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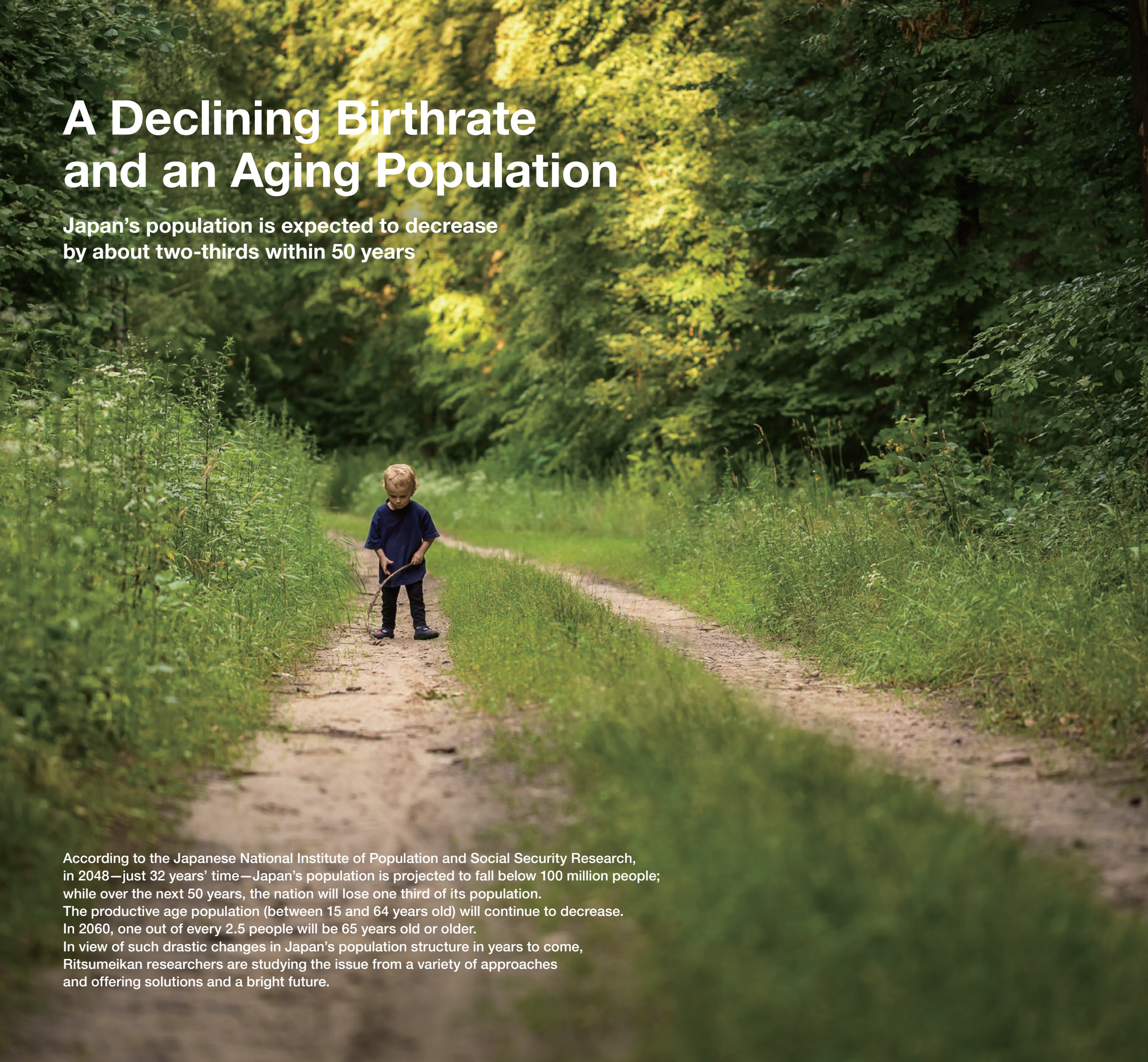
[Special Feature]

**A Declining  
Birthrate  
and an Aging  
Population**

**ISSUE 4**

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# A Declining Birthrate and an Aging Population

Japan’s population is expected to decrease by about two-thirds within 50 years

According to the Japanese National Institute of Population and Social Security Research, in 2048—just 32 years’ time—Japan’s population is projected to fall below 100 million people; while over the next 50 years, the nation will lose one third of its population. The productive age population (between 15 and 64 years old) will continue to decrease. In 2060, one out of every 2.5 people will be 65 years old or older. In view of such drastic changes in Japan’s population structure in years to come, Ritsumeikan researchers are studying the issue from a variety of approaches and offering solutions and a bright future.

RADIANT November 2016 Issue 4

Special Feature:  
**A Declining Birthrate and an Aging Population**

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# Interactive Art That Greatly Changes the Image of Nursing Care

### Wheelchair DJ

The wheels on the wheelchair work as a DJ turntable to play music. Scratching and reverse playback depend on the rider's technique. Beyond just functions like "convenience" and "comfort", interactive media bring values that were not previously available in welfare apparatus, such as "pleasure" and "fun."



## “Cool” and “Fashionable” —Wheelchair DJ brings new value to welfare equipment

When a user sits in the wheelchair and spins the wheels forward like a record, music plays and illuminations flash in response to the speed of rotation. If the wheels are spun backwards, the music plays backwards, and it's even possible scratch like an actual DJ, depending on how the wheels are spun. This *Wheelchair DJ* device is programmed to detect rotational speed via a gyro-sensor mounted on the wheels of the wheelchair and apply it to the playback speed of music.

The device's developer, Shigenori Mochizuki has been researching the use of interactive media to create interactive art, and has created a wide variety of devices based on rather novel ideas. According to Mochizuki's definition, "Interactive art is art that uses a hands-on device to output movement and environmental information as light, sound or image via sensors and computers." His work has a particular focus on interactive media that add new values such as "pleasure" and "fun" to welfare equipment.

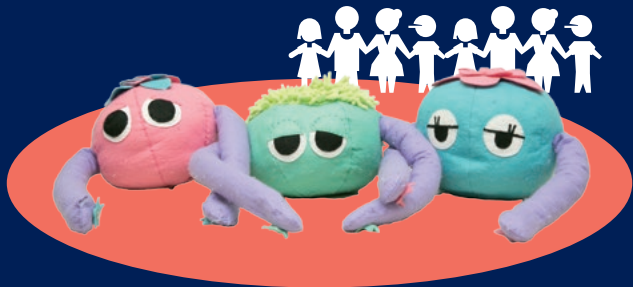
In developing his *Wheelchair DJ*,

Mochizuki has pursued values not available in the conventional world of nursing care and welfare, such as "cool" and "fashionable." Although the device targets people with disabilities, it can also be applied to recreation and rehabilitation at welfare facilities for the elderly. Mochizuki says, "What is interesting is that when I demonstrate the device at exhibitions and other places, many non-disabled people express an interest in it." He hopes that it will be a tool that helps eliminate the negative connotations of nursing care such as "bothersome" and "pitiful" and expand the range of interest to people who don't use wheelchairs, from the viewpoint of concepts such as "cool" and "fashionable." This is why he developed the device as a detachable unit that can be mounted on different types of wheelchairs. He also tried to minimize the cost in view of its general-purpose design. Going forward, with the assistance of corporations and other organizations, his aim is to expand the device's use to a wider range of applications.

Is there anything interactive art can do to better alleviate the mental tiredness that accompanies nursing care?"

When nursing becomes routine, both the caregiver and the person being cared for tend to become mentally tired, which results in somewhat stagnant communication. Mochizuki conducted fieldwork in nursing facilities and day care centers, searching for ways to utilize interactive art to help improve the quality of life (QOL) for elderly people. As part of his efforts, he visited day care centers for elderly people with his students to observe and interview residents and staff members in order to better understand their potential needs. Based on this research, he came up with *Black rotary phone type device* as a tool to invigorate communication among residents and with staff members.

This device is built on a black desktop rotary telephone which is not connected to the phone line. It is controlled by a built-in minicomputer and can simulate incoming and outgoing calls. If an elderly person picks up the receiver when the



### Interactive doll, Tetechan

*Tetechan* is a doll that makes a sound when it is touched or when its arms are squeezed. With *Tetechan*, children hold hands, form a circle, and dance together. This interactive doll induces actions that encourage mutual friendship.



### Black rotary phone type device

A black rotary phone rings in a living space of a nursing facility. One of the users picks up the receiver, and a sound related to the 1964 Tokyo Olympic Games can be heard. "I remember that time..." "Yes, I did, too." As a device to offer an opportunity to start conversations, the black rotary phone has a real function.

### Music Post

*Music Post* was devised to increase opportunities for residents in nursing facilities to send more letters to their family members and friends. When a written letter is inserted into the *Music Post*, nostalgic music is played. "Posting a letter is pleasant." An attractive point of interactive media is to draw out such positive feelings.



an inclusive society in which diverse people understand each other mutually, Japan is still at the development stage. "In four years when the Olympics and Paralympic Games are held in Tokyo, I hope for a more inclusive society in which all kinds of diversity are accepted on a mutual basis. To achieve this, I want to pursue all I can with interactive art."

the mailbox was actually installed at a nursing facility, users and their family members started to write more letters in order to create opportunities to use *Music Post*.

Mochizuki's unique ideas combining cutting-edge interactive art with media familiar to elderly people such as his black rotary phone and mailbox are attracting attention.

Mochizuki is not only focusing on the elderly. He is also actively making interactive art related to child-rearing. *Tetechan*—a doll that makes a sound when it is touched, inducing a child to hold hands—and cooking utensils that start to talk when they are used to cut vegetables are packed with ideas that truly excite and invigorate children.

Looking toward the future, Mochizuki mentions, "I have conducted studies on subjects such as people with disabilities, elderly people and small children, but going forward, it is necessary to develop interactive art from an 'inclusive viewpoint.'" He feels that in terms of being

### Shigenori Mochizuki

Associate Professor, College of Image Arts and Sciences

Subject of Research: Content development for children, elderly people and people with disabilities using digital media; development of plays and production of stage design using both digital and analog media

Research Keywords: Human interface and interaction, Life/Health/Medical informatics, entertainment and game informatics, art at large





# Every Citizen Becomes a Caregiver

## Who Takes the Main Responsibility Depends on Each Country

“Who will be responsible for nursing in an aged society in ten or twenty years’ time?” asks Yoko Otsuka. “Without even mentioning such a future, taking care of elderly people is a challenge that all generations—including those in their teens and twenties—need to be facing right now.”

According to Otsuka, the generation of children whose parents are in their 90s are now as old as their 60s or 70s. In the current situation, the burden of long-term care for elderly people extends to grandchildren or even great-grandchildren. At the same time, as illustrated by the increase in double-income families and of single people due to later marriage, lifestyles and family structures have become more diverse. This all means that the overwhelming shortage in the labor force for long-term care is an urgent issue. But as of yet, no radical solutions have been found.

Otsuka tries to approach these challenges through comparisons with other countries. Above all, focusing on the Scandinavian countries, which are known as advanced welfare states—in particular, Denmark—she has conducted international comparative studies from the perspective of gender.

Otsuka explains the current situation by saying, “In Denmark, where the welfare system for elderly people has been greatly improved, women and their families are not burdened with the responsibility of caring for the elderly on an institutional level.”

In Denmark, where care for the elderly is separated from the role of families under the country’s national welfare policy, the people who bear the responsibility are professional care workers with appropriate knowledge of nursing and health, who are employed as regular public servants. This is vastly different from Japan, where caring for elderly people is considered to be a role for the family and where it has been accepted that women would traditionally be expected to take care of elderly family members through unpaid work.

“Although they are regular public

servants, most care workers are female, both in Denmark and Japan,” says Otsuka, whose interest has turned toward clarifying the role of women in the welfare state as a result of issues that have arisen with female nursing assistants in Denmark.

In addition to Denmark, Otsuka has also developed a keen interest in China, a country with a large population. “Although China has something in common with Japan in the sense that the core of care for elderly people is considered to be family, we can also see a unique aspect to China in the form of the large economic gap

between its cities and rural areas, whereby many care workers are (qualified and unqualified) women coming to cities from rural areas.”

Scandinavian countries are widely recognized by the general public as advanced welfare states. In fact, Denmark spent many years improving its care and welfare policies in a manner that cannot be compared with Japan or China, and appears to be making

progress in the management of its aging society. However, Otsuka comments, “It is too simplistic to think that we could solve care issues for elderly people in Japan by introducing their system.” She points out that the level of knowledge regarding welfare in Scandinavia—both in terms of the general public’s perception and research—remains at the level that it was at in the 1990s, when those Scandinavian nations came to be recognized as having advanced welfare states, and that there is

presently an insufficient understanding of the actual state of affairs in Scandinavia. For this very reason, in addition to studying policy, Otsuka visited welfare facilities for elderly people in Denmark in an effort to comprehend through actual fieldwork a reality that cannot be understood from policies alone.

Denmark is no exception in terms of the global slowdown in economic growth, with a shrinking budget for welfare policy. Under such circumstances, the number of specialist care workers, who should essentially be a stable profession

of public servants, is being reduced. Otsuka’s fieldwork has revealed that this tendency is causing a new issue in that it is becoming more difficult to promote a form of independence in care receivers.

“As a result of the reduced range of nursing services and time, care for elderly people whose level of independence does not go as planned is increasingly being pushed back onto families.”

Providing detailed accounts of the reality as well as policy, Otsuka’s studies shed new light on an aspect that is hidden beneath the image of an advanced welfare state.

Furthermore, Otsuka continues by saying, “The issue of care for elderly people in Japan and in Denmark cannot now be understood from a one-dimensional viewpoint.” One example of this is the issues arising from the feminization of the welfare society, whereby not only caregivers but also care receivers are overwhelmingly female. Therefore, we cannot overlook the fact that the role of caring for elderly people, which has traditionally been assumed by female family-members, is now falling upon men who are in the prime of their working lives.

Otsuka concludes that “while the viewpoint of gender was of great use in discussing the socialization of care in the early stages, I now want to understand the reality of care for elderly people from a range of perspectives.”

In Denmark, the responsibility for nursing elderly people is assumed by professionals who are public servants.



**Yoko Otsuka**  
.....  
Professor, College of Policy Science

Subject of Research: Welfare policies as viewed from the perspective of families and gender (mainly in Scandinavia); welfare and poverty

Research Keywords: Sociology, social welfare and social work studies



**M**ale caregivers are now recognized widely enough that the Japanese-English phrase, “Caremen” has been coined to describe them. There are now about 1.3 million male caregivers in total—in fact, one in three caregivers is now male.

However, as recently as ten years ago, the presence of male caregivers attracted attention. A case in which a son nursing his mother who was suffering from a cognitive impairment went on to murder her in Kyoto in 2005 was widely covered in the media.

At that time, Mao Saito was already paying attention to male caregivers who were not socially or academically inclined and who attracted scant attention, and tried to elucidate issues they had through fact-finding surveys.

“Conventional surveys at the time assumed that most caregivers were women, and as a result didn’t engage with the challenges faced by male caregivers.” Under such circumstances, Saito adjusted the questions in her survey, thus revealing challenges particular to male caregivers—for example, difficulties in relation to chores such as “I can’t cook,” and “I don’t know how to use detergent,” as well as an overall lack of experience with nursing issues.

Further, Saito found that “Male caregivers generally don’t ask for help and tend to keep problems to themselves. It was also discovered that they have a strong sense of responsibility and perhaps do their very best—almost too much, in fact.” In addition to a sense of values that prevents them from expressing family issues or making complaints in the workplace, quite a few male caregivers suffer from trying to do things at home to the same level of perfection as they aim for in their salaried employment.

“As opposed to salaried work, nursing is not evaluated by someone else, and ultimately, it progresses toward ‘attending to a person on their deathbed.’ The important point is not to overdo things, but many male caregivers cannot do this. The murder case mentioned above is a tragedy caused by these challenges which are particular to males.”

Although male caregivers face certain problems and challenges, they cannot open their hearts, and thus arrive at a dead end. Weak human relations aside from

those with co-workers tend to promote this. As a measure to provide assistance to counter the challenges revealed through her surveys, Saito took on the challenge of establishing a “place to be,” where male caregivers can get together and support each other. This resulted in the establishment of the “National Network for Male Carers and Supporters,” which holds regular meetings at which male caregivers can exchange information and share problems. To date, almost 100 meetings have been held across Japan.

**A**bout ten years have passed since the issues of male nursing first became conspicuous, and with the ever-growing number of male caregivers, Saito’s interest in making salaried employment more compatible with nursing has increased. “The number of working caregivers is already as many as about 2.91 million people. According to a survey of companies in Kyoto that I conducted, I anticipate that in five or ten years’ time, one out of every two working people will be involved in nursing to some extent.”

It is not easy to make nursing compatible with salaried employment. In fact, the number of people who leave their jobs to be involved in nursing care has reached about 100,000 people per year. Saito warns that when men decide to leave their salaried jobs, they are not only exposing themselves to economic difficulties; they are also losing a place to be or a refuge outside their families, with the result that they are pushed into a mentally tight spot. She emphasizes that “mechanisms to facilitate nursing while in

salaried employment are essential.”

In reality though, neither systems nor policies to support caregivers have been established. The utilization of family-care leave systems has a huge difference from childbirth and child-rearing leave systems. Saito says, “This is related to issues unique to nursing whereby, when compared to childbirth and child-rearing, it is difficult to see into the future.” It is hard to predict when and to what extent nursing will become necessary. For this reason, in order to support the compatibility of nursing and work, it is not only necessary to provide long-term leave such as family-care leave; it also requires ideas to flexibly support nursing through conditions such as half-days or hour-based leave, flextime systems, and work-from-home employment.

**A**t the same time, looking at the rest of the world, there are many “places (drop-in centers)” that are permanently available as “places to be,” where caregivers can casually drop by any time, as opposed to the “meetings” on offer in Japan. Saito says, “While you cannot participate in meetings unless you have time, it is very important to establish places where caregivers from different backgrounds can casually drop in and receive support.”

Also on the increase is not only the number of male caregivers but also that of young caregivers in their teens and twenties, as the scale of families continues to shrink due to declining birthrates in contrast with the aging of society. Furthermore, the form of nursing has become more diverse, as illustrated by the presence of double caregivers who nurse multiple persons alone or who provide care while also bringing up children.

“As you can see from the Long-Term Care Insurance system, most of the support systems in Japan are focused on those who are in need of care. However, there is a real need for systems and services to independently support a wide range of caregivers from care to child-rearing and nursing,” Saito points out.

What issues do diverse caregivers have and what support do they need? With so many things requiring clarification, Saito’s research is becoming more and more vital to the improvement of caregiver support.

Men, working people,  
parents, and teenagers:  
the shape of nursing has  
certainly diversified.

# Supporting the 1.3 Million “Caremen”

**Mao Saito**

Associate Professor,  
College of Social Sciences

Subject of Research: Qualitative research on the realities of male caregivers in Japan  
Research Keyword: Sociology





Currently, the average life expectancy in Japan is more than 80 years old for both men and women. However, there is a gap of about 10 years between this average life expectancy and one's health span—the period a person can live their daily life without any health issues—which means that in reality many people will require care for a number of years.

Specializing in epidemiology and public health issues and with a background of studying diseases from the viewpoint of society, Takehito Hayakawa thinks that in order to prevent the elderly from requiring long-term care or becoming bed-ridden, we need to use an approach that takes into account the environment and society surrounding the elderly, rather than simply having clinicians deal with them.

“Statistically, the causes of elderly people requiring care include cerebrovascular disease, asthenia due to

old age, and cognitive impairments, as well as falls, fractures, and joint impairments. In particular, the prevention of falls, fractures, and joint impairments can be initiated by anyone at any time,” Hayakawa says. In fact, 45% of people certified to receive Long-Term Care Insurance have comparatively mild requirements such as Requiring support or Requiring long-term Care 1, and reducing the numbers of such people can help reduce Long-Term Care Insurance costs.

For this reason, in 2016, Hayakawa launched the Social Studies of Health and Community Project—an interdisciplinary project involving professors of Ritsumeikan University's College of Social Sciences and the College of Comprehensive Psychology—and initiated a study aimed at preventing people from becoming bed-ridden or requiring long-term care.

What Hayakawa particularly emphasizes is “Community Life Support.” With the goal of “Community health support,” he has spent three years spreading exercise programs aimed at improving the health of citizens in Fukushima Prefecture. It is commonly known that exercise is very effective for preventing lifestyle-related illnesses and promoting other health improvements. In the program, groups ranging from five to more than ten participants get together about once a week for at least three months and exercise at levels that are effective for improving motor functions. Hayakawa explains that “even if your body functions have deteriorated due to old age, you can still do physical exercise that is sufficient to improve your health such that you can avoid requiring long-term care.”

Initiatives where people get together and exercise for health purposes are quite common, but the key to this program is

# Health Promotion with Citizens Playing a Central Role

that the citizens play a central role. As Hayakawa explains, “What is important is that not the government or professional instructors assume leadership, but that the actual citizens themselves assume health improvement as their own issue and tackle it themselves with an awareness of protecting their health.” So that citizens will want to do it, he suggests that rather than positioning exercise as the main goal, it should be done in conjunction with other events such as enjoying tea or coffee or for entertainment. Even if it is for health issues, when people participate out of a sense of obligation, they tend to give up. But if it's fun like meeting friends or

chatting, they will start to participate in such programs of their own volition. The initiative started in a neighborhood association in Fukushima City with about 20 participants. Now, it has spread to 16 neighborhood associations and more than 30 groups that operate voluntarily across the city. This truly demonstrates the fact that community life support conducted with an awareness that one should protect one's health, in addition to promoting the idea that not only the government but also citizens should feel a sense of crisis that their health is their own matter, will lead to an overall health improvement for all citizens.

Now, through the Social Studies of Health and Community Project, Hayakawa is trying to implement the program in Kyoto Prefecture. Through his research and demonstrations, he aims to tackle issues in community health support and their solutions, while contributing to community health improvements in Kyoto. Ultimately, he hopes to link this knowledge to the establishment of a fundamental theory of social studies of health and community.

Hayakawa is now working on a data health plan which involves using medical and health data held by individual municipalities to help extend the health span in Japan. By identifying the health issues and characteristics of a community as evidenced by the data of individual municipalities, he is able to present a model for improving the health of many people through community life support. Hayakawa goes on to express his commitment by saying, “In this way, I aim to verify the very reason for the existence of community health sociology.”



**Takehito Hayakawa**

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Professor, The Kinugasa Research Organization

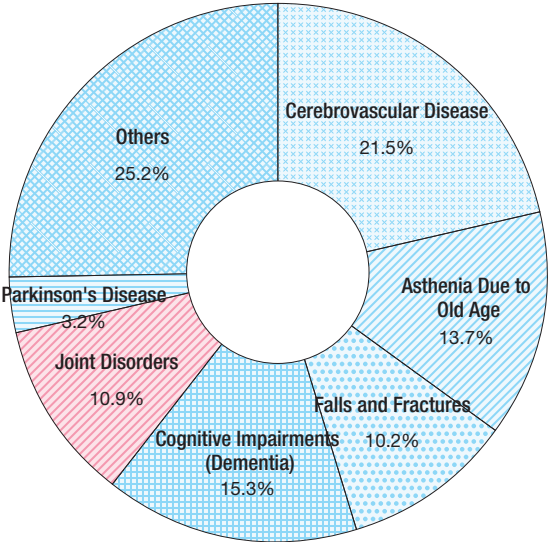
Subject of Research: Research on health and welfare services for the elderly and the prevention of non-communicable diseases

Research Keywords: Hygiene and public health, epidemiology, community health



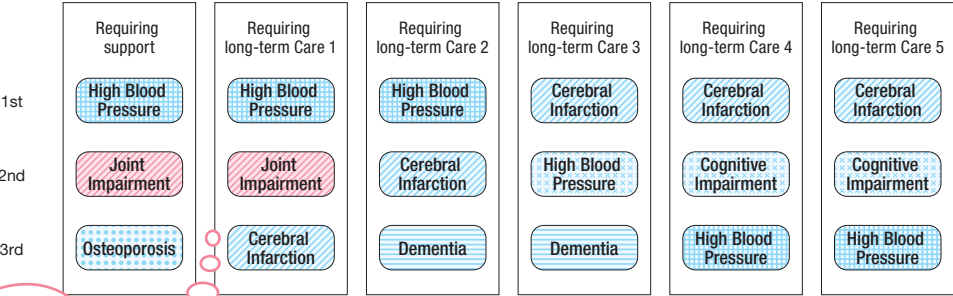
In Fukushima City alone, the program has spread to 16 neighborhood associations and more than 30 groups on a voluntary basis.

Reasons for applying for Long-Term Care Insurance



Source: Comprehensive Survey of Living Conditions, 2010

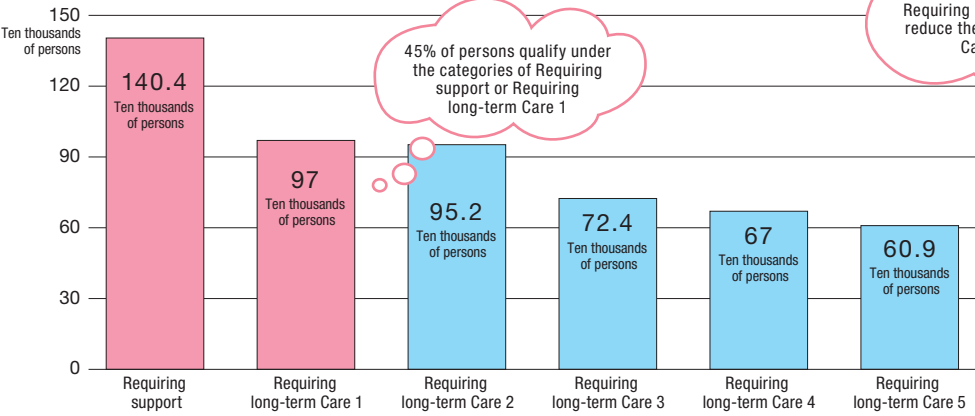
Diseases considered to be the cause of requiring support given by doctors (At-home care support)



Kitakyushu City (2002)/Original drawing by Dr. Matsuda (University of Occupational and Environmental Health, Japan)

The majority of elderly persons requiring support (At-home support/Moderate level) need such support due to high blood pressure or joint impairments

Ratio of persons qualifying for Long-Term Care



Source: Monthly status report on the long-term care insurance projects (April 2012)

Preventing the joint impairments that account for the majority of those Requiring support or Requiring long-term Care 1 can reduce the need for Long-Term Care Insurance

## Using “Community Life Support” to spread citizen-driven health promotion activities





Hampshire Hospitals NHS Foundation Trust

Hampshire Hospitals NHS Foundation Trust: A large NHS hospital located in the suburbs of London. The CEO, Ms. Mary Edwards (top right), has contributed to community medicine for many years. This has resulted in the creation of an effective system to reflect the opinions of residents on management.

organize their board of directors, with the majority of directors selected from former patients and community residents. Every stakeholder—including former local legislators, volunteer organization members, experts, and the youth — can become a member. Having a diverse range of stakeholders participating in the management decision process does not only bring greater management transparency and satisfied stakeholders; it also improves the hospital’s performance. “For example, it turned out that in addition to important performance indicators such as reductions in the average length of hospitalization and mortality rates, NPM also brought improved patient satisfaction.”

Similar to the U.K., promoting integrated community care and improving the quality of care and medicine necessitates a mechanism to receive feedback from residents as the recipients of such services. In reality though, in Japan, most of those involved in such organizations comprise members of medicine and care management agencies, and it is hard to say whether a mechanism to enable the local community to participate has been properly organized.

Under such circumstances, Megumi launched an advanced initiative to allow member of the community to participate in hospital management. Working with a local hospital, she has spearheaded a project seen in Japan for the first time to incorporate the opinions of residents into the hospital management based on a five-year plan that runs through to 2020.

As a first step mainly involving students from Ritsumeikan University, a survey for residents was conducted at a shopping mall in the city of Sanda in July 2016 to collect information on the physical and mental health conditions of the residents and their needs pertaining to hospitals. Noting that a detailed report will depend on the analysis of its results, Megumi explained the achievement as follows:

“What we can infer for certain from this survey is that in reality, while both patients and their families have a number of requests that they would like to make to hospitals and doctors, they actually hesitate to express them to the right channels where steps can be taken to accommodate them. At the same time, it turns out that there really exists a wider range of needs from hospitals than we had



Megumi Kojima  
Associate Professor, College of Business Administration  
Subject of Research: Analysis on introduction of quasi markets under the Blair administration, effects of governance reforms and evaluating systems on Japanese public management, management in healthcare and welfare field  
Research Keywords: Management  
Photograph: Seminar members who participated in the project with Arimakougen Hospital (Kojima is second from the left)

anticipated.”

Moving forward, Megumi analyzes the survey results and is considering mechanisms to reflect them in hospital management. She voices her expectations by saying that “many of those in hospitals still have a sense of resistance against outsiders such as us intervening in the management. There are many obstacles to clear, but this will probably become an interesting first attempt.”

# The Voice of the Citizens Helping to Facilitate Medical Services in Japan

It has been several years since Japan has been known as the nation with the highest rate of population aging in the world. However, as Megumi Kojima, Associate Professor in Management, explains, “Japan’s medical services in its current state, may not be able to accommodate the entire country as the world’s number one aging society.” In 2025, about eight million people from the baby-boomer generation will be 75 years or older. With further increases in Japan’s elderly population anticipated, an integrated community care system has recently been emphasized as a mechanism to support the welfare of the elderly. Such a system would allow the elderly who require higher levels of Long-term Care to live within a familiar community through collaboration between community-based medical and welfare organizations and the government to provide housing, medical services, preventive and emergency care, and living support in an integrated environment.

For multiple organizations to work together in an effective manner, a highly transparent management and collaboration of information are of utmost importance. “However, in Japan, neither the public sector nor nonprofit organizations sufficiently disclose their management details and structure, so transparency in terms of actual management is not very likely,” says Megumi. In order to provide us with an idea on the management of medical and welfare organizations necessary to promote an integrated community care moving forward, she cites the U.K. as a prime example.

In the midst of an economic slump in the 1980s, the U.K. adopted the concept of introducing the management methods employed in private companies into the public sector and local communities. This enabled such organizations to move away from a bureaucratic management system and implement a more flexible management approach while maintaining

transparency. This method, called New Public Management (NPM), greatly helped to improve efficiency in the management of medical institutes and improved the quality and service of healthcare within limited budget constraints. In Japan, NPM began its implementation from the 1990s onwards, but the number of academic research projects clarifying the results in a visible manner has been severely limited. Primarily because of this, Megumi’s focuses her research on examining the governance and management of hospitals, nonprofit organizations and the public sector in Japan and the U.K. from the viewpoint of management.

The feature of hospital management in the U.K. which Megumi focuses her attention on is the participation of community residents in upper-level management. Another important aspect of management reform like NPM is participation from patients and general citizens. Public hospitals in the U.K. (trusts)

## “Patients, volunteers, and teens participate in hospital management in the UK”



Arimakougen Hospital

Following an analysis of a survey conducted at a local shopping mall, a presentation was given to staff at a local hospital to make an initiative to incorporate the opinions of residents into hospital management.



# Considering the Cost-effectiveness in Health and Medicine

Do we have an adequate understanding of whether the medical costs incurred in the treatment of a disease or injury have enough benefits based on value for money?

“In Japan, the ‘cost-effectiveness’ in health and medicine had never been clearly discussed up until a few years ago,” says Hideki Murasawa. “As if it were an established theory, it has been said that the aging population has led to an increase in medical budgets, casting a dark shadow over the national finances. But according to the results of an analysis of causes with the increase in medical budgets disclosed at a council, while the effect of the aging population is 1.2%, other causes account for 2.7%—about twice the contribution of population aging.” Murasawa adds that among these “other causes,” the most influential is considered to be “advances in health

technology.”

“It is an unmistakable truth that medical budgets are increasing year on year, but looking at the causes, our countermeasures are off the mark. We cannot stop the aging of society, but by reviewing our allocation of limited medical resources, we may be able to slow the increase in medical budgets. To maintain the Japanese medical system while retaining fairness, incorporating advanced medical technology and maintaining a high-quality standard of medicine, all we can really do is to increase the ‘efficiency of medicine.’”

Murasawa currently specializes in health economics, but he has had a unique career. Originally, he planned on a career as a molecular biologist conducting basic genetic and cellular research. He then worked for the Ministry of Health, Labour and Welfare for more than ten years and held various posts, including a stint in a

division involved with the extension of health life expectancy. He also expanded his insights for epidemiology and public health in 2015, by participating in a large-scale epidemiological survey conducted by Hokkaido University aimed at understanding the health condition of citizens.

These diverse experiences comprise a real strength that makes the uniqueness of his research conspicuous. Murasawa is very enthusiastic about his mission, saying he aims to “take advantage of my knowledge cultivated in diverse domains from molecular biology to public health, epidemiology and health economics.” And to achieve this goal, it is essential to ascertain the current status based on objective data. One of such study examines the “cost effectiveness in health and medicine”—something that has not been studied in great depth in Japan.

“There are some approaches to analyzing cost-effectiveness in health and medicine. I mainly use a ‘cost-utility analysis,’” Murasawa says. As he describes it, this method considers both life years and health-related aspects—in the form of Quality of Life (QOL)—in order to evaluate QALYs (Quality Adjusted Life Years), which is then used as an index of effect. By calculating incremental medical costs/effects, the costs for each 1QALY gain are analyzed and compared.

For example, assuming a person has a serious disease, you can compare that person’s healthy years as a result of a certain new drug or treatment (improvement of QALYs) with the QALYs of the existing drug, taking into account the costs. Based on this, you can then scientifically compare the cost-effectiveness between the existing drug or treatment and the new one. In this way, you can work out whether you should choose an expensive drug with high effects or an existing drug, taking into account not only the cost and extension of life years but also its effects, including QOL.

Furthermore, Murasawa is also interested in the relationship between the declining birthrate and female health. It is forecast that while the percentage of the population aged 65 years or older will reach about 40% in 2060, the percentage of the population who are younger than 65 years old will drop from the current 74% to 60% in Japan. In particular, the health of women who give birth is considered to have a serious impact on the declining birthrate, and interest in female health has been increasing nation-wide, as illustrated by establishment of Women’s health promotion office, within the Health Service Bureau of the Ministry of Health, Labour and Welfare in 2015 to promote women’s health.

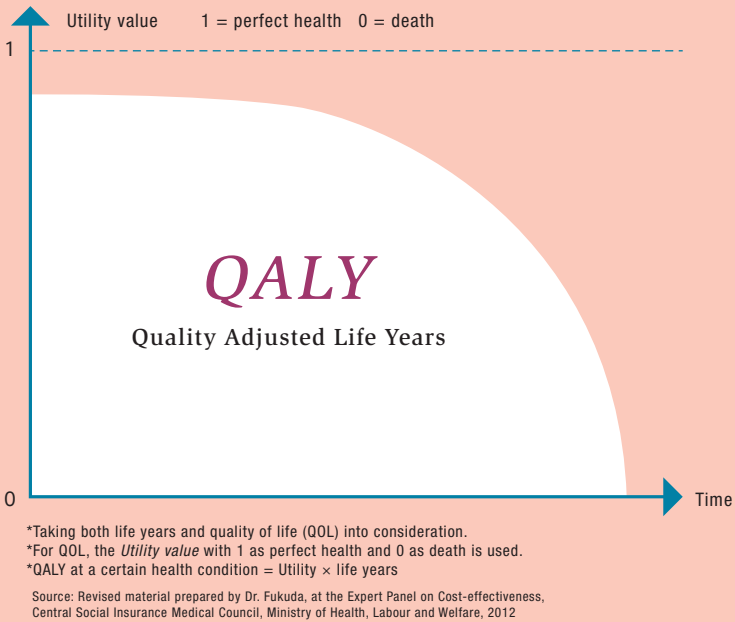
Murasawa pays particular attention to the relationship between labor and the health of women engaged in healthcare services such as health care facilities. “Overseas, a number of research results have been reported, showing that the labor environments of female medical practitioners tend to increase the risk of miscarriage or premature birth. There are lives that, although they are conceived in the womb, cannot be born. Before worrying about the declining birthrate, such unreasonable things should be solved first, right?” Murasawa is now preparing to conduct a survey of this issue, which has rarely been studied in Japan to date.

“Compared to men, women see great changes in the weight of QOL at individual life stages. We need to know about these

changes,” Murasawa says. He wants to contribute to countermeasures against the declining birthrate by evaluating health conditions in which giving birth to and raising children is easier from the viewpoint of QOL, while helping to extend health span as a result of the evaluation of

the health-related QOL of women—whose average life expectancy is longer than that of men. With multiple perspectives learned from epidemiology and health economics, his viewpoint will play ever more important roles in the future.

## Conceptual drawing of QALY



## Incremental Cost-effectiveness Ratio (ICER)

Information on clinical trials and epidemiological surveys are inputted into a simulation model for scientific evaluation.

$$ICER = \frac{\text{Incremental costs}}{\text{Incremental effectiveness}} = \frac{\text{Cost}_A - \text{Cost}_B}{QALY_A - QALY_B} = \text{Cost per 1 QALY}$$

QALY: Quality Adjusted Life Years

$$QALY = YOLS \times QOL_i \quad (0 \leq i \leq 1)$$

YOLS: Years of Life Saved (Extension of life with a strategy)  
QOLi: Quantified healthy state defining perfect health as  $i = 1$  and death as  $i = 0$

The reasons for the increase in medical budget may well be “Advances in health technology” as opposed to the aging population.

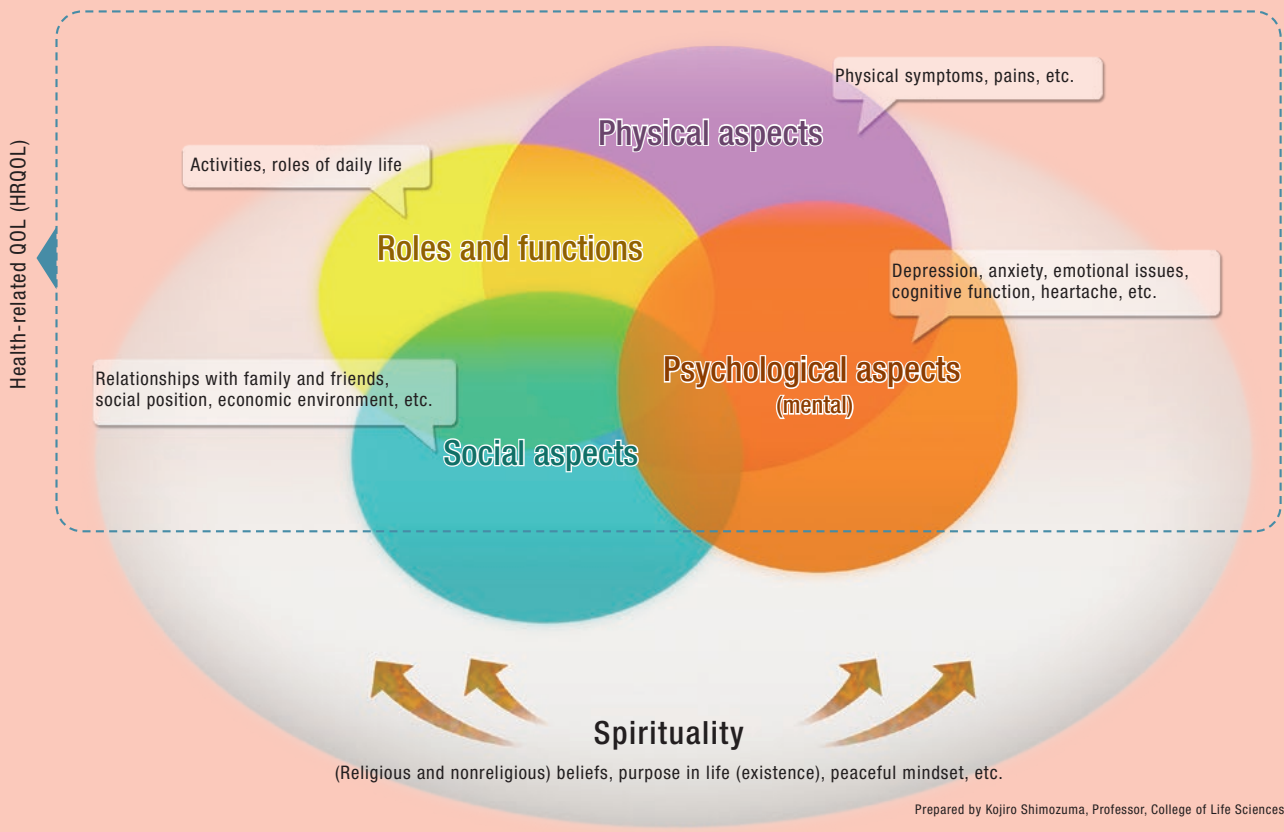


**Hideki Murasawa**  
Assistant Professor, College of Life Sciences

Subject of Research: Research on evidence synthesis promoting health care policies. Cost-effectiveness analysis for health-care strategies.

Research Keywords: Health technology assessment, molecular biology, cellular biology, epidemiology and preventive medicine, public health

## Domains constituting QOL





# A Smart Way of Working That Focuses on Flow



Whether in a factory (top) or a TV station (bottom), information regarding the current status of processes is “visualized” on whiteboards to facilitate problem solving and improvement activities. Originating in Japan, the concept of “lean” has now become a Swedish standard.

A manner of thinking that originated in Japan and has been adopted by Swedish society

“Swedish society has adopted an idea that originated in Japan to establish a smart way of working,” says Ryusuke Kosuge. “But now, it’s time for Japan to learn from this Swedish initiative.”

Japan is confronted with many challenges in the form of its declining birthrate and aging population, as well as a decrease in the number of working people to support the economy. While a variety of reforms have been proposed to get more women and the elderly into the workforce as well as to promote work-life balance, an important challenge for companies is the pursuit of higher productivity in a sustainable manner. Sweden—the country that pioneered such initiatives as well as the “six-hour working day”—rather surprisingly looks at the Toyota Production System as a model.

“In Japan, the Toyota Production System gives the impression of striving to

eliminate waste at production sites, but its essence is to create a seamless flow of value to customers,” explains Kosuge. In the 1980s, an American research team discovered this point when it was exploring the strengths of the Japanese automobile, labeling it a “lean” production. Creating a “flow of value” refers to identifying what customers want and subsequently reducing *muri-muda-mura* (overburden, waste, and unevenness), in order to create greater value with fewer resources. In particular, Sweden promotes lean efforts at a nationwide level; and not only manufacturing companies but also public service organizations such as hospitals, tax offices and schools earnestly put them into practice.

When practicing the idea of “lean” in services, it is important to create a flow in the process whereby customers receive value. Here, instead of thinking from the provider’s viewpoint, it is necessary to

think from the customer’s viewpoint. In Sweden, long wait for healthcare services has been a serious issue, and more and more healthcare providers are adopting the “lean” concept to address it. By improving the flow in the process from admission to an emergency ward until discharge, many hospitals have reduced waiting times in their emergency wards and increased the total number of patients treated. There is even a report that implementing “lean” in the regular breast cancer screening process from the first visit to a doctor until the receipt of a diagnosis was reduced from 42 days to two hours: the process became five times more efficient.

Creating a flow of value involves changing our basic way of working. In particular, emphasis needs to be put on ensuring quality. Through visualizing information regarding the current status of processes, problem solving as a team is facilitated. With the goal of perfecting

quality, improvement activities are conducted on a daily basis. Nowadays, in Swedish workplaces, it is not uncommon to see workers at various levels engaged in improvement meetings in front of a whiteboard. It should be noted that such a systematic way of working boosts worker morale too. It can prevent confusion and redundant repetition of tasks and thereby make workers feel that they are doing something that really adds value. Also, close teamwork with others leads to a sense of solidarity. Above all, the idea of continuously pursuing a better flow gives a sense of challenge. In essence, people development is at the heart of “lean.”

One reason for the penetration of the “lean” concept in Sweden is Swedes’ pragmatic and flexible way of thinking. Initially, there was some resistance to the “lean” concept because it was associated with Japan

and Toyota. Lately, however, it is seen to be consistent with the Swedish work culture. For example, the emphasis on respect for individual autonomy in Sweden can promote workers’ creative input for creating a better flow. In addition, Swedish style of dialogue in which everyone participates equally regardless of their position lends itself to improvement activities. In fact, through mutual learning among industries, Sweden seems to be successfully integrating the “lean” concept into its work culture. This would be called “Swedish-style lean.”

Japan is now in a situation where it needs to rethink its conventional ways of working. Kosuge considers that the first thing Japan needs to learn from Sweden is its point of observation—meaning that we should first identify the hints that are close at hand, put them into practice, and accumulate innovations. It is ironic that a concept that originated in Japan

has not penetrated in Japan. The thing is that, in Japan, there is a preconception that “manufacturing and the services are completely different” because of its well-established manufacturing excellence. It is this preconception that Kosuge is trying to address: “As a researcher, I want to capture and highlight the essence of creating a ‘flow of value’ while identifying the unique challenges faced by various industries.”



**Ryusuke Kosuge**

Associate Professor, Graduate School of Management  
Subject of Research: Development of a customer experience-oriented organization  
Research Keywords: Service management, marketing, consumer behavior



# Embracing more than two million foreign residents, how does Japan portray its multiculturalism?

With a declining birthrate, an aging population, and rapid globalization, the acceptance of overseas workers as a means to solve Japan's labor shortage are now commonly argued. While the Japanese government has unveiled a slogan, "Dynamic Engagement of All Citizens," it is estimated that Japan will need to accept 200,000 immigrants per year to maintain its current labor force and social security system.

With such concerns, Fuminori Minamikawa asserts, "The urgent issue faced by Japan is no longer whether we should accept immigrants or not." Japan is not an unconditionally attractive destination for immigrants now. He insists, "Before discussing new immigration, we should recognize that Japan is already a multicultural society where more than two million foreigners live. Respecting cultural diversity and incorporating the minorities as full members of society are required for the multicultural society." And he adds, "This may appear to make a detour,



but the vision of an inclusive society that consists of diverse people will be a fundamental condition for future Japan in the face of a declining birthrate with an aging population."

Taking as his research subject the United States of America, which constitutes a nation of immigrants, Minamikawa has pondered changes in Japanese American society and the ways in which multiracial communities have been created. Considering the future of Japan, he says, "Going forward, faced with a declining birthrate and aging population, the 'Japanese vision' will have to confront the question of how to create a multicultural society where diverse people of different nationalities and cultures live in harmony. Based on the historical experience of the United States, I want to propose what a multicultural and inclusive society in Japan should be like."

Currently, Minamikawa is undertaking an analysis of multiculturalism in the United States.

According to Minamikawa, the term "multiculturalism" spread to advanced countries after it was adopted as an official policy in Canada and Australia in the 1970s. In Japan, it was introduced in the 1990s as a new social vision, and its potential has regularly been discussed. However, in recent years, increasing pessimism to integration of immigrants

and refugees in Western countries, frequent terrorist attacks involving non-European immigrants, and the growth of extreme right-wing groups have highlighted the "failures" and "decline" of multiculturalism.

The United States is no exception. The idea of multiculturalism has been criticized as something that is not compatible with the conventional wisdom of the United States respecting individualism. Minamikawa, on the other hand, paid attention to the fact that the concept of multiculturalism in the U.S. has one of its origins in grass-roots social



movements in local communities that have long struggled with racism. Such an idea has been reflected in policies and movements aimed at eliminating racial discrimination.

One of these is the affirmative action (AA) policy. Minamikawa says, "AA—taking race, gender and other attributes into consideration at the time of university entrance and employment—was based on a vision of society to attack historically accumulated inequality and include all groups on an equal basis."

History education is also an important domain in the multiculturalism.

Multicultural education redefined the "American history" by learning about minority cultures as parts of American culture. According to Minamikawa, "Such initiatives emerged and spread through trials and errors to overcome the racism deeply rooted in American society."

As America continues to accept new immigrants now, multiculturalism should be re-evaluated as a means to describe a future America in which diversity is expanding, not just as a means to compensate for loss made by the past racism.

What do such studies of American multiculturalism suggest for contemporary Japan? While Minamikawa recognizes the differences between the Japanese and the American views of nation, he says that the American experience can share some substantial views with us. The American image of a multicultural society is built on its historical experience in which majority and minority groups involved. Minamikawa says, "What is important for envisioning multicultural Japan is that without reflective analysis of how Japan has defined its people and foreigners, it is impossible to devise the ways to re-define its multiculturalism to come." To achieve this goal, it is essential



to confront racism. In fact, Koreatown across Japan that have fought against discrimination and xenophobia are venues for inventing the most advanced form of Japanese multiculturalism at present. Minamikawa also emphasizes, "A society which is inclusive of multiple cultures is a crucial condition to create a truly inclusive one for all members which fights against any kind of exclusion." Minamikawa's study takes into consideration the construction of a Japanese version of an inclusive multiculturalism that opens to people of different backgrounds, such as nationality, race, culture, gender, and age. The effort to tackle declining birthrate and aging population concurrently seeks such an inclusive Japanese society.



**Fuminori Minamikawa**  
Professor, College of International Relations  
Subject of Research: Historical Sociology of American Multiculturalism, Sociological Analysis of Nativism and Immigration Policies in the United States, Comparative Sociology of international movement of Japanese  
Research Keywords: Sociology, American Studies

# Envisioning a Japanese Multicultural Society, Based on the Experiences of the United States.





# What Do Thailand and Japan Have in Common, in Terms of Aging Populations?

## Thailand

Korat Plateau in northeastern Thailand



Old people in Khon Kaen in the northeastern region of Thailand, whom the students met during field surveys. The students appeared to be very impressed with the pride the old people took in the local specialties that they made and the lively manner in which they conversed with the students.

## Japan

Kohoku in Shiga Prefecture



A scene from Kamikaide, Takashima City, Shiga Prefecture, where Kurokawa has continually maintained exchanges with the students in his seminar (photo-graphs top and center). The photograph at the bottom shows Nagashima City before and after its successful regional development project, which was driven by the residents themselves.

overlooked. In northeastern Thailand, where Kurokawa is involved, young people are leaving the area to go to Bangkok and other big cities looking for work, and the impact of this depopulation combined with the aging of the population has been rapid. Amidst this aging of the population, Kurokawa is exploring methods to revitalize the local economies.

In particular, for three years, he has continued a unique study comparing northeastern Thailand with the Northern or Kohoku region (Takashima and Nagahama cities) in Shiga Prefecture, Japan.

“As a result of the surveys, it turned out that both regions have many things in common,” says Kurokawa, explaining the reason for his selection of these subjects for the comparison. In addition to the fact that both are flatlands surrounded by mountains and rich in water, they also have things in common such as tourism promotion, initiatives for community revitalization, and local specialties. Above all, the point that attracted Kurokawa’s interest was that while both regions face similar serious issues in relation to their aging populations, they differ in their approaches to finding solutions. His hope is that “by comparing the two regions, we may be able to find hints or ideas to realize the revitalization of local economies where society is aging in both Japan and Thailand.”

In Thailand, the investigation taking top priority for Kurokawa is the “One Tambon One Product” (OTOP) movement—otherwise known as the one village one product movement. With government support, OTOP has long been conducted as a means of community revitalization. In recent times though, with the aging of the main participants in the activity, it has taken on an even more powerful meaning as a source of employment opportunities for the elderly. Because Thailand has no pension system like Japan, elderly citizens have to earn a

living. They manufacture traditional crafts such as silk fabrics known as “Mudmee” and flower decorations, and jointly sell them to earn a profit. “There are many things to learn from this employment mechanism. For example, by placing a weaving machine in each house, the elderly can work at any time and for as long as they like.”

Thailand is also ahead of Japan in the use of vacant rooms available in farms in depopulating agricultural villages in an attempt to respond to the global trend for ecotourism catering to backpackers who want to experience agriculture. Kurokawa points out that not only the government but also higher educational and research institutions such as universities and local

“living a healthy life with a real reason for being.”

At the same time, in Shiga Prefecture, Kurokawa is interested in a successful case of revitalization of the downtown area of Nagahama City as an example of local economic revitalization. Using the traditional building of the Kurokabe Bank that once existed in Nagahama City, the previously struggling downtown area of the city was transformed into a tourist destination that now attracts two million visitors every year. This case of successful regional development mainly driven by the residents without depending on the government, attracted attention from

Thailand, Kurokawa notes, as well as across Japan.

“In modern Japan, where the labor force is shrinking and the failure of the national pension system is feared, the ideal of living a comfortable retirement must inevitably change,” Kurokawa points out. He finishes by expressing his determination:

“From now on, we need to explore a new form of elderly citizenship, in which even the elderly can work for a long time, through which they will contribute to society and have a reason for being. Through international studies, I want to present a new viewpoint on what an

aging society should be.”

laboratories are actively involved and are providing support.

“Above all, what really impresses me when I visit OTOP groups in various villages with the students is the fact that the elderly have great confidence in their work in a rewarding and lively manner,” Kurokawa continues. Further, OTOP does not simply offer work; it also functions as a mechanism for enjoying recreational activities, contributing to society, and promoting health through mutual care. In Thailand, where there is no national pension system, the economic aspects of OTOP are crucial, but Kurokawa observes that there are many hints and ideas for

### Continuing to work in a lively and rewarding way: a view of the ideal lives of elderly people in Thailand

#### Kiyoto Kurokawa

Professor, College of Economics

Subject of Research: Regional Development Economics. Economic gap between rural and urban is the most serious problem in the world, today. We are conducting socio-economic surveys to measure the economic gap in the developing countries. And we are trying to propose the effective economic measures. Research Keywords: Environmental risk control and evaluation, Environmental policy and social systems, Natural disaster / Disaster prevention science, Economic Policy, Agricultural science in rural society and development





# Thinking Beyond Just Figures

A need for systems to provide support in sympathy with the feelings of people living in the present day

A declining birthrate is a grave problem for any society. To support the aging of society, we must increase the birthrate. With such statements, countermeasures to counteract the falling birthrate have been promoted on a nationwide scale.

“But surely that equates to the reproduction control and management instituted by the government during World War II, when the slogan of ‘Be fruitful and multiply’ was used to encourage childbirth?” Quite a number of researchers have posed this question. Hideki Yui and Kashimi Yoshida say that they also feel uncomfortable that reproduction and childrearing are being discussed in the context of countermeasures against the declining birthrate. They are trying to bring the challenges of the modern era to the fore through historical studies, while searching for solutions.

One of the themes Yui is currently tackling is a study on sterility. Looking

back on historical perspectives, Yui has indicated that assisted reproductive technology such as artificial insemination and external fertilization have been influenced by the values and policies of individual societies. He says that “issues surrounding sterility treatments in the modern era are closely linked to policies aimed at countering the declining birthrate.”

It was 1989 when the total fertility rate dropped to 1.57 and the issue of a declining birthrate became conspicuous. Since then, a series of countermeasures to counteract the falling birthrate have been launched. In this context, the necessity of sterility treatment consultations and the provision of information were declared. “Only legally married couples are eligible to receive subsidies for sterility treatments conducted as a countermeasure against the falling birthrate. We cannot gloss over a situation where a helping hand is extended only to those subjects whom the

government considers ideal,” Yui points out.

The aging of the ovum—currently regarded as a problem—has frequently been a topic of discussion with regard to countermeasures against the declining birthrate, because it is directly connected to sterility. In the 1970s, local municipalities led a campaign to prevent the birth of children with disabilities, called “The Campaign to prevent unhappy birth,” and some lawmakers attempted to enact an article to allow abortion of fetuses with disabilities under the Eugenics Protection Act. These movements faced harsh resistance from organizations of people with disabilities, and since that time, the government has ceased to openly discuss the prevention of births of disabled children. However, a close examination of policy-level discussions in relation to countermeasures against the falling birthrate shows that an increase in birth defects due to the aging of the ovum

has secretly been regarded as an issue. “Such things illustrate the government’s ideal regarding the shape of parent-child relationships,” says Yui.

At the same time, Yoshida is interested in the problem of childrearing after a birth. As part of this, she focuses on adoption arrangement systems and has presented an interesting study comparing the historical changes and current situation between the Japanese and American systems.

“In Japan, the number of special adoptions involving a child of less than six years old and a couple of 25 years or older remains about 300 to 400 every year, while some children are adopted by overseas adoptive parents, as they were never adopted in Japan. Most of approx.

40,000 children in need of care are placed in institutions while very few are grown under foster family system,” says Yoshida to explain the current situation. The situation in the U.S. is in marked contrast to that in Japan. The focus is on an upbringing in a family rather than an institution, with the number of adoptions overwhelmingly larger than that of Japan. A diverse range of children are adopted, regardless of race, disability, or nationality. America aims for an adoption system that considers the well being of the birth parents, the children, and the adoptive parents, which also challenges related problems such as social oppression against women, exploitation, and discrimination.

Yoshida analyzes the reason for this as follows. “Historically speaking, Japan legalized abortion early on and

restrained out-of-wedlock births. As a result, adoption arrangements to support expectant and nursing mothers and their infants were not institutionalized.” Yoshida considers that on the other hand, in the U.S., where resistance against abortion is strong from certain religious viewpoints, adoption and single parenthood have been established as options for women.

What Yoshida regards as a problem is that “Japanese social norms and legal systems exclude women marginalized in the society.” During the process leading to adoption, there is a mountain of problems such as biased sex education, abuse, violence, prostitution, and exploitation in the sex industry; and what we must address is how we can support girls and women. “In the process of abortion and use of the adoption system, it is difficult for women to make decisions independently and autonomously,” Yoshida says.

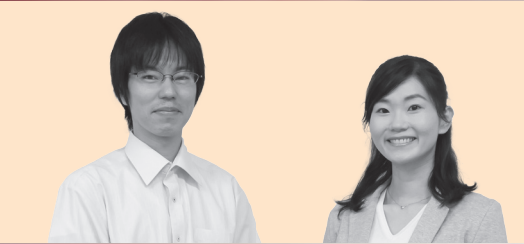
Yui notes, “Before thinking about the issue of numbers, we have to think about a society where children who have already been born can easily and comfortably lead a life and grow first of all,” Yoshida agrees, saying, “We have to think about children in the framework of child welfare that includes women who can be in difficult situations due to pregnancy or childbirth.” As one, they say, “As researchers, our role is to focus on people living in the present day and look back on history to provide critical ideas.”

Hideki Yui  
Senior Researcher, The Kinugasa Research Organization

Subject of Research: A Historical Study of Infertility Treatment  
Research Keywords: Sociology/History of science and technology, Family sociology, Bioethics

Kashimi Yoshida  
Senior Researcher, The Kinugasa Research Organization

Subject of Research: Historical study of adoption systems in Japan and the U.S.  
Research Keywords: Social and legal history, bioethics, gender, child welfare



In relation to the “Human Services Project on Formation of Family” study of the Institute of Human Sciences, which is run by Yui and Yoshida, a book titled *Opening the Door of Learning with a Theme: Birthrate Decline, Pregnancy, Childbearing, and Childrearing* will be published by Hokuju Shuppan in April 2017. As the editor, Yui says, “I hope that this book—which closely analyzes our society with a declining birthrate through topics relating to pregnancy, childbearing, and childrearing such as infertility, adoption, childcare support, and diagnosis before birth—will facilitate discussion of measures to counteract the falling birthrate across multiple perspectives.”





# The Third-Phase R-GIRO Research Program

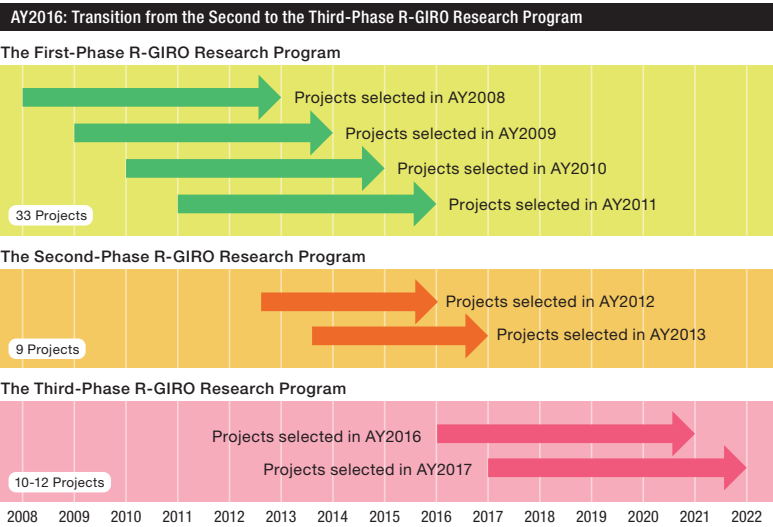
## Formation of a Vital and Creative Response to Declining Birthrate

The founding philosophy of the Ritsumeikan Global Innovation Research Organization (R-GIRO) is the pursuit of an affluent and sustainable society. Ever since its foundation as an philosophy driven organization in 2008, the organization has focused on the issues that need to be solved in order to form society in symbiosis with nature, and has conducted activities through education and research.

To date, based on its founding philosophy, R-GIRO has produced many research results. Recently though, Japan and many other advanced countries have been facing the harsh reality

of declining birthrates and aging populations. It is a matter of great urgency for Japan to seriously confront the issues arising from this reality in terms of not only policy but also research.

Based on such a background, we started the third-phase R-GIRO research program consisting of five research centers (Research Centers I to V) in AY2016. Focusing on the concept of “formation of a vital and creative human society in response to declining birthrate and aging population,” the research themes developed around these centers will approach solutions to the two serious problems facing Japan and the world.



- The Research Centers for the Third-Phase R-GIRO Research Program**
- I** Formation of society and culture in which the Japan's youth can have their dreams
  - II** Innovation in science and technology to form society in symbiosis with nature
  - III** Invigoration of production workers by improving their working environments
  - IV** Creation of reason for being by employment support for the elderly
  - V** Contribution to develop a sustainable society from a global perspective

**A** Objectives **B** Research description **C** Expected ripple effects

**Research Center I**

### Constructing trans-disciplinary human science for evidence-based human services

Project Leader: Yuko Yato, Professor, College of Comprehensive Psychology

- A** The purpose of our project is to build a society in which everyone can live with hopes and dreams for the future, connecting the individual stages of human life seamlessly in order to form a ‘Life’ in which everyone can make the most of their abilities beyond differences in gender, nationality, and the presence or absence of illness or disability.
- B** We will conduct transdisciplinary research on issues faced by all the generations including infants, children, adolescents, adults, and elderly in the aging society with fewer children, from the perspective of behavioral development, neuroscience, narrative psychology, and sociology of local community. In this way we aim to create a new science essential for realizing evidence-based human services (intervention in children with developmental disorders and students with difficulties in learning; support for career selection and employment support for people with disabilities; health promotion for elderly people, etc.).
- C** By establishing “Seamless human service interventions” and integrating the methodologies for their realization, as well as accumulating “scientific evidence” based on psychology, we will be able to build local community foundations to enable support providers of each period of human life (including child-rearing parents and grandparents’ generation) to cooperate with each other. It will also create new values that enable individuals to realize fulfilled life even when facing a crisis or a disability, and facilitate the feedback into production of academic knowledge that society truly needs.

**Research Center II**

### New technologies for climate-smart agriculture towards the 9 billion people era

Project Leader: Hisaaki Mihara, Professor, College of Life Sciences

- A** The goal of this project is to realize “sustainable agriculture” to provide food and energy in the time when the population hits nine billion people in 2050. With a core of research and development by plant scientists, microbiologists, and information scientists, integrated with researchers in the liberal arts, social science, and global environmental science, this project aims to create a new academic basis to realize climate-smart agriculture.
- B** Research and development will be conducted on the basis of two major aspects, namely “Increasing harvests by strengthening positive effects (strengthening photosynthetic capability and promoting growth)” and “Reducing costs and labor by alleviating negative effects (providing disease resistance and stress tolerance).”
- C** This project is expected to suggest new technologies required for the future agriculture based on the forecast impact of global-scale climate change, to solve various issues in implementing such technologies within society, and to promote the realization of climate-smart agriculture.

# Human Society in and Aging Population

**Research Center III**

### Robotics innovation based on advanced materials

Project Leader: Sadao Kawamura, Professor, College of Science and Engineering

- A** Robotics has made developments alongside progress in mechanical engineering, kinetics, kinematics, electrical engineering, and IT. Conventional robots are, however, based on metal materials and other rigid bodies; and because they are thus heavy, large, and hard, their applications have been limited to automobiles, electronic equipment manufacturing, etc. By expanding their fields of application into medicine, welfare, and maintenance of social infrastructure, it is expected that robots will solve the challenges of a declining birthrate and an aging population. However, to achieve this, it is necessary to develop human-friendly, light, small, and soft robots.
- B** In this project, by integrating different fields in industry, academia, and the government, we will promote the development of (1) New materials essential to replace the conventional metals constituting robots with advanced materials such as high molecular materials; (2) Robotic elements (sensors, actuators, etc.) using new materials; and (3) System integration technologies to use the developed robotic elements.
- C** By creating robotics innovation with new soft materials and pushing to expand their application into fields such as medicine, welfare, and social infrastructure maintenance, we hope to compensate for labor shortages, which will be a major challenge amid a declining birthrate and an aging population.

**Research Center IV**

### Interdisciplinary science and technology for activation of living organism

Project Leader: Satoshi Konishi, Professor, College of Science and Engineering

- A** Activators can be placed into the body by methods including oral and transdermal administration, in addition to hypodermic and intravascular administration via injections, etc. Drug delivery technology is expected as an effective method to improve targeting of the drug. At the same time, as activators, stem cells are newly drawing attention as a regenerative medicine technology. As means to effectively administer these cells, thermal and electromagnetic stimulation as well as other physical methods are regarded as prospects in addition to biochemical methods. The aim of this research center is to comprehensively develop science and technologies for activating bodies on living bodies and cultivated model organisms, with the goal of activating human bodies, focusing mainly on skeletal muscle.
- B** We will delve further into science and technology to support innovative medicine for introducing stem cells into bodies. To achieve this goal, we will focus on technology for biopsy and analysis of samples such as blood and tissue and technology for cell culture on a chip on-chip. Both technologies have been developed in the second-phase R-GIRO research program integrated with approaches of engineering, pharmacology, and physiology. In the third-phase, we will develop muscle activation techniques and methods for introducing stem cells (mesenchymal stem cells). In particular, distinguished technologies of the core such as in-vivo micro-machine technology are emphasized.
- C** Our research aims at extending health span through the prevention and mitigation of people becoming bed-ridden and sarcopenia (locomotive syndrome) while our technology will contribute to the countermeasures against lifecycle-related diseases.

**Research Center IV**

### Systems vision sciences for regenerating of visual function

Project Leader: Katsunori Kitano, Professor, College of Information Science and Engineering

- A** In the field of science and technology regarding regenerative medicine, Japan is an internationally competitive player, but competition from overseas has become a lot harsher. Through joint research systems of experiments and theories aimed at gathering information in the fields of biology, engineering, and psychology, this project aims to elucidate vision loss as the most challenging disability and to develop cures.
- B** As the basic technology towards visual reconstruction, we will develop a novel system to evaluate visual function by integrating (1)Technology of regenerative medicine (production of retinal tissues originating from iPS cells); (2)Visual function analysis technology in neuroscience (visual response and behavioral analysis at molecular, cell, tissue and animal level); and (3)Information science (production of mathematical neuron circuit models).
- C** It is expected that such technologies will be developed in cooperation with excellent researchers and clinical doctors from Japan and overseas, forming an interdisciplinary visual science research center targeting medical applications and regenerating the elderly labor force in the society facing problems of a declining birthrate and an aging population.

**Research Center V**

### The restorative justice toward the era of a declining birthrate and an aging population

Project Leader: Kosuke Wakabayashi, Associate Professor, College of Comprehensive Psychology

- A** Positioning “the Center for Forensic Clinical Psychology” that was developed and promoted during the second-phase R-GIRO research program as its research center, this project targets the creation of a legal and social system that forms a part of society facing a declining birthrate and an aging population from the perspective of restorative justice.
- B** We will host research in the fields of law, psychology, sociology, information studies, and legal practice to develop a basic theory underlying the problems of (1)Creation of a “Innocence Project for Japanese society” to eradicate erroneous judgments in criminal justice in general; (2)“Care and restoration in the civil law” domain involving clinical services for victims in civil cases; and (3)“Development of restorative justice theories.”
- C** In this case, we will aim for theoretical development on the question of what justice should be with the purpose of restoring relations between people involved. By practically applying these achievements in a comprehensive and global manner, restoring connections between the law, society, and people, and building a supportive system for people who are “starting all over again,” we also hope to create a friendly society for a declining birthrate and an aging population.

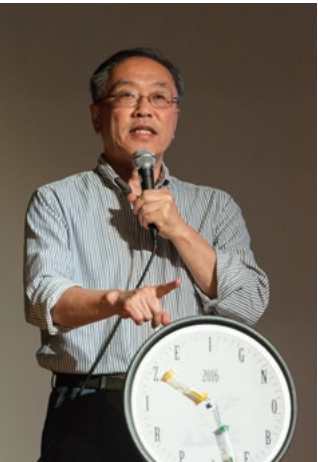


RESEARCH TOPICS

Atsuki Higashiyama, Professor, College of Letters, Wins the Perception Prize at the Ig Nobels

Atsuki Higashiyama, Professor of the College of Letters, won the 26th Ig Nobel Prize in the Perception Category for his research on the “Perceived size and perceived distance of targets viewed from between the legs: Evidence for proprioceptive theory” (a joint research project with Professor Kohei Adachi, of the Graduate School of Human Sciences, Osaka University), which was announced on September 23. The Ig Nobel Prize is an award that honors achievements that first make people laugh, and then make them think. Higashiyama has been researching human senses and perception under

the research themes of “Tactual senses and pain” and “Space perception.” This award was given for his elucidation of a phenomenon whereby a view appears to be flat and objects look smaller when looking at them between one’s legs while bending over. As a representative case of this phenomenon, sandbanks at Amanohashidate in Kyoto Prefecture, Japan, appear as though they were an arc on the skyline like a bridge when viewed in such a manner. His experiments showed that this change to the visual world is caused not by the inversion of the retinal image, but due to the inversion of the upper body.



Selected for “Initiative for Realizing Diversity in the Research Environment (Distinctive Features Type)” Supported by Funds for the Development of Human Resources in Science and Technology

On July 29, Ritsumeikan University was selected for AY2016 “Initiative Realizing Diversity in the Research Environment (Distinctive Features Type).” This project was implemented as part of the Funds for the Development of Human Resources in Science and Technology, which was aimed at improving research environments in consideration of life events and work-life balance for female researchers, efforts to improve their research capabilities, and initiatives to actively employ and promote female researchers to higher posts. To increase diversity in research environments and link it to the creation of excellent research results, it is necessary to establish and publish target and action plans as an organization, toward the promotion of enabling female researchers to play more active roles. (“Distinctive Features Type” is a cross-departmental effort within a single organization at universities and research institutes).

This year, seven Distinctive Features Type projects from a total of 28 applications were selected, and Ritsumeikan was the only university selected from Western Japan.

Ranked Third Among Private Universities for the Amount of Grants-in-Aid for Scientific Research (KAKENHI) Accepted and Fourth for the Number of Projects Accepted for Four Consecutive Years

According to a press release by the Ministry of Education, Culture, Sports, Science and Technology on October 13, Ritsumeikan University was ranked third in terms of the amount of funding received under the AY2016 “KAKENHI” Grants-in-Aid for Scientific Research (first among private universities in Western Japan), after Keio and Waseda Universities. In terms of the number of projects accepted, Ritsumeikan was ranked fourth (first among

private universities in Western Japan). The amount of funding received was 1,162,070,000 yen, while the number of projects accepted was 527—the largest number on record. Over the 11 years since 2005, the amount of funding received has increased by about 2.3 times, while the number of projects accepted increased by approximately 2.5. This year, 19.7% of the accepted projects were those of female researchers, exceeding the national average. Ritsumeikan is characterized by its high ranking in terms of the number of newly accepted projects on particular issues such as management, sociology, social welfare, city planning and architectural planning, intelligent robotics, environmental policies, and social systems.

Lecture by Ms. Juliet V. Garcia, Senior Adviser to the Chancellor for Community, National and Global Engagements, The University of Texas System

On October 19 at Kinugasa Campus, Ms. Juliet V. Garcia, senior adviser to the Chancellor for Community, National and Global Engagements delivered a lecture (co-sponsored by the Japan Foundation Center for Global Partnership (CGP), incorporated administrative agency). Over many years, Ms. Garcia has worked on a string of innovative initiatives aimed at promoting the success of students. In 2009 she was named by Time magazine as one of “The 10 Best College Presidents” in the nation, and in 2014 Fortune magazine identified her as one of “The World’s 50 Greatest Leaders.” In her lecture, Ms. Garcia discussed her experiences as a chancellor at various universities in addition to her activities in transition teams and educational improvement initiatives for Hispanic Americans. In the second part of the gathering, a panel discussion was held to discuss the impact of a diverse environment upon education and organizations and to take a closer look at her beliefs and vision in support of reforms as well as her leadership qualities.



Visit to Ritsumeikan by Current and Past Presidents of the International Studies Association

In June, past and current Presidents of the International Studies Association (ISA), which is the largest and most authoritative international society in the field of international relations, visited Ritsumeikan to deliver special lectures and participate in research exchanges. Dr. Amitav Acharya, a past President of the ISA and professor of American University, advocated a new framework for international relations, Global International Relations (Global IR). He is a well-known expert in theories of international relations and in international relations in the Asia-Pacific region, while the current President, Dr. T. V. Paul, Professor of McGill University, is a well-known researcher in the fields of international security and relations in Asia and South Asia.

During the visit, both professors gave lectures on a new world order in response to an emerging China, and through their lectures, provided sound advice to Asian, European, American, and Japanese graduate school students. They also exchanged opinions in relation to the concept of Global IR and the roles that Japanese universities—in particular Ritsumeikan—can play in this context, while holding discussions on the outlook for international relations in Asia and the possibilities for joint research on security.



Dr. Amitav Acharya (Former President, ISA)      Dr. T. V. Paul (Current President, ISA)

10th Symposium on Disaster Mitigation for Cultural Heritage and Historical Cities

On July 9, the 10th Symposium on Disaster Mitigation for Cultural Heritage and Historical Cities was held at the Kinugasa Campus. In the symposium, 28 presentations were given, detailing the results of research on disaster mitigation for historical cities and cultural heritage. A total of 105 people from across the nation participated in the event and active discussions were held in six sessions covering disaster mitigation technology, fire and fire prevention, disaster prevention planning, history and disaster prevention, and also traffic and evacuation issues. Following the academic session, Professor Kenzo Toki of the Institute of Disaster Mitigation for Urban Cultural Heritage gave a special lecture titled, “The 10 years History of Research Center for Disaster Mitigation of Urban Cultural Heritage.” In his lecture, he reported on the ten-year history of the institute’s research activities and research results, which have been highly appreciated on an international level. During the special session, Mr. Myung-sun Lee (Cultural Heritage Administration, South Korea) reported on “Assessment Methods of Disaster Risk Management Capabilities in Wooden Heritage,” while Mr. Sang-Sun Jo (National Research Institute of Cultural Heritage, South Korea) reported on “The Current Research of Safety Management and Disaster Prevention of Cultural Heritage in Korea and the Future Challenge.” The event was a highly valuable forum for learning about the current status of cultural heritage in South Korea.

\*All research results presented at the symposium are published in the journal of Disaster Mitigation for Historical Cities, Vol. 10.

The Third-Phase R-GIRO Research Program Kick-off Symposium Held

On September 16, a kick-off symposium for the Third-Phase Ritsumeikan Global Innovation Research Organization (R-GIRO) research program, “Creating a tomorrow with a declining birthrate and an aging population,” was held at the Osaka Ibaraki Campus. The keynote address, concerning “Technological innovation, declining populations, globalization, and Japanese society,” was delivered by Dr. Fumio Ohtake, Professor of the Osaka University Institute of Social and Economic Research. After this, the six research projects of the Third-Phase R-GIRO research program were introduced, followed by a discussion in which internal and external experts examined the actual issues of a declining birthrate and an aging population.



Lecture by Well-known Chinese Author, Mr. Yan Lianke

On November 7, the Kinugasa Campus hosted a lecture by Mr. Yan Lianke, a well-known Chinese author and professor from the Renmin University of China. This was hosted by the Humanities Study Group in the Chinese Language Sphere of the Institute of International Relations and Area Studies and the Modern East Asian Language and Culture Major of the College of Letters, of Ritsumeikan University.

In the first part of the lecture, Professor Wang Yao of the Department of Chinese Literature at Soochow University introduced extracts of Mr. Yan Lianke's work on the theme of "Who is Yan Lianke?" As the second Asian person to receive the Franz Kafka Prize, following Haruki Murakami, Mr. Yan is now a prospective candidate for the next Nobel Prize for Literature. In the second part of the event, Mr. Yan spoke on the theme of "Creation with poverty and uncertainty," concerning the feelings he has experienced on the path of literature creation and the things he cares about when writing a novel. At the end of the lecture, he was kind enough to give advice on reading literature and points of consideration for young people.



Hitoshi Tamiaki, Professor, College of Life Sciences Wins the Japanese Photochemistry Association Lectureship Award at the Annual Meeting on Photochemistry 2016

The Japanese Photochemistry Association recognized Hitoshi Tamiaki, Professor at the College of Life Sciences, with its Japanese Photochemistry Association Lectureship Award at the Annual Meeting on Photochemistry 2016.

The Annual Meeting on Photochemistry is a symposium where researchers present and discuss their findings in the field of photochemistry, covering a wide range of subject groups from organic compounds, metal complexes, and other molecules to inorganic substances such as oxidized metals and metals.

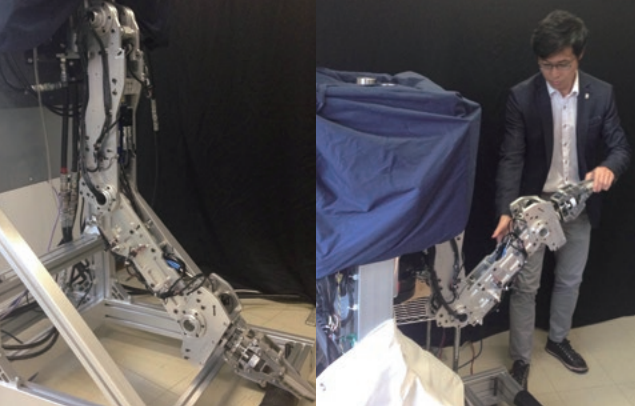
Tamiaki's active research activities in the field of photochemistry were recognized, and he gave a special lecture titled "Chlorophylls: Photochemistry, metabolism, and synthetic application" at the 2016 Annual Meeting on Photochemistry.



Sang Ho Hyon, Associate Professor, College of Science and Engineering, Develops the World's First Ever Hydraulic Hybrid Robot

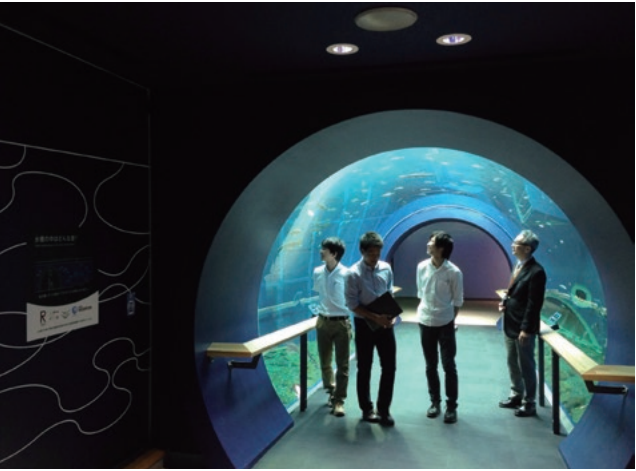
Cleverly combining the characteristics of two conventional hydraulic circuits, Sang Ho Hyon, Associate Professor at the College of Science and Engineering, invented a new driving gear (hydraulic hybrid servo-booster), to develop the first ever hybrid hydraulic robot arm to feature a driving gear. Enabling operation in harsh environments, this robot excels in terms of its high speed, precision and flexibility and shock resistance. Its thin, light-weight body enables it to move quickly and crisply, while the minimal pressure and slow down speed of the fingers allow them to move with super high precision. Also, by adding pressure with a small pump (boosting action), it can lift heavy objects and exert great power. In addition, the robot's soft joints enable it to easily control objects or absorb sudden impacts. Using this technology, the realization of an economical, high-performance robot that can execute or support operations for human beings in harsh outdoor environments is anticipated.

This research was conducted with the assistance of the ImPACT program (a Japanese government initiative) and in cooperation with Fine Sinter Co., Ltd.



The Wireless Signal Processing Laboratory of the College of Science and Engineering at Ritsumeikan University Provides Lake Biwa Museum with Underwater Sound Broadcasting Equipment.

The Wireless Signal Processing Laboratory (Professor Hiroshi Kubo, College of Science and Engineering) provided Shiga Prefectural Lake Biwa



Museum, which was remodeled and reopened on July 14, with newly-developed underwater sound broadcasting equipment. This innovative equipment was developed in a joint project with the museum. By using a PC program to remove underwater noise, the equipment enables us to hear the underwater sounds that fish experience, from outside the display tank. The tunnel-shaped water tank in the museum can now be experienced not only visually, but also aurally. Through this joint research project, we helped to realize an exhibition facility that features a high level of communication and is packed with surprise and emotion, learning and discovery—and which can be enjoyed by everyone, from children to adults.

Motoki Kubo, Professor, College of Life Sciences, and the Noevir Group Analyzes the Relationship Between Soil Fertility and Yield and the Quality of Organic Plants

In a joint study conducted with the Noevir Group on their organic JAS\* field at the Hokkaido Shokanbetsudake Pilot Farm, Motoki Kubo, Professor at the College of Life Sciences, elucidated that a cultivation method using the Soil Fertility Index (SOFIX) would increase yields of organically cultivated medicinal plants and their content of specific active ingredients. This result will

be applied to cosmetics development going forward. This research result was announced by Ritsumeikan University at the 68th Annual Meeting of the Society for Biotechnology, Japan, in Toyama from September 28 to 30 (Noevir was a joint presenter).

\*Organic JAS: Japanese Agricultural Standard for organic foods

Ritsumeikan Seminar Series Held in London, U.K.

Through joint sponsorship with the JETRO London office (supported by JSPS London), in June last year, the Ritsumeikan UK Office held the Ritsumeikan Seminar Series for Japanese-affiliated companies and Japanese researchers based in the U.K.

In this seminar, held in Japanese for the first time, Keiji Yano, Professor at the College of Letters, who is currently researching abroad, delivered a lecture on the current state of big data in the U.K. and Japan. This was accompanied by a comparison of accumulation and utilization methods on the theme of "UK geographic information seminar: What can be learned from postcodes?" After the lecture, a networking reception took place as a forum for exchange among all of the participants.

Starting soon, the Ritsumeikan UK Office plans to begin hosting the Ritsumeikan Seminar Series as a regular event.

EVENT GUIDE

Institute of Human Sciences/R-GIRO

Open workshop

New Development of Human Services: From the Viewpoint of Theories, Methods, and Institutions

🕒 10:00 to 16:00, Saturday, December 3, 2016  
📍 2F Building C, Osaka Ibaraki Campus, Ritsumeikan University  
Main venue: C273; Poster Session: C271 (Learning Studio)

Two symposiums inviting well-known researchers are to be held. From the viewpoint of the legal system and human services, Part 1 considers the question of "What is required for rehabilitation into society after criminal activity?" Part 3 concerns the issue of "Wide ranging research for continuous tracking of individuals," which has seen little success in Japan from the perspective of research and development. The program, including a poster session for Part 2, is open to the general public.

Application/Participation fee: No advance application required, free of charge (For information on access for people with disabilities and those requiring nursing care, please apply before November 21, 2016.)



Institute of International Relations and Area Studies

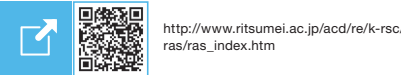
Symposium

The Role of China in International Conflicts: The Reality of Non-interventionism

🕒 Saturday, December 10, 2016  
📍 Conference Room, Soshikan Hall, Kinugasa Campus, Ritsumeikan University

We examine new aspects of Chinese diplomacy in different places of conflict around the world and consider the meaning of "non-intervention policy" in present day Chinese diplomacy. We also ask whether China—having become a major power—is moving toward an interventional attitude in the manner of existing major Western powers or whether it is establishing a new "non-intervention policy with Chinese traits."

Application/Participation fee: No advance application required, free of charge



Ritsumeikan Asia-Japan Research Organization/ Open Innovation and Collaboration Research Organization

An International Conference of Leading Universities in Asian Studies The Challenges and Prospects for Urban and Regional Studies on Asia

🕒 Pubic Symposiums, poster sessions on Thursday, February 23, 2017  
📍 Osaka Ibaraki Campus, Ritsumeikan University  
🕒 Excursion on Friday, February 24, 2017  
'Light and Dark of Globalization in Osaka'

Inviting researchers from the Australian National University (Australia), Cornell University (US), and Beijing Union University (China), an international conference on the theme of "Researching Asian cities and regions" will be held. Together with Ritsumeikan teaching staff, attendees will examine the frameworks and research project promotions necessary in order to academically re-formulate cities and regions in Asia, a region which is characterized by drastic urbanization.

Contact: OIC Research Office; TEL: +81-72-665-2570

PUBLICATIONS

Miki Kawabata

Public Bath Movements in Modern Japan

Hosei University Press



Toshiyuki Kasugai, Mariko Sakuradani, Tetsuo Takenaka, Bunro Fujimoto (Ed.)

Hikikomori Children and Young People: Thoughts and support -choosing the life that you want

Sangaku Publishing



Sumio Hamada, Manabu Murase, Ken Takaoka (Authors and editors)

Meeting the World of Autism Again - Thoughts on "Support and Relationships"

Minerva Shobo





COLUMN #1 The World of Shirakawa's Letter Science

The Chinese Character for This Year, 2015, is “安”

Takao Sugihashi

October 30 is the anniversary of the passing of Dr. Shizuka Shirakawa. Our research center is thus hosting a variety of programs and events. Please refer to our website and advertising literature. We look forward to the participation of many people.

On November 1, the Japan Kanji Aptitude Testing Foundation began accepting nominations for “Kanji of the Year.” The results will be announced on December 12 (Kanji Day). Last year, “安” was selected. Applicants offered many different meanings for this character, and the concept it inspires in university-related people like us is probably “安心立命” (Attaining spiritual peace). For reference, “命” was selected in 2006, and was ranked No. 11 last year. It is my hope that someday the character “立” will be selected, thus completing the two-character phrase of “立命” (Ritsumei).

By the way, I explained the interpretation of “立命” given in *Jitsu* in the previous installment, while the same dictionary defines “安心” as “Appeasing the mind without desire.” A detailed description of “安” can be found in *Joyo Jikai*: “A combination of “宀” (ben) and “女” (woman). Ben is the shape of a roof in a mausoleum in honor of the spirits of the ancestors, so “安” depicts a woman sitting in a mausoleum, indicating a bride who has married into a family, worshipping at the mausoleum. A newly wed wife...worships the spirits of the ancestors of her husband’s family, accepts the spirit of the clan, and is conducting a ritual to become a member of the husband’s family. In doing so, the newly wed wife can finally be protected by the spirits of the ancestors of her husband’s family and lead a quiet and peaceful life.” Denying the theory of *Setsubun Kaiji*, this description applies a unique shamanistic interpretation to thoroughly represent the credibility of the Shirakawa ideographic science.



Winner of “Kanji of the Year© 2006”: “命” (Life)  
Calligraphy by Kiyonori Mori, Chief Abbot at Kiyomizu Temple  
[How to read/Explain] (Mei, Myo/Inochi)

While Japan was embracing a festive mood with the birth of Prince Hisahito, many tragic incidents occurred such as child suicides due to bullying, domestic abuse, and accidents caused by drunk driving. This was a year when we really felt the weight and importance of life. This year, Dr. Shizuka Shirakawa delivered a lecture on written characters at the age of 96, in Fukui. Sadly, he passed away on October 30.

Source: Japan Kanji Aptitude Testing Foundation



Program for the 10th anniversary of the death of Dr. Shizuka Shirakawa  
International Symposium,  
“Shirakawa's Studies: Now and into the Future”  
13:20, Saturday, December 3, 2016  
Conference Room, Soshikan Hall, Kinugasa Campus, Ritsumeikan University

**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

Society of Foster Education of Food and Sports

Kumiko Ebi

One of the many activities for embracing sports through local foods is the Society of Foster Education of Food and Sports. In these study sessions, sports instructors from junior and senior high schools in Shiga and Kyoto Prefectures assemble every two months to voluntarily study and practice methods of instruction regarding eating habits with the goal of improving the performance of players and teams.

In the sessions, graduate and faculty students from both within and outside the Ebi Laboratory work in collaboration with the school sports instructors to extract food-related issues for teams, based on which they create and implement support plans. In addition to the graduate school students—who are already certified as registered dietitians and are aiming for certification as certified sports dietitians—these sessions also provide precious experience and real-life interaction that supports managers and players involved in competition.

In one example, the manager of the Women’s Softball Team of Heizan High School, Ms. Okumura, collaborated with second year Graduate School student and registered dietitian Yukako Murakami, who prepared an annual plan based on the current status of the team and provided nutritional support (see photograph). Ms. Okumura comments that, “We used to depend entirely on supplements, but through these sessions, we came to realize the importance of obtaining nutrition from food in an enjoyable and tasty manner.”

The program resulted in increased muscle mass and a reduction in injuries. And in addition, athletes’ awareness regarding food has changed—as seen for example in their voluntary reduction snack food intake.

Based on this experience, some players, having retired from club activities, are now working to gain qualifications as registered dietitians or enrolling at the College of Sport and Health Science.

Through these truly valuable sessions, the students and I developed alongside the instructors in the field as we helped athletes develop their bodies through what they eat during their growth periods.



[Point of contact] **Society of Foster Education of Food and Sports**  
Dr. Ebi's Laboratory, Faculty of Sports and Health Science, Ritsumeikan University, 1-1-1 Nojihigashi, Kusatsu City, Shiga Prefecture, 525-8577 Japan  
Email: info@shokuspo.jp

**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

Realization of the Evidence-based human services throughout the lifetime

Foundation of a research center to support Life comprehensively, aiming to be “Unique in Japan and Rare in the world”.

Yuko Yato

This is a series of essays by members of the College of Comprehensive Psychology, which was established in April 2016. As the first installment, Professor Yuko Yato describes the contents of her R-GIRO Research Program.

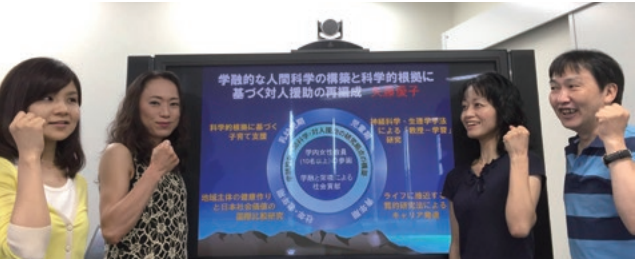
I'll start a large-scale research project on human development, titled ‘Constructing trans-disciplinary human science for evidence-based human services’, as one of Research Core forming the R-GIRO Projects. My research project comprises the following four research groups. (Names indicated in parentheses are team leaders.)

1. Child Socialization; Transdisciplinary Research for the Evidence-based Parenting Support System (Yuko Yato, Professor, College of Comprehensive Psychology)
2. Neuroscientific and physiological approach for analysis of teaching-learning process (Naoko Okamoto, Associate Professor, College of Social Sciences)
3. Career development in adolescence and its guidance: With qualitative research method to grasp lives (Yuko Yasuda, Associate Professor, College of Comprehensive Psychology)
4. Evidence-based health promotion in region; Perspectives from Disaster resilience and Cross-cultural comparison (Tatsuya Sato, Professor, College of Comprehensive Psychology)

The purpose of my project is to conduct transdisciplinary research on issues faced by all the generations including infants, children, adolescents, adults, and elderly in the aging society with fewer children, from the perspective of behavioral development, neuroscience, narrative psychology, and sociology of local community. My project also aims to realize evidence-based human services (intervention in children with developmental disorders and students with difficulties in learning; support for career selection and employment support for people with disabilities; health promotion for elderly people, etc.).

This year, we will collaborate with a general hospital in the neighborhood of OIC to launch the Ibaraki Cohort study, which includes investigation of prenatal environments and fetal behavior using 4D ultrasound image data, in addition to a series of experiments, questionnaires, behavioral observations, physiological indices, and evaluation of social interactions using behavior measurement instruments after childbirth. At the same time, this project will conduct nationwide internet-based questionnaire surveys cooperating with cohort study teams in and outside Japan.

One of the main characteristics of this project is the participation of many excellent female researchers belonging to various departments and organizations. From diversified viewpoints, we aim to create a “Unique in Japan and Rare in the world” research center in which we can seamlessly connect the individual stages of human life and provide comprehensive supports for all generations.



**Yuko Yato** Professor, College of Comprehensive Psychology  
Professor Yato received her Ph.D. from Osaka University in 2001, worked at Toyama College as a lecturer, and was then chosen for the Research Institute of Science and Technology for Society (RISTEX), the Japan Science and Technology Agency (JST). She was appointed Associate Professor in the Department of Psychology in the College of Letters at Ritsumeikan University, and to her current post in April 2016. In September 2016, she received the JSDP Award (Keynote for The British Psychological Society, Developmental Section & Social Section Annual Conference).

Ritsumeikan Saturday Lecture Series

The late Dr. Hiroshi Suekawa, then the President of Ritsumeikan University, proposed that “study and science are for the sake of protecting the benefits and human rights of citizens and the general public. A university is a place to develop human beings through study, and it is important to walk, think and study along with the general public.” Therefore, the Ritsumeikan Saturday Lecture Series was established to open the lectures of the university to the general public and strengthen the ties between the university and the local community. Ever since the first lecture entitled “About the Labor Union Act” by Professor Hiroshi Suekawa on March 31, 1946 during the turmoil of the postwar period, for more than half a century, this series of lectures has taken place.

Dec. Nakagawa family and Modern Japan

Dec. 3 No.3188

Nakagawa Kojuro and Karafuto development

Yuri Masugi, Researcher, Ritsumeikan Archive Center

Dec. 10 No.3189

The politic action of Nakagawa family in the Late of Edo Period.

Katsuji Nara, Assistant Professor, College of Letters, Ritsumeikan University

Jan. Digital Archiving of 3D Cultural Heritage and its Utilization: Frontier Information Technology and Integration of Humanities and Science

Jan. 14 No.3190

Scientific Analysis of the Beautify in Traditional Textiles

Hiromi Tanaka, Professor, College of Information Science and Engineering, Ritsumeikan University

Jan. 21 No.3191

Pioneering Paradigm of Cultural Heritage Lead by the 3D Digital Documentation Technology

Hiroshi Yamaguchi, Associate Fellow, Nara National Research Institute for Cultural Properties

Jan. 28 No.3192

3D Measurement and Precise See-through Visualization of Festival Floats in the Gion Festival

Satoshi Tanaka, Professor, College of Information Science and Engineering, Ritsumeikan University



Ritsumeikan Saturday Lecture Series website  
<http://www.ritsumei.ac.jp/acd/re/k-rsc/kikou/doyokozakikoh.htm>

Admission free, no advance application required

Lecture room, Suekawa Memorial Hall, Kinugasa Campus, Ritsumeikan University

Contact Us

Latest information on research activities



Ritsumeikan University  
Research and Industry-Academia-Government Collaboration website  
<http://en.ritsumei.ac.jp/research/>

For inquiries in relation to RADIANT, the Ritsumeikan University research report, contact:

Office of Research Planning & Development,  
Division of Research, Ritsumeikan University

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