

Introduction: Human Survivability Studies

Shuichi Kawai and Koichiro Oshima

This Introduction outlines the new field of Human Survivability Studies (HSS) that aims to address and resolve the complex structural issues now facing the global community. The integrated studies we produce are transdisciplinary and cover global issues with a broad spectrum, involving large-scale and complex systems such as cultures, industries, economies and nations.

The Introduction also describes the educational philosophy of the Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) of Kyoto University. This program has been designed to cultivate the next generation of leaders through the practical application of HSS.

What is ‘Human Survivability Studies’?

How does Human Survivability Studies differ from the established sciences? Why is this field necessary at this point in time? The aim of this book is to construct a new scientific paradigm. It will first outline the social and scientific backgrounds, then clarify the purpose of HSS and discuss its framework.

Throughout the history of our planet and process of our biological evolution, many species have become endangered or extinct. Human history and the history of civilization also tell us much about the rise and fall of states and societies and local environmental change. In the same way, we can safely predict that the human race and our global systems, though currently thriving more than ever, will also face various problems and crises in the near future – and some of them will threaten our very existence. The same is true for states and societies. Therefore, HSS is a science that incorporates geological and biological history, human history and civilizational history, and uses this knowledge to map out means of survival for

humankind and global society. For human beings, the realities of life and death are both unfathomable and inescapable; they have posed some of our most important philosophical conundrums since time immemorial. But the survival of humanity and states or societies (organizations) poses another important challenge. To deal with this kind of challenge, it is necessary to pool knowledge from many different sources. Only by using a broad range of knowledge and understanding will we be able to solve problems, identify challenges and explore and enact methods of resolving them.

Contemporary society at various levels – from individuals to communities, states, global systems and global society – faces a compound set of problems. HSS is a practical science that tackles and attempts to solve these issues. This new academic approach presents a scientific system that integrates and structures the knowledge and wisdom of individual sciences. Over time, the various scientific disciplines have been developed and strengthened, but at the same time have also become compartmentalized. HSS rearranges and recomposes them, so that they can be used as knowledge for survival in practical situations.

This book discusses new ideas and scientific methods that will form the basis of human survivability. Further, in referring to practical applications, it attempts to build a framework for this new scientific system using case studies of initiatives on specific issues as well as exploration and innovation aimed at the future.

Challenges for contemporary society

The challenges we face today are growing conspicuously broad in scale and complex in nature. With the rapid growth of the world's industrial economies since the twentieth century, environmental problems have expanded from issues of local pollution to climate change, atmospheric pollution and other global-scale concerns. The 'Arab Spring' that started in Tunisia in 2010 before spreading to other North African countries has morphed into conflict and chaos in the Middle East. The US financial crisis triggered by the Lehman Brothers collapse of 2008 sparked a fiscal crisis in Europe and a global economic crisis. Japanese society, too, has rapidly lost its dynamism, due to the economic stagnation since the collapse of the bubble economy in 1992, the emergence of population shrinkage and the super-aging society, among other problems. In particular, Japan

was dealt a heavy blow by a combination of natural and manmade disasters, namely the massive earthquake and tsunami known as the Great East Japan Earthquake of 2011 and the ensuing nuclear power plant accident. These disasters have led to a major loss of trust in science and technology, and the fragility of Japanese society was arguably exposed in the underdevelopment of its crisis management resources. On the other hand, the disasters also re-awoke awareness of the resilience of Japanese society in terms of the autonomy of social order and the strength of public spirit. They also underlined the national character of the Japanese, who act in observance of courtesy and order. Besides achieving an early recovery from the disaster, measures to thoroughly investigate the causes and use the results to mitigate future disasters could be framed as the most pressing issue.

Thus, the global community today faces a variety of challenges, including regional conflict, economic crisis, population problems, environmental pollution and the spread of infectious disease, and it is difficult to see how these issues can be overcome. The globalization and ‘flattening’ of information as well as people and goods have contributed greatly to the increasingly complex nature and broad geographical scale of problems. We are in the process of building an information infrastructure whereby anyone, anywhere in the world, can obtain homogeneous information simultaneously, albeit with differences in degree. By contrast, the trends toward local uniqueness, diversity and cultural tradition have emerged in reaction or opposition to the series of moves toward globalization. It is imperative that we achieve a paradigm shift with an eye on the future, while attempting to harmonize these changes.

Challenges for the sciences

How is the academic world planning to address these diverse challenges facing contemporary society?

Modern sciences have accumulated knowledge on humanity, society and nature, taking ancient Greek philosophy and sciences as their source. In particular, the modern sciences that have developed since the Renaissance in Europe have universalized science as a methodology, and have developed means of clarifying cause-and-effect relationships via reduction to simple elements and models. Scientific methods have arguably provided the foundations that

support a wide variety of empirically based academic pursuits by accumulating facts through observation, experiments, investigation and other means of hypotheses testing. This method of exploring scientific wisdom by 'learning how to learn' has been extremely effective as a methodology for the continuous production of knowledge. As a result, it has been applied and adapted to many academic fields and has led to major achievements in various fields of natural science, including the elucidation of natural phenomena and the development of technology that enriches human life, in particular.

However, it has occasionally been pointed out that the sciences that have developed and intensified on the foundation of scientific methods have now deviated markedly from the actual situations and realities of human life and society, as well as natural phenomena. As a result, it could be argued that these foundations no longer adequately provide the means for a given scientific field to grasp phenomena in the complex and interdependent challenges facing contemporary society, or to elucidate and address their causes.

Regarding the Great East Japan Earthquake, mentioned above, issues have been identified in terms of the lack of organization and comprehensive analysis of previous knowledge and historical realities of earthquakes and tsunamis, as well as the inadequate use of measures to avoid risk and reduce damage. If we include physically imperceptible tremors, earthquakes occur tens of times per day in Japan and the surrounding region. Conversely, large earthquakes that cause significant ground motion and tsunamis due to tectonic movements, etc., occur only once every 100 to 1,000 years. In this way, the frequency and scale of earthquakes are known to follow a pattern of power distribution. How are we to confront the risk of a major earthquake that occurs only once every 1,000 years? How should we evaluate and manage the risk posed by earthquakes, determine standard criteria and devise disaster mitigation measures? It goes without saying that decision-making in this regard must be based on scientific knowledge. There is, however, no single solution to these challenges. It is therefore essential to involve residents of the areas in question in this decision-making process, as well as expert groups representing the government, industry and academic societies. The individual scientific fields engaged in addressing these challenges are wide-ranging; they include not only technical fields such as physics and engineering, but also law, economics, the social sciences, philosophy, history and other fields in the humanities.

The Great East Japan Earthquake also exposed a number of socioeconomic issues that need to be considered. Aside from technical issues related to preventing accidents in nuclear power plants, these also include directions for risk management and power supply systems, knock-on effects to resources and energy policy, the economy and industry and ways of achieving a process of consensus through resident participation. With a view to reconstructing local residents' lives following the Fukushima nuclear power plant accident, moreover, we urgently need to specify issues, identify aims and implement various measures based on medium- to long-term prospects. These include the technical problems and financial burdens involved in removing radiation from polluted areas, the technical and social issues related to the storage of radioactive waste and pollutants, the evaluation of risk and creation of management standards based on scientific evidence and the dissemination of scientific literacy. It is clear that we cannot adequately address such a complex disaster from individual scientific fields alone.

Many disciplines and fields have developed independently, and the interconnections and networks between fields have been lost in the process. As a result, the sciences seem to have become isolated in their fields, lost their flexibility and become detached from a society in a period of major transition. This has made it harder to address real social issues from narrow specific fields alone, as they have become segmented along with their increasing sophistication.

In order to resolve this, a flourishing trend in recent years has seen researchers from numerous fields become involved in interdisciplinary and multidisciplinary research. The growth of interdisciplinary research, which spans the boundaries between fields and thus expands their scope, will lead to the rise of new specific interdisciplinary fields, and these will eventually become recognized as independent disciplines. If we step back and look at the bigger picture, however, we may also perceive this trend as one that promotes segmentation. Thus, if the development of sciences is overly focused on establishing narrow specific fields, this process could swallow the new fields in the pitfall of segmentation. What the sciences need now is a new approach to explore transdisciplinary fields through the process of reorganization, integration and emergence. This will enable us to gain an understanding of science as a whole, while connecting specific

fields freely whenever necessary to form networks and solve social problems.

What are Survivability Studies?

As mentioned above, ‘life’ (the meaning of living) and ‘death’ in combination present human beings with our most important philosophical proposition. Yet until now, the history of the human race has arguably focused only on the path of development based on the concept of ‘historical progress’. Today, we also need to consider the problem of human extinction and avoiding this outcome, along with the progress and development of the human race, global systems and the global community. We must understand the diversity of species and the uniqueness of states, societies, cultures and values, and create a world in harmony with the contemporary trends of globalization and the universalization of technology and information.

An important aspect of Survivability Studies is that we draw on past case studies to acquire knowledge, technology and systems to perpetuate evolution and diversity and avoid extinction for all living organisms including humans. These issues have not been sufficiently investigated until now. On this basis, we prepare for the future. The work of ‘relativizing’ the human race, as it were, is an important task.

Survivability Studies is a scientific approach that searches for ways to extend the existence of human beings and the global community. The studies we produce aim to acquire the wisdom needed to avoid seemingly inevitable crises. HSS is the collective name given to research that broadly explores ideas, methods, policies, applied technologies and other practices and applications aimed at overcoming society’s problems. As such, it is not merely a question of theory and methodology, but has an inherently transdisciplinary and trans-science nature, with a broad perspective including a practical application to problem solving, case studies and the development of new innovations. We need to value the interconnections and links (i.e. context) between ideas or concepts for human survivability and the contents applied to put these into practice (methodologies, specific scientific fields, case studies, etc.), and to integrate these from an overarching perspective.

The research carried out under the umbrella of HSS aims to produce new knowledge for solving problems, i.e. knowledge and understanding for survival. This is achieved by taking a broad

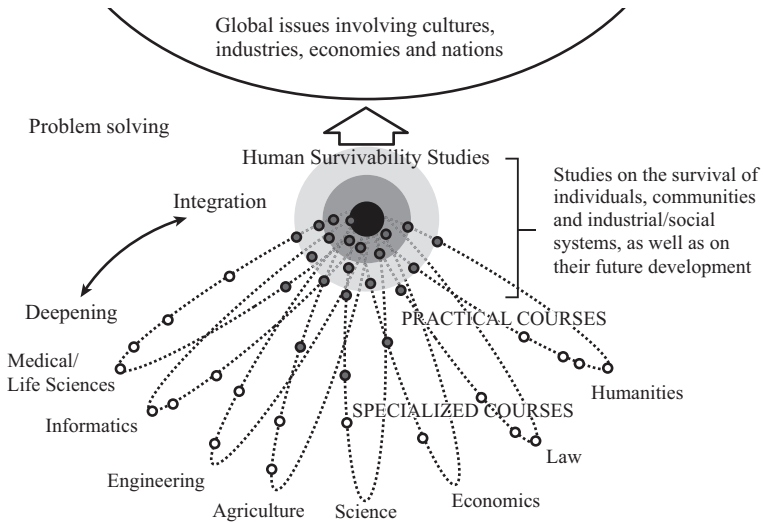


Figure 0.1: The relationship between Human Survivability Studies and existing fields of science

perspective of existing scientific systems, accumulating logical thought and bundling together, reorganizing, utilizing and merging specific fields. As such, HSS, as shown in Figure 0.1, may be perceived as a composite science that focuses on problems in relation to survival.

Essentially, there are two ways of looking at things – from a ‘bird’s eye view’ or from a ‘worm’s eye view’. A bird’s eye view is particularly relevant during times of change, or when it is difficult to predict what lies ahead. This view entails taking a macro-perspective, an overview of things. This is the ‘eye’ with which we form a composite picture of various events and phenomena, and combine them to identify future directions. The concept behind ‘HSS’ can be said to rely on this kind of perspective. But even if we can use a bird’s eye view to forecast the signs of future shifts, we then need contingency plans with which to address them. That’s why we also need a worm’s eye view. This is the ‘eye’ used to ascertain diversity and individuality in more detail from a micro-perspective. It is not simply enough to have a ‘grand design’ when creating systems; fine-tuning with close attention to detail is also necessary,

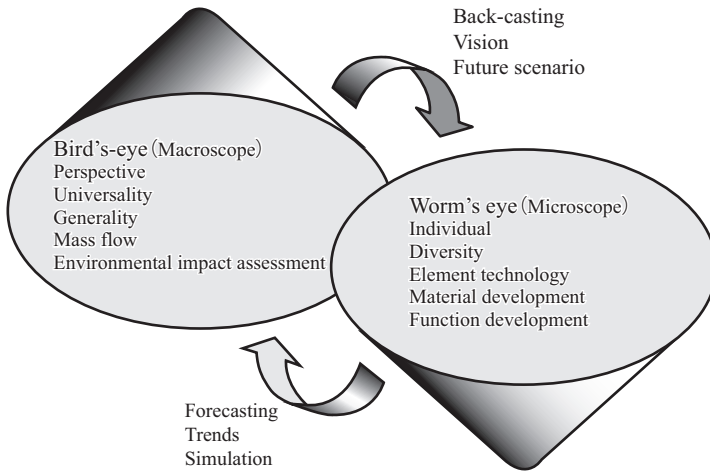


Figure 0.2: Bird's eye view and worm's eye view

and for this it is essential to have new technologies and systems. To put it succinctly, HSS broadly takes a bird's eye view to issues, while individual disciplines provide a worm's eye view. The two are in a mutually complementary relationship.

The issues tackled by Survivability Studies are social issues that have become complex and broad in scale, for example, population problems, environmental destruction, securing food, water and energy, addressing inequality, eradicating poverty, promoting access to education and tackling other immediate and pressing issues related to human survivability that are shared worldwide. Then there are other issues connected with our response to safety and security and health and crisis management, such as regional conflicts, terrorism, extreme weather, disasters and infectious diseases. One could also cite issues specific to certain regions; in Japan's case, for example, we have a super-aging society, the depopulation of mountain villages, regional revitalization focusing on small and medium-sized cities and measures to combat earthquakes, to name a few. Although these are mainly local problems, they could equally be viewed as issues that will one day impact on other parts of the world.

These social issues that confront us both domestically and globally suggest that the natural, ecological and social environments

around us have become increasingly pluralistic, interdependent and complex as a consequence of globalization. Not only are these three environments mutually interrelated, but they are also prone to be impacted by violent change. This makes it difficult to address the problems facing the contemporary era sufficiently with existing knowledge and experience, or by forecasting based on an accumulation of existing situations alone. There are limits to methods of simulation based only on endorsing the status quo. Conversely, the use of goal-oriented ‘back-casting’ has now started to attract attention. Scientifically, back-casting remains little used at this point due to the difficulty in specifying parameters for setting the ‘desirable future’ (goal) to be targeted. It does however have clear targets as a practical method in real situations, and the effects of application are considerable. It is effective as a way of envisioning the desired future image of society, depicting scenarios aimed at materializing this, foreseeing changes, presenting a vision for the future and materializing goals. As such, it could be seen as a practical method.

The structure of HSS

Survivability Studies are conceptually very similar to ‘Sustainability Studies’. The focus of the latter was on environmental problems, then expanded to the wide range of global issues being targeted as Sustainable Development Goals (SDGs) in 2030. The main concerns here include mitigating climate change in the geosphere and reducing carbon dioxide emissions, halting the depletion of resources and energy and conserving biodiversity in the biosphere and preserving food and water resources and achieving zero emissions in the human sphere. In ‘Our Common Future’ (1987), a report by the UN Brundtland Commission, ‘sustainable development’ is defined as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’. In other words, it is defined as development that ensures intergenerational equality. In the UN Conference on Environment and Development (1992), ‘environment and development’ are set on an equal footing as two sides of the same coin. But in reality, environmental protection and development or growth are often in a trade-off relationship; the expression of sustainable development (growth) often places weight on development while environmental protection merely exists as a front.

Survivability Studies, as outlined above, is concerned with technology, policies, tactics and strategies designed to facilitate survival and the wide-ranging issues related to crisis response and decision-making. Both of these are conceptual in nature, and both take a macro-approach, such as attempting general analyses from a ‘bird’s eye view’. In HSS, however, existing frameworks (structures), functions and forms are expected not only to be maintained, but also to be freely transformed if necessary. As will be shown below, HSS is characterized by unified ideas, methodologies and practices for opening up future possibilities, including case studies on individual issues and innovation. This is a unique characteristic that differs significantly from Sustainability Studies and other fields of science.

Human Survivability Studies is a problem solving, goal-oriented scientific system that focuses on issues; it does not rigidly adhere to any specific discipline or field, but extracts the knowledge and experience needed to resolve issues from a broad spectrum, then explores and enacts measures to solve them. With this kind of dynamism, this new transdisciplinary field requires support from new ideas and philosophy. We need to form a new concept by combining words that express the ideas developed by Survivability Studies with heterogeneous words. At the same time, new methodological designs are also required, in line with the objective of this new field. We also need a theory of practice, including case studies, applied technology and policy research to relativize various sciences, gather and analyze the outcomes of a wide range of sciences and ultimately resolve issues.

Figure 0.3 shows the framework of ideas, methodologies and practice behind HSS in graphic form.

As is clear from the figure, the component elements of HSS are structured into three stages. Stage 1 represents the concepts, philosophical ideas, moral philosophy, historical studies and culture related to knowledge for survival. Stage 2 represents scientific methodology, analytical methods and logical thinking and Stage 3 involves practice, including policy, innovation, applied technology and case studies, as well as applied science. Taking Stage 1 as the concept and Stages 2 and 3 as the contents, sufficiently understanding the correlations and links connecting these two (context) is extremely important in Survivability Studies. This may be interpreted as a foundation for thinking about and practicing rational and appropriate methods of solving the problems that face

Human Survivability Studies includes developing the philosophy, methodology and applications to resolve complex social issues

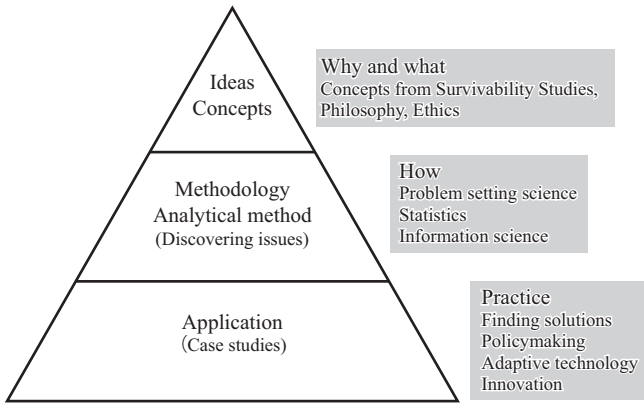


Figure 0.3: Framework of Human Survivability Studies

contemporary society – or in other words, as cultivation (intelligence, knowledge, practical ability).

The ideas applied to philosophy and science are characterized by aiming to solve problems continuously through a series of processes, namely discovering problems (establishing or extracting hypotheses), data mining by observing, investigating and experimenting, data analysis by creating models, etc., verifying and evaluating conclusions and reestablishing problems (hypotheses) (see Figure 0.4). Because scientific methodology can be applied to many issues, it has been established as a general research method in all kinds of academic domains across the natural sciences, humanities and social sciences. The PDCA (Plan-Do-Check-Action) cycle that is widely applied in industry and corporate strategy today can also be perceived as having brought scientific methods into the world of practical business, where they have developed into improvements and innovations in technology and organizational and corporate systems.

However, because scientific methods simplify and create models in their analytical process, they tend to fail to consider gaps in relation to reality. This sometimes causes them to lose sight of their original objective. In HSS, as shown in Figure 0.5, academic papers from various fields of science and documents such as reports by governments, public corporations, think-tanks and others are treated

as metadata and case studies, and are aggregated and analyzed with the focus on a given problem. This means that science, statistics and information science form the methodological foundation. It is essential that, by integrating metadata and case studies, we develop a methodology that pursues universality and diversity and provides a structure of knowledge for survival, thereby providing a ‘bird’s eye view’.

Composition of this book

This book is an attempt to show the framework behind the ideas, methodology and practice of HSS. HSS has only just begun life as a transdisciplinary field of science. By surveying the survival and future of the human race and the global community, identifying problems and fleshing out comprehensive solutions, case studies, practical research and so forth, we hope to create a balanced constitution and structure in the near future.

This book consists of five parts. Here in the Introduction, we have raised the question ‘What is Human Survivability Studies?’ and discussed the objectives and framework behind this new field, thereby outlining the overall structure of this book.

In Part I, we discuss actual issues related to human survival founded in the humanities, including the ideas behind Survivability Studies emerging from philosophy, literature, historical studies, etc. We begin by questioning what the survival of human beings and the human race actually constitutes and consider the meaning and significance of survival by taking a bird’s eye view of our planet, life and the paths of development, maturity and decline of the human race. We also examine language and communication as the foundation for cross-cultural and multi-functional understanding.

In Part II, we attempt to build a methodological basis for Survivability Studies, taking into account approaches and methods used in the social and natural sciences. We also discuss the advanced techniques used in information technology, a field that has seen such conspicuous growth in recent decades, and the approach used by Survivability Studies to apply these techniques.

Parts III to V are concerned with the application of Survivability Studies. They introduce case study research showing the bird’s-eye view adopted by Survivability Studies regarding particular issues and its general approach to solving problems. Specifically, Parts III

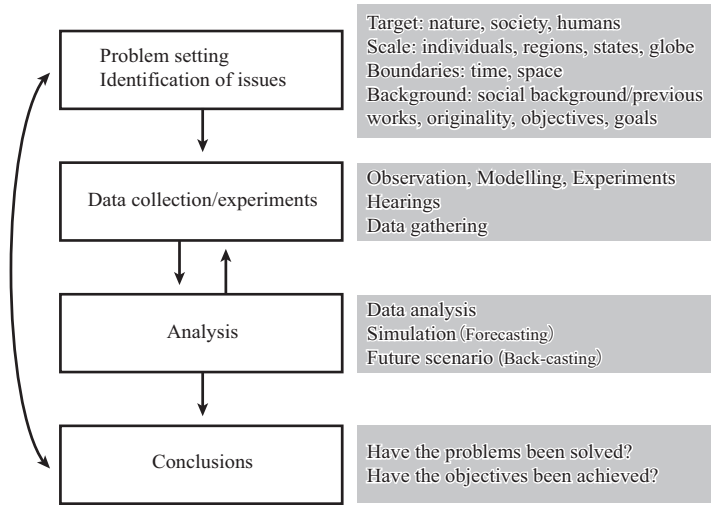


Figure 0.4: Methods used in philosophy and science: Ways of exploring knowledge, 'learning how to learn'

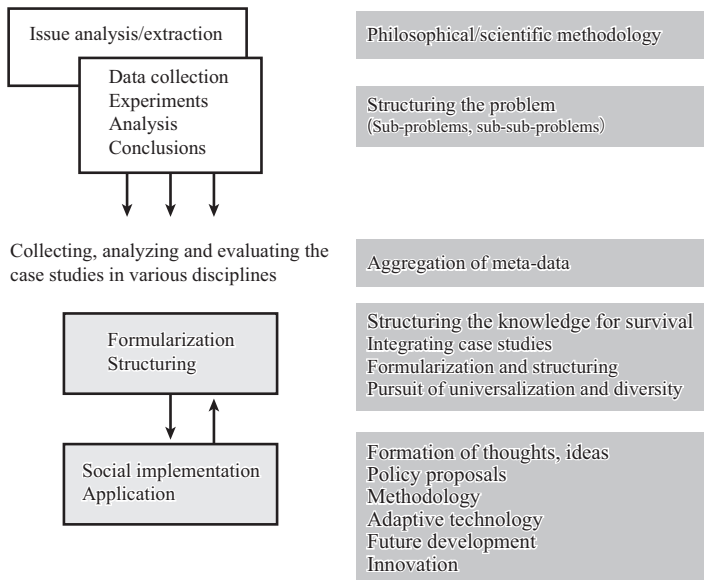


Figure 0.5: Methods used in Human Survivability Studies

and IV deal with the various problems facing contemporary society and issues for Survivability Studies as practical fields, while Part V raises issues related to opening up future possibilities.

We hope this book will be of assistance to readers in helping them understand the challenge of building the new academic transdisciplinary field of Survivability Studies.

Educational philosophy on Human Survivability Studies

Human resources today: Developing leadership material

While scholarship in individual fields of specialization is aimed at specific fields, objects, methods, etc., HSS specifies no field and targets a variety of tasks. To compare it to a jigsaw puzzle, individual fields of specialization in science could be seen as the pieces, while HSS reveals the whole picture, clarifies mutual meanings among the pieces and the relationships between them and creates a composite picture (overall solution) from the pieces. In HSS, we present overall prospects and visions for complex issues, and use and practice multiple individual fields of specialization to clarify methods of analyzing and solving issues.

Prior to now, the point has often been made that, while subdivision has furthered the development of sciences in isolation, it has also increased their estrangement from the human race and society; they are no longer equipped to deal with the contemporary issues that confront us. Schrödinger, for example, states that the many and varied branches of academic disciplines have expanded significantly both in breadth and depth, but that the only way of linking the sum of their parts into a single whole is to embark proactively on the work of integrating the various facts and theories (1944). In recent years, the social responsibility of science and scientists was brought into question and the need for ‘Science in society, Science for society’ was extolled under the Budapest Declaration (at the 1999 World Conference on Science).

As a way of coping with issues such as the rapid advance of globalization in the twenty-first century and the various global problems and crises that rarely occur but entail serious risks, activity in fields of research and education addressing global studies, leadership studies or existential risk has become animated in universities and research institutes all over the world. In Japan,

too, the Great East Japan Earthquake disaster and ensuing nuclear power plant accident of March 2011 demonstrated the importance of having strong leaders when coping with crises. On a global level, similarly, there are concerns over the lack of leaders able to pose solutions to increasingly complex issues. The search is on for leaders able to see things from a macro-perspective and develop ways to break through the sense of insularity permeating the current era.

Thus, developing leaders is now a major challenge both in Japan and abroad. In policy terms, the Japanese government has published the 'New growth strategy' (2010), and, in the educational sphere, the Central Council for Education has reported on 'Graduate school education in a globalized society: To make graduate school graduates more active in diverse fields around the world' (2011). Meanwhile, the Japan Business Federation (2011), the Japan Association of Corporate Executives (2012) and others in the business arena have also made similar proposals concerning the development of global human resources. In fact, the question of how leaders should be developed is one that is being broadly discussed in society.

The creation of the Kyoto University Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) represents a contribution to dealing with the issues raised above, from academic and educational perspectives. The aim of education at GSAIS is to 'develop global leaders' and to nurture individuals who will acquire the knowledge to link integrated understanding with practice, and will in turn connect practice to academic research. To put it another way, while graduate schools in Japan have until now trained individuals who have immersed themselves deeply in individual academic fields, the educational aims of GSAIS are to equip students with a broad liberal education and macro-perspective, and to train them to become a new type of expert practitioner able to take up the challenge of resolving issues in the global community.

Imagining and developing new leaders

Throughout industry, government and society at large, the issue of developing innovators and leaders is subject to a great deal of expectation. But what is the specific form of leadership that is actually needed and sought?

The desired image of a leader may differ depending on social circumstances, organizations, attitudes, etc. The qualities required of

a leader may also change. In an epoch like the present, characterized by constant change, or when a shift to a new paradigm is occurring, it is very important to have the foresight to look ahead. There is a great weight of expectation on leaders able to not only present a vision, but also to enact and provide the driving force behind it. For this, various characteristics are required, such as decisiveness, communicating from multiple points of view and guiding innovation, for example. In fact, if we look closely at the image of leadership sought by the world and society, it seems as if the focus is not necessarily fixed. This is probably because the characteristics required of a leader tend to be based more upon qualities or disposition than on knowledge. This makes it difficult to develop leaders using conventional methods of education, the aim of which is to teach knowledge and skills.

So, what should be done to develop this kind of leader? It is often said that 'Leaders are born on the battlefield'. This could be paraphrased as 'The important thing is not knowledge but practical experience'. In that sense, 'the battlefield' is a great teacher. It is by actually confronting issues in the field and having no option but to address them that those who take up the challenge of forging solutions will emerge. We could say that leaders are trained through actual practice. If there is one quality that is shared by leaders, it is a kind of strong will, a belief and determination to accomplish 'something', whatever that 'something' might be.

The Shishu-Kan challenge: Establishing GSAIS

In the spring of 2010, a decision was made to create a new type of graduate school at Kyoto University, following a proposal by Hiroshi Matsumoto, the University's President at that time. A taskforce was organized, and a concept for developing human resources together with an educational curriculum designed to materialize this concept were drawn up. Unlike conventional graduate schools, the educational goal was to 'develop next-generation leaders who will be active in the global community', or in other words, to develop individuals with a comprehensive, macro-perspective capable of becoming leaders in society. To achieve this goal, the Graduate School of Advanced Integrated Studies in Human Survivability was established three years later. Though the name is abbreviated to 'GSAIS', this Graduate School is commonly known as 'Shishu-Kan' because it takes care of the 'Kyoto University Graduate School

Shishu-Kan' human resource development program (a leading program in doctoral course education inaugurated in 2011–2013). In other words, the organization responsible for implementing the 'Shishu-Kan' is the Graduate School of Advanced Integrated Studies in Human Survivability.

Rather than being the name of an actual academic field, such as engineering or law, the 'Shishu' in 'Shishu-Kan' refers to the style and method of academic discipline targeted by GSAIS ('Kan' means a building or hall). The education is based on the Buddhist concept of *mon-shi-shū* (listening to teaching, thinking about its truth and mastering that truth through practice). This refers to the three stages of wisdom obtained through the pursuit of knowledge, namely *mon-e* (receiving wisdom), *shi-e* (thinking wisdom) and *shū-e* (practicing wisdom). Based on learning in university faculties (*mon-e*) and the knowledge and experience gained from it, GSAIS was named 'Shishu-Kan' as a platform for logically integrating this learning and engaging in deep thought to link it together (*shi-e*), attempting to apply the findings thus obtained to the various problems facing contemporary society, deepening and honing knowledge through practice (*shū-e*) and enacting this.

The GSAIS curriculum and its characteristics

Figure 0.6 shows a specific curriculum based on the concept of *shishū*. Being a graduate school, one of the main pillars is of course 'research'. Each student chooses a five-year research theme, studies subjects and conducts research to consolidate a foundation in a field of specialization, while also taking practical subjects such as leadership and doing an internship. At the same time, students also study a liberal arts subject called *Hasshi* (lectures on integrated academic foundations). The curriculum is designed to produce, over the five years of the course, individuals who can conduct research from multifaceted viewpoints using specialized knowledge; or in other words, practitioners who, at the same time as being experts, are also equipped with wide-ranging knowledge and the ability to apply it, and who are able to challenge social issues.

The GSAIS curriculum does not necessarily consist only of subjects with clear goals. For example, there is a subject called *Jukugi* (industry-government cooperation special seminar), the aim of which is to enhance abilities that cannot be directly taught. *Jukugi*

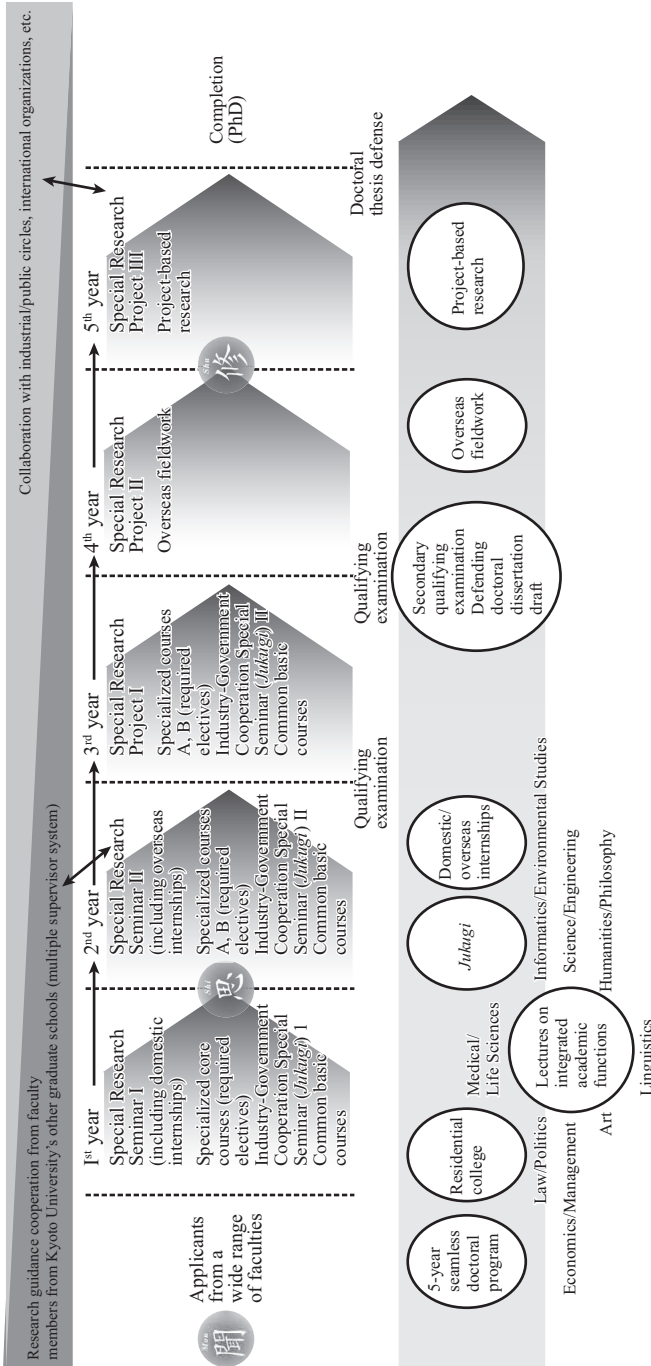


Figure 0.6. The curriculum at GSAIS

is an essential subject for training the leadership mindset, including self-awareness as a leader, determination, attitude, behavior and the spirit of challenge. Here, 'mindset' is particularly important. This is knowledge that comes from personal experience, as receiving tuition directly from someone with rich experience is the quickest way forward. This is a subject in which students are tutored directly by lecturers who are top leaders in various fields, including administration, industry, finance, international agencies, etc. They absorb their experience, feel their energy for themselves and make it their own. In this way, *Jukugi* gives students the opportunity to learn experience and wisdom from the field through dialog and Q&A with lecturers.

Internships and fieldwork to facilitate learning through practice are also incorporated into the curriculum. In the first year, students engage in domestic internships, or more specifically, volunteer activities in welfare institutions for the elderly. In the second year, they work as Short-term Overseas Youth Cooperation Volunteers for the Japan International Cooperation Agency (JICA) for one month during the summer recess. The details of the posting are determined after the submission of application documents, a written examination and an interview. Next, students study 'international cooperation', learn a local language and take part in preliminary training implemented by JICA. The volunteers sent to Bangladesh in 2015 carried out an organized and systematic impact assessment on a rural development project in cooperation with a local rural authority and the JICA office, with great success. This is a precious local experience for the students, as they experience homestays for one month in an environment where the language, customs, climate, culture and so many other things are different. In domestic and overseas internships, the basis lies in learning the spirit of service. Students acquire the ability to communicate, identify and solve problems, and take action through experience in the field.

Overseas fieldwork in the fourth year is designed for students to acquire international and social qualities through communication and exchange, to experience the processes of setting tasks and solving problems in the field and to hone their on-site and practical abilities. This is of course preparation for their future career path. Specific destinations include international agencies that will be their future places of employment, such as the Organization for Economic Co-operation and Development (OECD), the Food and

Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the Economic Research Institute for ASEAN and East Asia (ERIA), as well as research institutes and global companies. Some students instead prefer to work with international NGOs. Detailed plans are required in order to connect with their future employment, while also linking to the research content of their degree thesis. Although many students currently want to work for international agencies, we expect more students who will represent companies and organizations to emerge in future.

In the fifth year, the students work on project-based research (PBR). This is the culmination of their practical education and research up to the fourth year. Students carry out PBR in organizations such as companies, government bodies or local authorities. They plan and implement projects in collaboration with their host organization, after which they assess and verify the outcome before compiling a final report. For example, they may hold international workshops or draw up standards on environmental regulations in connection with the policies of local authorities (although there is one student who aims to start a micro-hydro power company during the fifth year). These research projects provide opportunities to experience the sequence of processes connected with a project and to hone the qualities and abilities required of leaders from a comprehensive point of view.

To summarize the above, the Shishu-Kan Graduate School has the following three characteristics. It introduces a tailor-made curriculum in readiness for a five-year integrated degree program. Enrolled students come from a wide variety of backgrounds, including those from broad-ranging humanities, social and natural science fields, those with previous professional experience and international students. The research themes, subjects and fields of specialization they tackle are also diverse. Their aspirations and career expectations at the end of the five years are extremely wide-ranging. This means that we form curricula in line with each student's aspirations and career path, and in line with their research themes.

For this purpose, we employ a teaching staff representing a wide variety of fields, and adopt a system of multiple instructors based on mentors and research instructors. These guide the students in everything from care for their daily lives to deciding their study

subjects and monitoring their progress, while also giving detailed guidance on their research, etc. To achieve this, we operate a system of education in small groups. We also provide a residential college facility as a 'site' where students can share their daily lives, work hard and help each other while engaging in their studies and in deep thought. Finally, daily office hours have been set for the teaching staff at the residential college facility. The Graduate School of Advanced Integrated Studies in Human Survivability is a place that acts as an incubator, where young people from varied backgrounds and with diverse aspirations for the future can gather, take part in dialog and discussions also involving the teaching staff, foster mutual relationships of trust as friends and help each other to train.

The GSAIS theory of leadership

In the above, we have explained that the Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) has set the educational goal of developing leaders, with details of that educational goal, the curriculum and the educational environment. Here, we would like to introduce the GSAIS theory of leadership as summarized in Table 0.1. Attempts to develop specialists, practitioners and leaders who, though based in knowledge of specialized fields, can analyze and evaluate problems comprehensively by breaking through fragmentation or specialization, and who can make and implement practical proposals transcending individual fields to solve those problems, have started to appear mainly in western countries. 'Leadership' is also gathering attention academically. Until now, 'leadership' has mainly been a concern of companies training their employees through OJT (on the job training). In recent years, however, management and leadership have been discussed in business schools and other graduate institutes for specialized occupations, while efforts to develop global human resources and theories on leadership have also been thriving in domestic and overseas universities. A systematic pedagogy has been set in motion to this end.

At GSAIS, too, the necessary characteristics and mindset have been implicitly incorporated in subjects such as *Jukugi*, and a curriculum has been developed around these attributes. Skills with a direct bearing on leadership have been incorporated in overseas personnel training, internships and other practical curricula. The three lessons learnt in HSS – leadership mindset, leadership skills

Table 0.1: GSAIS theory of leadership (relationship between component elements and subjects)

1.	Fostering the leadership mindset (human power)
	→ (<i>Jukugi</i>)
	<ul style="list-style-type: none"> ● Sense of mission, belief, spirit of challenge ● Ability to set out a vision and goals: Ability to take a macro-perspective, foresight ● Mindset: Ability to think flexibly, logically, critically
2.	Acquisition of leadership skills (practical ability, ability to break through the field)
	→ Domestic and overseas internships, overseas personnel training, PBR, foreign language education, management theory
	<ul style="list-style-type: none"> ● Social attributes: Communication ability ● International attributes: Understanding other cultures and diversity, language ability ● Ability to motivate, ability to involve others, ability to mobilize others (teamwork, facilitation, coaching) ● Management ability
3.	Mastery of Human Survivability Studies
	→ Special research seminars/special research projects, specialized core/specialized subjects, <i>Hasshi</i>
	<ul style="list-style-type: none"> ● Solid specialized attributes ● Wide-ranging knowledge of liberal arts

and the system of academic disciplines connected with these – are the core of GSAIS leadership theory. Leadership mindset means the mental attitude, way of thinking and spirit that a leader needs to have. It is a method of cultivating a sense of mission, belief and the spirit of challenge, training the ability to take a macro-perspective and the foresight needed to map out a vision and set goals and honing a flexible and logical way of thinking; it is a ‘measure for developing human appeal’. On the other hand, leadership skills could also be called ‘transferable skills’. In order to hone leadership skills, we need to deepen students’ knowledge of other people, other cultures and diversity, and acquire international and social qualities, penetrative ability and practical ability. Communication and management are skills needed to lead a team in the field, motivate people and collaborate. With this mindset and these skills, leaders understand things more deeply, think subjectively, understand the viewpoints of other parties (i.e. stakeholders) and convey their own ideas in ways that are easy for others to understand. At the same time, they strive for change and creativity together with associates, and generate new value. An ‘indomitable’ spirit is also necessary. Enabling students to acquire a foundation for this ability and confidence is the aim

of HSS. As we have already stated above, teaching this leadership mindset and these leadership skills means equipping students with the rationale and methods for overcoming problems, and the basic research ability and applied ability to explore the practice and application of policies, applied technology and other elements. This is a group of subjects designed to verify the students' own specialized nature and equip them with the ability to respond to the unknown by acquiring broad-ranging knowledge in liberal arts.

This book answers the question of what HSS should do as an academic approach for developing leaders. While this book is only at the stage of a guideline presenting a framework for this effort, we would like to flesh out this framework in future. We see it as an urgent task of higher education in Japan and the world to produce an innovative methodology for solving social issues, develop individuals who can lead practical initiatives and create an environment to facilitate this.