei.ac.jp/acd/re/k-rsc/sio/>

*This research was funded by the Mitsubishi Foundation grants for social welfare activities.

Takao Sugihashi Director of the Shirakawa Shizuka Institute of East Asian Characters and Culture/Tokunin Professor and Professor Emeritus, Ritsumeikan University

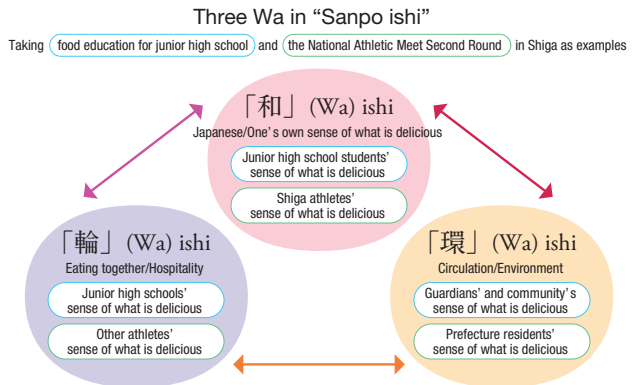
COLUMN #2 Lifestyle recipes

Creating a Delicious Sports Food by
Taking Advantage of the Power of
Local Foodstuffs

Kumiko Ebi

In Japanese, *oishi* is the polite expression for *ishi*, which means “delicious.” *Chori to Oishisa no Kagaku* (Science of Cooking and Deliciousness, edited by Shimada and Shimomura*) defines “deliciousness” as a “sensation felt by a person when he or she consumes food and a taste that is satisfactory in both a physical and mental sense.” In other words, in addition to scientific and physical factors such as aroma or temperature, “deliciousness” not only suggests flavor, but also encompasses a wide variety of components—from psychological factors including feelings to inherited factors such as ethnicity. Looking at the modern relationship between sports and food, the information tends to become complicated—especially when it comes to the ingestion of specific nutrients. It is undeniable that we are gradually moving away from this idea of “deliciousness.”

I constantly feel that deliciousness is proportional to the distance between the cook and the person eating. Local food has the potential to reduce this distance and create “deliciousness” in sports food.



As part of the development of delicious sports foods that take advantage of this power of local food, we planned a “Sanpo ishi” study (refer to illustration). Omi merchants used to have a spirit known as “Sanpoyoshi” (good in three directions), meaning that commerce should benefit not only the buyer and the seller but also society as a whole. Using this concept, we express the *Sanpo* (three directions) of Shiga prefecture’s *Oishi* (deliciousness) as three *Wa* (*Wa* as self/Japanese, *Wa* as a circle, and *Wa* as a ring). And by making the three *Wa* delicious, we aim to create delicious sports foods for the health of individuals living in the community.

As an initial step, we will soon complete “SOY DELI: Omi’s Bean Soldiers” (tentative name), which combines Shiga-produced soybeans with specialties from different regions in the prefecture, as a Shiga version of the “SOY DELI: Kyo’s Bean Soldiers” that were previously covered in this column. After this, we will conduct a survey of food education and begin development of school lunches tailored to the current situation facing junior high school students in the prefecture, with the goal of introducing school lunches in the future. Furthermore, we are designing three “Sanpo ishi”—namely, “Kennaisenshu no ishi” (deliciousness of Shiga’s athletes), “Omotenashi no ishi” (deliciousness of Shiga’s hospitality), and “Kenmin no ishi” (deliciousness of Shiga’s residents) in view of the second round of the National Athletic Meet in Shiga in 2024.

“Making sports food delicious using the power of local foodstuffs.”
Anticipating the satisfied smiles of all of the people involved, we will continue with our studies.

*Junko Shimada and Michiko Shimomura (editors) *Chori to Oishisa no Kagaku* (Science of Cooking and Deliciousness, Cooking Science Lecture 1), Asakura Publishing

Kumiko Ebi Professor, College of Comprehensive Psychology Completed doctoral course second term (Nutrition Science), Graduate School of Nutrition Science, Koshien University in 2007. Doctor of Nutritional Science. Contracted researcher, Department of Sports Medicine, Japan Institute of Sports Sciences, in 2006. Professor at the College of Sport and Health Science, Ritsumeikan University in 2010. Vice Chairperson and Dietetics, Japan Society of Nutrition and Food Science, Japan Sports Association, Japanese Society of Sports Education, Japanese Society of Clinical Sports Medicine, and the Japan Association for the Integrated Study of Dietary Habits.

COLUMN #3 College of Comprehensive Psychology regular column

Psychology Supporting
Restoration in Justice

Kosuke Wakabayashi

Since the First-Phase R-GIRO Research* project, I have aimed for an approach of “knotworking” between the justice system and forensic scientific fields. Regardless of whether one is looking from the perspective of justice or psychology, it is necessary to generate collaboration between a range of academic fields and other relevant people, and target the solution of issues based on multiple perspectives. As a psychologist, I work with jurists and lawyers by conducting psychological analyses of cases in a format appropriate to the framework of the law, and I also provide information.

I serve as core leader of the Third-Phase R-GIRO research project, “The restorative justice toward the era of a declining birthrate and an aging population,” which started in AY2016. Our aim is to propose and implement a legal system that reorganizes relationships with restoration as its core concept. Essentially, based on a new theory of justice called Restorative Justice (RJ), we are seeking an approach that will suit Japanese society, and are aiming to apply it in many different ways.

Primarily, RJ refers to the restoration of the relationship between a perpetrator and a victim. However, the concept of restoration can be considered to be very broad and multi-layered. In addition to providing support for and aiding the recovery of a victim and his or her family, this project also considers the life of the perpetrator as an object of restoration. The majority of perpetrators in modern Japan are recidivist offenders, who have been punished at least once for a certain crime. On hearing this, many people may simply feel that the punishments are insufficient. However, even if a given punishment is made longer or heavier, there are plenty of cases where the only choice such offenders have is to commit a second offence after their release back into society—resulting in even more victims.

For this reason, I believe that restoration can be accomplished in many senses by connecting these people to society once again. To prevent an offender from committing a second offense, he or she should be able to return to society, find a job, and earn a living. Of course, this requires the provision of education and a system of acceptance in society. Thus, communicating this reality to society and improving understanding is one form of restoration (restoration of knowledge). In addition, cooperation across various sectors such as the relevant institutions, communities, companies, and universities—in addition to the people who make them up—is necessary. It is simply impossible to achieve this solely through justice. One of the main targets of this project is to consider restoration in the form of creating and implementing cooperative knotworking between these sectors and actors. It is my fervent hope that many people will develop and show an interest in this approach.



*First-Phase R-GIRO: Specific-domain-based research program of the Ritsumeikan Global Innovation Research Organization (R-GIRO).
For further details, see the R-GIRO website: <http://www.ritsumei.ac.jp/rgiro/>

Kosuke Wakabayashi Associate Professor, College of Comprehensive Psychology Completed doctoral program of Ritsumeikan University’s Graduate School of Letters. Doctor of Letters. After serving as Senior Researcher at the Ritsumeikan Global Innovation Research Organization (R-GIRO) and Associate Professor at the College of Letters, assumed his current position in 2016. Project leader of Third-Phase R-GIRO Research Project. In October 2014, won a 2013 Presentation Award from the Japanese Law and Psychology Association. His publications include *Hou Shinrigaku eno Oyoshakaishin-rigaku Apurochi* (Applied Social Psychological Approach to Law and Psychology), Nakanishiya Publishing.

Research Office

The Research Office has a goal of contributing to society through research exchanges, technological transfers, support of ventures, etc., utilizing the intellectual assets of the university. To centralize information on researchers in the university and their diverse external needs and to promote industry-government-academia activities more smoothly, depending on the challenges involved, we serve as an integrated point of contact for all the various matters associated with research.

Research Office at Kinugasa Campus

Humanities and Social Sciences

College of Law, College of Social Sciences, College of International Relations, College of Letters, College of Image Arts and Sciences, Graduate School of Science for Human Services, Graduate School of Core Ethics and Frontier Sciences, School of Law, Graduate School of Public Policy, Graduate School of Professional Teacher Education

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Research Office at Biwako-Kusatsu Campus

Social Sciences Natural Sciences

College of Economics, College of Sport and Health Science, College of Science and Engineering, College of Information Science and Engineering, College of Life Sciences, College of Pharmaceutical Sciences, College of Gastronomy Management (Scheduled to open in April 2018)

1-1-1 Noji-higashi, Kusatsu, Shiga 525-8577, Japan
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Research Office at Osaka Ibaraki Campus

Social Sciences

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Contact Us

Latest information on research activities



Ritsumeikan University
Research and Industry-Academia-Government Collaboration website
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