Topic-Setting Program to Advance Cutting-Edge Humanities and Social Sciences Research

(Area Cultivation)

Progress Report

(Summary of Final Report)

[Development of Media and the Structural Transformation of the Public Sphere

in the Risk Society: Theory Construction, Empirical Research and Simulation Analysis

based on Comparative Ethology of Network Model]

Core-Researcher:　Kaoru ENDO

Institution:　Gakushuin University

Academic Unit:　Faculty of Law

Position:　Professor

Research Period：　FY2014 – FY2017

1. Basic information of research project

Research Area	Shifts in social capital accompanying media advances
Project Title	Development of Media and the Structural Transformation of the Public Sphere in the Risk Society: Theory Construction, Empirical Research and Simulation Analysis based on Comparative Ethology of Network Model
Institution	Gakushuin University
Core-Researcher (Name, Academic Unit & Position)	Kaoru ENDO (Faculty of Law, Professor)
Project Period	FY2014- FY2017

Appropriations Plan	FY2014	9,400,000JPY
	FY2015	10,000,000JPY
	FY2016	10,000,000JPY
	FY2017	600,000JPY

2. Purpose of research

With respect to contemporary "social risk" typified by East Japan great earthquake and nuclear accident, the way of social capital (social capital / social bond) mediated by computer media (or social media) , and reconstruction of "publicness" are questioned. Also, today's multilayered media environment regulates our social behavior as the second nature of human-machine integration. In view of this situation, this research aims to elucidate the alteration of social capital in modern multilayered media environments and to clarify the conditions for sound formation of "social capital" under the philosophy of "public nature".

From a sociological point of view, by fundamentally rethinking the concepts of "social capital" and "public nature" and rebuilding it, social media, mass media and face-to-face media form a multilayered information environment, we consider the contemporary society that is being "an intermediated society" and form the research team of multidisciplinary collaboration with the viewpoint of the possibility and the problem situation of social order there from the viewpoint of "structural transformation of public nature" We aimed to positively incorporate new techniques such as simulation and big data analysis as well as normative theoretical research and social survey and statistical analysis, and to conduct research. The adoption of such multidisciplinary collaborative research system and research techniques that make use of theories, demonstration and simulation is also called the frontier of problem-solving research projects required for academism in the future, It also has important significance as information transmission.

From an economic point of view, analysis on "physical capital" and "human capital" is based on a mathematical model, but there is little mathematical analysis on "social capital". The purpose of this research is to reform innovation of information technology such as newspaper, television, Internet, SNS, how to transform social capital in the

sense of organization formed on the network, how to organize in human society to analyze comprehensively by theoretical, demonstration, and simulation methods, and to elucidate its mechanism systematically. It is a mathematical model of a social organization that takes cooperative action by a common feature such as "information network / transportation network" and common characteristic such as "norm" and "trust", and it works from the front in a range where demonstration and simulation analysis are possible Yes, it is considered to be meaningful.

In terms of informatics, we focused on social media's functions as a social network and a function as an information transmission tool, and examined how to use social media as an efficient and accurate information transmission tool.

As fake news became a problem in the 2016 US presidential election, the current social media has enough information but the quality is not guaranteed enough. Information provision by existing media is ensured to some extent to ensure the quality of information by backing up survey etc. On the other hand, in social media, everyone is an information recipient and can become an information provider, so it is possible to easily provide and spread information that has not been thoroughly examined.

Furthermore, it became clear that a certain cost is required because people who once touched information such as hoax or false news accepts correct information due to influences such as "confirmation bias", "selective touch", "spiral of silence" etc. which are well known in social psychology.

In this way, we observed and analyzed various phenomena such as mutual formation process and co-evolution process between social relationship and culture, network public opinion based on social relations, cyber cascade, flames, and fashion etc. obtained directly from the vast social data. In terms of cultural aspects, in particular, unique cultural phenomena collectively known as "COOL JAPAN" are observed in Japan, but of course it is expected that the research can be the most original research in Japan. About this phenomenon, various theories based on sociology and social psychology were reconstructed from engineering aspects such as artificial intelligence, data engineering, complex network science, and approached the generation of a theoretical model. Furthermore, by simulation based on the obtained theoretical model, we approached a solution to a universal question about something better social relationship.

3. Outline of research (Including study member)

In order to think about the response to the risk problem in the present age it is inevitable to think about the understanding of social relationship between people and society (social capital) and reconstruction of "public sphere" according to it. Especially today, the development of computer media (or social media) has also made a major change in the way social capital exists. In this research, we set up a multi-disciplinary

collaborative research team with a viewpoint of the possibility and problems of the order formation of modern society and develop new techniques such as simulation and big data analysis in order to study "structural transformation of public sphere".

For the sake of convenience, this research conducts research with three subgroups, but these three groups of studies are mutually complementary and generate synergy effects both during the research and in the final outcome.

The sociology group, in particular, reexamines and reconstructs the concepts of "social capital" and "public sphere", and also describes the modern media environment where social media and existing media interact in a multilayered manner as "intermedia society". We have analyzed the changes of social communications, social capital and public spheres over many years using various social consciousness survey data and press data accumulated over the years, social media data, etc. We developed the result with a theoretical model, connected it with the preceding social theory, and made it a simulation model to enable dynamic prediction visualized. We invited famous lecturers abroad to hold a research group and advocated a dynamic model linking more comprehensive and innovative micro-macros.

The Economics Group considers human society as a collection of organizations formed on the information network and the transport (and distribution) network, and analyzes how innovation in information technology affects organization formation and mobilization. We analyze comprehensively through mathematical modeling, demonstration and simulation by collaborative research by experts in economics, political science, and informatics on how the development of the media affects organization formation and mobilization, and the mechanism eluscidate systematically. Theoretical research will be conducted in cooperation with overseas researchers. Empirical research is planned to verify the implication of the theoretical model by developing and utilizing huge data accumulated so far. Regarding the simulation, we set the parameters of the theoretical model to data and consistency, and predicted the effects of further development of the media in the future.

In the information science group, the research topic is "Analysis of social relationship data, construction of social capital generation model", "Data analysis of information spreading and construction of model of information behavior change", incorporating knowledge of information engineering, social media , we aim to understand the nature of social media by using data mining and agent based modeling. Specifically, from the two perspectives of social graphs and interest graphs, we model the mechanism by which social relationships are generated. In addition, based on the knowledge obtained from the data analysis, we constructed a model that expresses the relationship between social relations and information diffusion and clarified the structure of social relations that can accept appropriate information.

The methodology used in this project resonates with a new field of "computational social science" which is now drawing attention in the world. So, we invited Professor Helbing,

Professor Macy and Professor Pedestrome who are world leaders in this field, and held three public symposiums and English workshops. This attempt attracted wide attention from researchers in related fields and many researchers gathered. In addition, reports were frequently made at international conferences.

As a final report, Springer published an English article collection "Reconstruction of Public Sphere in the Socially Mediated Age".

In addition, the sociology group also published the paper collection "Publicity of Inter Media Society" from the University of Tokyo Press.

In these papers collection, not only analysis on the East Japan great earthquake and the dynamics of social media in Japan, but also the division of society currently occurring on the global scale and the accompanying extreme public opinion formation process (Brexit, Trump phenomenon etc.) are contained.

These results can be said to be advanced analysis on a global scale.

Research Project Leader/ Group Leader/ Group member	Name	Affiliated institution / department / position	Research Theme
Research Project Leader and Group Leader	Endo, Kaoru	Gakushuin University, Faculty of Law, Professor	Supervision of research Distribution of social information and Public opinion formation
Group member	Sato, Yoshimichi	Tohoku University, Department of literature, Professor	Social change
Group member	Sudo, Naoki	Gakushuin University, Faculty of Law, Professor	Rational choice
Group Leader	Kamihigashi, Takashi	Kobe University, Research Institute for Economics and Business Administration, Professor	Economic change
Group member	Shinada, Yutaka	Kobe University, Graduate School of Law, Professor	Political consciousness
Group member	Kaihara, Toshiya	Kobe University, Graduate School of System Informatics, Professor	System information

Group Leader	Toriumi, Fujio	University of Tokyo, School of Engineering, Associate professor	Burst phenomenon
Group member	Kurihara, Satoshi	University of Electro-Communications, Graduate School of Information Systems, Professor	Control of information spreading
Group member	Sakaki, Takeshi	University of Tokyo, School of Engineering, Researcher	Burst phenomenon

4. Research results and outcomes produced

From This project, the following results were expected:

a. Based on a review of the concept of contemporary social capital and publicity, we will reveal the dynamic structure of the information environment (intermediation).

b. Then, we will clarify today's social capital formation process.

c. Sharing and securing the norms (diversity, equality, etc.) desired in today's formation of social capital.

d. By focusing on the social capital that is built on the social media, we establish a method to reduce the social risks from the aspects of information, and clarify the conditions for reconstructing the new public sphere in the modern intermediated society facing to the various "social risks".

e. From the deepest points, we will contribute to the realization of a democratic society with resilient, ensuring the reduction of social risk of the present day.

f. When society faces conflicts of interests between individuals and organizations, we clarified what kind of organization is formed, what personal behaviors and choices, and how media is developed.

g. We modeled the behavior of people under risk circumstances. Upon modeling, it is expected that it will be possible to construct models with higher accuracy and applicability to reality by combining data mining as information science technology, social consciousness survey, indicators such as economic data and knowledge of social psychology.

h. In this research process, researchers from sociological, economics, political science and information science organically collaborated from a comprehensive viewpoint. In particular, since there is no precedent study in the analysis of alteration of social capital using the mathematical theory and simulation from the viewpoint of network theory, this research was triggered, the road of mathematical analysis opened and the future cross-cutting is expected

to contribute greatly to the promotion of collaborative research in general.

Moreover, by disseminating the obtained universally useful results (theoretical and realistic proposals of publicity restructuring to confront social risks, methodologies of new sciences fusion and multi-disciplinary collaboration) to the global world . It was also expected to raise the significance and value of existence of Japanese research in this field in international academic society.

Through the research period of 3 years, these research achievements are a tremendous amount of academic papers, works, lectures, academic reports that analyzes urgent problems such as social media development and social riskization.

By these means, we clarified how social media can respond to the risk society, the dynamism of hoax diffusion on social media, the burst phenomenon on social media (such as inflammation) in the society after the Great East Japan Earthquake, by methodology of computational social science. It is thought that it will greatly contribute to future social design.

However, in addition to that, the "Computational Social Sciences", which is the state-of-the-art methodology for contemporary literary fusion, which attracted attention in this project, has attracted a great deal of international attention, and a wide range of excellent researchers have participated in our symposium. In response to this enthusiasm, in February 2017 the "Computational Social Science Study Group" (http://css-japan.com) was founded on the basis of this project. Kaoru Endo, chief research representative of this project, and group leader Fujio Toriumi serve as secretary, and all members have an important role.

As a result, from Japan, the "computational social science" was excavated globally as an academic movement, and deepened theoretically and practically with respect to the central issue of this project "social media and public sphere in risk society". We believe that the discussion has expanded and the foundation for the necessary social implementation has been created.

【publication of research results】
○Paper（Total 47）Including two peer-reviewed papers and seven international coauthored paper
①Endo, Kaoru. 2018. "Public Sphere and Social Capital in the Intermediated Society", Endo, Kaoru. ed. 2018. Social Media and the Public Sphere: Social Capital in the Risk Society. University of Tokyo Press. p.1-18. In Japanese.
②Endo, Kaoru, 2018, 「Post-Truth Politics and Social Capital in the Intermediated Society」Endo, Kaoru. ed. 2018. Social Media and the Public Sphere: Social Capital in the Risk Society. University of Tokyo Press. p.19-46. In Japanese.
③Endo, Kaoru, 2018, "Three-way "Justice": Anti-New Liberalism in Trump phenomenon", Endo, Kaoru. ed. 2018. Social Media and the Public Sphere: Social Capital in the Risk Society. University of Tokyo Press. p.151-78. In Japanese.
④Endo, Kaoru, 2018, "Playing a Political Hero: Trump's pro wrestling fair", Endo, Kaoru. ed. 2018. Social Media and the Public Sphere: Social Capital in the Risk Society. University of Tokyo Press. p.179-204. In Japanese.

⑤Endo, Kaoru, 2018, "Fake News in Post-Truth Age", Endo, Kaoru. ed. 2018. Social Media and the Public Sphere: Social Capital in the Risk Society. University of Tokyo Press. p.205-36. In Japanese.

⑥Endo, Kaoru, 2017, " Public Sphere and Social Capital in the Age of Intermediality: Approach from Computational Social Science.", in Kaoru Endo, Satoshi Kurihara, Takashi Kamihigashi, and Fujio Toriumi (eds.), Reconstruction of the Public Sphere in the Socially Mediated Age, Springer, 1-8, 2017.

⑦Endo, Kaoru, 2017, " What Is Public Opinion? In the Age of Comlexedly-Mediated Democracy and Scandal Politics.", in Kaoru Endo, Satoshi Kurihara, Takashi Kamihigashi, and Fujio Toriumi (eds.), Reconstruction of the Public Sphere in the Socially Mediated Age, Springer, 9-36, 2017.

⑧Endo, Kaoru, 2017, " Confrontation among Justices", Trends in the Science, vol.21 No.1. p.10-5. In Japanese.

⑨Endo, Kaoru, 2017, "Social Capital in the Post-Disaster Society – Population Outflow and Isolated Poor ", Oukan Vol. 11, No. 2, October 2017. p.90-9（Peer reviewed）In Japanese.

⑩ Endo, Kaoru, 2017 , "Simulating Sustainable Societies", TRAFST ed. Social Simulation: Visualizing the World, Tokyo Denki University Press. p.1-15. In Japanese.

⑪Endo, Kaoru, 2017, "Trump Phenomenon and Post-Truth Politics", Gakushuin Review of Law and Politics, Vol.52 No.1: 203-234. In Japanese.

⑫ Endo, Kaoru, 2016, "Significance of Social System Theory in Japan", Endo, Kaoru, Sato, Yoshimichi and Imada, Takatoshi. ed. 2016. Revival of Social Theory: Beyond social system theory and recursive self organization. Minelva-Shobo.p.331-352. In Japanese.

⑬Endo, Kaoru, 2016, "Expansion and Convergence of Inter-media Movements: Case study of 'I failed the nursery school' Movement", Gakushuin Review of Law and Politics, Vol.52 No.1:85-110. In Japanese.

⑭Endo, Kaoru, 2016, "What is Public Opinion?: In the Age of Comlexedly-Mediated Democracy and Scandal Politics ", **Socio-Informatics, Vol.5 No.1**:1-17, Peer reviewed. In Japanese.

⑮ Endo, Kaoru , 2016," Philosophy of "Kawaii" : Historical Perspective and Contemporary Significance", Information Processing, Vol.57 No.2: 118-121. In Japanese.

⑯Endo, Kaoru, 2015, "The View of Life and Death in the Post-311 Japan", Gakushuin Review of Law and Politics, Vol.51 No.1: 155-166. In Japanese.

⑰Endo, Kaoru, 2015, "The Anxiety about Work Environment and Terms of Employment", Trends in the Science, Vol.20 No.9: 8-13. In Japanese.

⑱Endo, Kaoru, 2015, "Politics in the Post-311 Japan",, Gakushuin Review of Law and Politics, Vol.50 No.2: 121-138. In Japanese.

⑲Endo, Kaoru, 2015, "Youth in the Society after the Great East Japan Earthquake:
Aging, Migration and 'the Isolated Poor'", Trends in the Science, Vol.20 No.1: 12-19. In Japanese.

⑳ Endo, Kaoru , 2015,"World Brain In the Age of Digital Reproduction", Nagao, Makoto ed. Reproduced Media: Transforming Copy Rights, KADOKAWA: 255-290. In Japanese.

㉑Sato, Yoshimichi, 2017, "Does Agent-based Modeling Flourish in Sociology? Mind the Gap between Social Theory and Agent-based Models." Yoshimichi Sato, in Kaoru Endo, Satoshi Kurihara, Takashi Kamihigashi, and Fujio Toriumi (eds.),
Reconstruction of the Public Sphere in the Socially Mediated Age, Springer, 37-47, 2017.

㉒Sato, Yoshimichi, 2016, "Institutions and Actors in the Creation of Social Inequality: A Rational Choice Approach to Social Inequality." Pp. 29-36 in Social Inequality in Post-Growth Japan: Transformation during Economic and Demographic Stagnation, edited by Chiavacci, David and Carola Hommerich. Abingdon, Oxon: Routledge.

㉓Sato, Yoshimichi, 2016, "Inequality in Educational Returns in Japan," Yoshimichi Sato and Shin Arita, in Fabrizio Bernardi and Gabriele Ballarino (eds.), Education, Occupation and Social Origin: A Comparative Analysis of the Transmission of Socio-Economic Inequalities, Edward Elgar, 94-113,

㉔ Sato, Yoshimichi, 2016, "Toward Mathematical Models of Social Inequality: Focusing on Mathematical Models with Special Attention to Micro-Macro Linkages," *Sociological Theory and Methods*, 31(2): 277-290. In Japanese.

㉕Sato, Yoshimichi, 2016, "Self-organization and Rational Choice," Endo, Kaoru, Sato, Yoshimichi and Imada, Takatoshi. ed. 2016. Revival of Social Theory: Beyond social system theory and recursive self organization. Minelva-Shobo. P.243-265. In Japanese.

㉖Sudo, Naoki. 2017. Social Networks of Trust Based on Social Values: An Explanation of Crvilinear Relationships between Generalized Trust and Democracy. Journal of Mathematical Sociology 41(4): 193-219.

㉗Sudo, Naoki. " The Effects of Women's Labor Force Participation: An Explanation of Changes in Household Income Inequality, " Social Forces 95(4): 1427-1450, Oxford Univeristy Press, doi:10.1093/sf/sox011, 2017 年 6 月 (Accepted: January 2017).

㉘Sudo, Naoki. 2016. Exploring Complex Social Mechanism. *Sociological Theory and Methods.* 31(1):2-19 (Published: 3/31/2016). In Japanese.

㉙Sudo, Naoki. 2016. What is the Difference between Trust in Persons and Trust in Systems? *The Journal of Studies in Contemporary Sociological Theory.* 10:17-30. (Published: 3/30/2016). In Japanese.

㉚Shin-ichi Kumamoto and Takashi Kamihigashi, "Power Laws in Stochastic Processes for Social Phenomena: An Introductory Review," Frontiers in Physics, 15 March 2018, DOI: 10.3389/fphy.2018.00020.

㉛Carmen Camacho, Takashi Kamihigashi, Cagri Saglam, "Robust Comparative Statics for Non-monotone Shocks in Large Aggregative Games," Journal of Economic Theory 174, 288-299, March 2018.

㉜Takashi Kamihigashi, "41 Counterexamples to Property (B) of the Discrete Time Bomber Problem," Annals of Operations Research 248(1) 579-588, January 2017.

㉝Takashi Kamihigashi and Masayuki Yao, "Infinite-Horizon Deterministic Dynamic Programming in Discrete Time: A Monotone Convergence Principle and a Penalty Method," Optimization 65(10), 1899-1908, June 2016.

㉞Takashi Kamihigashi and John Stachurski, "Seeking Ergodicity in Dynamic Economies," Journal of Economic Theory 163, 900-924, May 2016.

㉟Takashi Kamihigashi and John Stachurski, "Perfect Simulation for Models of Industry Dynamics," Journal of Mathematical Economics 56, 9-14, January 2015.

㊱ Takashi Kamihigashi and John Stachurski, "Stochastic Stability in Monotone Economies,"

Theoretical Economics 9(2), 383-407, May 2014.

㊲Takashi Kamihigashi, Kazuhiko Seki, and Masahiko Shibamoto, "Measuring Social Change Using Text Data: A Simple Distributional Approach," in Reconstruction of the Public Sphere in the Socially Mediated Age, edited by Kaoru Endo, Prof. Satoshi Kurihara, Takashi Kamihigashi, Fujio Toriumi, Springer, pp. 139-163, November 2017.

㊳Giacomo Liotta, Giuseppe Stecca, Toshiya Kaihara, Optimisation of freight flows and sourcing in sustainable production and transportation networks, International Journal of Production Economics, Vol. 164, pp. 351-365, 2015.

㊴Fang Yu, Toshiya Kaihara, Nobutada Fujii, Changyin, Sun; Wankou Yang, "A multi-attribute multi-item negotiation mechanism of supply chain networks between buyers and sellers", International Journal of Production Research, 2015.

㊵Giovanni Felici, Toshiya Kaihara, Giacomo Liotta, Giuseppe Stecca, Robust Optimization Theory for CO2 Emission Control in Collaborative Supply Chains,Risks and Resilience of Collaborative networks, IFIP AICT, Vol.463, pp.547-556, 2015.

㊶Giacomo Liotta, Toshiya Kaihara, Giuseppe Stecca, Optimization and Simulation of Collaborative Networks for Sustainable Production and Transportation, IEEE Transactions on Industrial Informatics, Vol.12, No.1, pp.417-424, 2016.

㊷Giuseppe Stecca, Ilaria Baffo, Toshiya Kaihara, Design and operation of strategic inventory control system for drug delivery in healthcare industry, International Journal of Production Research,Vol.49, Issue12, pp.904-909, 2016.

㊸Toshiya Kaihara, Yoshiteru Katsumura, Yuuichi Suginishi, Botond Kadar, Simulation model study for manufacturing effectiveness evaluation in crowdsourced manufacturing, CIRP Annals - Manufacturing Technology, Vol.66, No.1, PP.445-448, 2017.

㊹Shinada, Yutaka. 2018. "About the voting rate of 18 years old and 19 years old", Local Autonomy, No.843, p.2-31.

㊺Fujio Toriumi, Takeshi Sakaki, Topic Analysis for Burst Phenomena, IPSJ Journal, Vol.58, No.6, pp.1287 - 1299(2017) . Peer reviewed. In Japanese.

㊻Fujio Toriumi, Yu Matsuzawa, Toyotaro Suzumura, Analysis of Vocal Minority Phenomena Based on Opinion Statement Model, IPSJ Journal, Vol.58, No.6, pp.1287 - 1299(2017) . Peer reviewed. In Japanese.

㊼Fujio Toriumi and Seigo Baba Real-time Tweet Classification in Disaster Situation WWW'16 Companion Proceedings of the 25th International Conference Companion on World Wide Web pp.117-118(04/2016)

○Books（Total 7）
①Endo, Kaoru.When a Robot Comes to your Home: The Future of Human and AI, Iwanami Shoten, Publishers. 2018. 173 pages. In Japanese.

②Endo, Kaoru. ed. 2018. Social Media and the Public Sphere: Social Capital in the Risk Society. University of Tokyo Press. 260 pages. In Japanese.

③K, Endo, K. Kurihara, T. Kamihigashi and F.Toriumi (eds). Reconstruction of the Public Sphere in

the Socially Mediated Age. 2017 .Springer.　　200 pages.

④Endo, Kaoru, Sato, Yoshimichi and Imada, Takatoshi. ed. 2016. Revival of Social Theory: Beyond social system theory and recursive self organization. Minelva-Shobo. 355 pages. In Japanese.

⑤Endo, Kaoru. ed. 2016. Social Media and the Public Opinion Formation: Intermedia shakes the world. Tokyo Denki University Press. 335 pages. In Japanese.

⑥Sudo, Naoki. ed. 2018. *Self-images in the Gap Society*. Tokyo: Keisoshobo. In Japanese.

⑦Sudo, Naoki. ed. 2015. *New Dimensions of Social Stratification and Consciousness.* Tokyo: Yuhikaku. In Japanese.

○Presentation（Total 49）Including 20 invited lectures and 14 presentations at international conferences.

①Endo, Kaoru. Invited. "Simulating Sustainable Societies", 8th Oukan Conference Organized Session : 12/2/2017, Ritsumeikan University. In Japanese.

②Endo, Kaoru. Invited. "Thinking about AI and Robots from Japanese Culture〜Beyond-Human？Inter-Human？Or…", Ota-ku District University Course: You and Artificial Intelligence, 10/24/2017, Ota-ku Consumer Center. In Japanese

③Endo, Kaoru. Invited. "Public Sphere and Social Capital in the Intermediated Society", 4th Structural Transformation of the Public Sphere in the Risk Society and Social Capital（Public Symposium), Kobe University, 9/8/2017,　100 participants（including 70 researchers）.

④Endo, Kaoru. Invited." Approach from Computational Social Science", 6/19/2017, Science and Technology Future Strategy Workshop: Information science technology supporting decision making and consensus formation in complex society, 50 participants. In Japanese

④Endo, Kaoru. Invited. Science Café "Co-Evolution of Human and AI", 3/24/2017, Ministry of Education, Culture, Sports, Science and Technology, 30 participants. In Japanese

⑤Endo, Kaoru. Invited. "Looking back, East Japan great earthquake and media - <Disaster victims> and the press in the documentary program", 48th Media and Language Seminar, 3/17/2017, Gakushuin University, 70 participants.

⑥Endo, Kaoru. Invited. " Community 5.0", 7th Oukan Conference Organized Session : 11/20/2016, Keiogijuku University. 50 participants. In Japanese.

⑦Endo, Kaoru. Invited. "Risk and Social Capital", 2nd Structural Transformation of the Public Sphere in the Risk Society and Social Capital（Public Symposium), Gakushuin University, 7/2/2016. In Japanese

⑧Endo, Kaoru. Invited. 「Hidden Relationship of Kawaii Culture and Technology: Cat Boom in Edo Era", **SIG kawaii, Japan Society of Kansei Engineering** Symposiu, 5/21/2016, Shibaura Institute of Technology. In Japanese

⑨Endo, Kaoru. Invited. 「Structural Transformation of Public Sphere in the Risk Society", 1st Structural Transformation of the Public Sphere in the Risk Society and Social Capital（Public Symposium), University of Tokyo,　2/27/2016,　100 participants（including 100 researchers）. In Japanese

⑩Endo, Kaoru. Invited. 「Is Miku Hatsune "Angelus novus"? : Music Culture in the Age of Digital

Reproduction", 1/29/2016, Sizuoka University, 150 participants. In Japanese

⑪Endo, Kaoru. Invited. "Tommorow with Robots", 6th Oukan Conference Organized Session : 12/6/2015, Nagoya Institute of Technology. 50 participants. In Japanese.

⑫Endo, Kaoru. Invited. 「From Mass to Individual : Video distribution and Big data」(Organized by: Gakushuin University Career Center and Mass communication Ouyukai) 11/21/2015, Gakushuin University, 100 participants. In Japanese

⑬Endo, Kaoru. Invited. "Why does "Kawaii" Attract People Now?: "Unfinished beauty" and Thought of Inclusion in the Global World", **SIG kawaii, Japan Society of Kansei Engineering** 5th Anniversary Symposium, 6/6/2015, Shibaura Institute of Technology, 100 participants . In Japanese

⑭Endo, Kaoru. Invited." Japanese aesthetics and "Kawaii" Culture‐A historical perspective‐", ACHIS 2015　2015.4.19 @COEX in Soeul　50 participants. In Japanese

⑮Endo, Kaoru. Invited. "Human, Robots and Society", Created Partner: You + Robot = Happiness?, Miraikan‐The National Museum of Emerging Science and Innovation, 3/29/2015, 300 participants. In Japanese

⑯Endo, Kaoru. Invited. "Music Culture in the Age of Digital Reproduction", Japanese Association for Studying Popular Music, Key note Speech, Gakushuin University, 12/7/2014, 100 participants. In Japanese

⑰Sato, Yoshimichi, "Does Agent-based Modeling Survive in Sociology? A Theoretical First Step toward "Sociological" Links between Micro and Macro Levels," The Third ISA Forum of Sociology, Vienna, July 10-14, 2016.

⑱Sato, Yoshimichi, "Exploring Moving Mechanism between Forward-looking and Backward-looking Rational Actions: Toward a Meta Rational Choice Theory," The 111th Annual Meeting of American Sociological Association, Seattle, August 20-23, 2016.

⑲Yoshimichi Sato, "Social Capital, Publicness, and Inequality." Tohoku-Stanford Summer School, June 22-26, 2016.

⑳Yoshimichi Sato, "Institutions and Agency in the Creation of Social Inequality." Yoshimichi Sato, Summer 2015 Meeting of ISA RC28, 8/17/2015, 60participants.

㉑Sato, Yoshimichi and Naoki Sudo, Invited, "Analysis of Social Order by Computational Social Science," 1st Structural Transformation of the Public Sphere in the Risk Society and Social Capital (Public Symposium), University of Tokyo, 2/27/2016, 100 participants (including 100 researchers). In Japanese

㉒"Does Agent-based Modeling Survive in Sociology?" Workshop on Advances in Computational Social Sciences, 7/3/2016

㉓Yoshimichi Sato, "Exploring Moving Mechanism between Forward-looking and Backward-looking Rational Actions: Toward a Meta Rational Choice Theory." The 111th Annual Meeting of American Sociological Association, 9/26/2016, 40participants.

㉔Sato, Yoshimichi, "The Relationship between Social Capital and Community from the Viewpoint of Rational Choice Theory," The 89th Annual Meeting of the Japan Sociological Society, October 9, 2016, About 80 participants including scholars and general audience.

㉕Yoshimichi Sato, "Does Agent-based Modeling Flourish in Sociology? Mind the Gap between Social Theory and Agent-based Modeling." The 112th Annual Meeting of American Sociological Association, 8/12/2017, 30 participants.

㉖Sato, Yoshimichi, Invited, "A Preliminary Study on the Emergent Process of Social Capital," The 40th Annual Meeting of the Japan Association for Planning and Public Management, September 8, 2017, About 40 scholars..

㉗Sato, Yoshimichi, "Does a Robot equipped with Artificial Intelligence Become a Family Member?" The 40th Annual Meeting of the Japan Association for Planning and Public Management, September 8, 2017, About 40 scholars.

㉘Sudo, Naoki. 2017. A Role of Sociological Model. *The 90th Annual Meeting of Japanese Sociological Association.* Japanese Sociological Association.　In Japanese.

㉙Sudo, Naoki. 2017. How will Aging Communities Affect Japanese Political Attitudes? *The 64th Conference of the Japanese Association for Mathematical Sociology.*　The Japanese Association for Mathematical Sociology. In Japanese.

㉚Sudo, Naoki. 2017. "Does the Internet Make People Conservative? ", 4th Structural Transformation of the Public Sphere in the Risk Society and Social Capital (Public Symposium), Kobe University, 9/8/2017,　100 participants（including 70 researchers）.In Japanese.

㉛Sudo, Naoki. 2017. Same Opinion, but Different Reasons: Why do Japanese people support market principles? , The 2017 American SociologicalAssociation Annual Meeting, Montreal.

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㊶Fujio Toriumi and Seigo Baba, Real-time Tweet Classification in Disaster Situation, WWW'16 Companion Proceedings of the 25th InternationalConference Companion on World Wide Web pp.117-118(2016/04), 1000 participants.

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㊸Yuka Kamiko, Hirotada Ohashi, Fujio Toriumi, Information Spreading on Twitter Before and During the 2015 Torrential Rain in Eastern Japan, The 30st Annual Conference of the Japanese Society for Artificial Intelligence (2016) in Japanese.

㊹Seigo Baba, et.al., Classification of Information in Disaster by Soft Clustering, The 29th Annual Conference of the Japanese Society for Artificial Intelligence (2015) in Japanese.

㊺Fujio Toriumi, Takeshi Sakaki, Kosuke Shinoda, Kazuhiro Kazama, Satoshi Kurihara, and Itsuki Noda, Classification Method for Shared Information on Twitter Without TextData, Seigo Baba, 2nd International Workshop on Social Web for Disaster Management (swdm2015) WWW 2015 Companion Publication (2015/05), 1000 participants.

㊻Fujio Toriumi, Mitsuo Yoshida and TakeshiSakaki, "Automatic classification of social media information for disaster information support", The 31th Annual Conference of the Japanese Society for Artificial Intelligence (05/2017).

㊼Takeshi Sakaki Fujio Toriumi, Mitsuo Yoshida, Development of Geographic Information Applications based on Information Infrastructure for Disaster Management, The 31st Annual Conference of the Japanese Society for Artificial Intelligence (2017) (05/2017)

㊽Takeshi Sakaki Fujio Toriumi, Mitsuo Yoshida, Development of Geographic Information Applications based on Information Infrastructure for Disaster Management, The 31st Annual Conference of the Japanese Society for Artificial Intelligence, The 30th Annual Conference of the Japanese Society for Artificial Intelligence (2016) in Japanese.

㊾Takeshi Sakaki et.al., Development of Geographic Information Resources toward Information Infrastructure for Disaster Management , The 29st Annual Conference of the Japanese Society for Artificial Intelligence (05/2015) in Japanese.

〇Other（Symposiums organized in this project）(Total 7) Including 4 international research meetings

①1st Structural Transformation of the Public Sphere in the Risk Society and Social Capital (Public Symposium), University of Tokyo, 2/27/2016, 100 participants（including 100 researchers）.

②1st Computational Social Science Workshop, Hotlink Meeting Room, 2/28/2016, 70 participants （including 70 researchers）.

③2nd Structural Transformation of the Public Sphere in the Risk Society and Social Capital（Public Symposium）, Gakushuin University, 7/2/2016, 50 participants（including 50 researchers）.

④2nd Computational Social Science Workshop, Gakushuin University, 7/3/2016, 70 participants（including 70 researchers）.

⑤3rd Structural Transformation of the Public Sphere in the Risk Society and Social Capital（Public Symposium）, Gakushuin University, 11/19/2016, 60 participants（including 60 researchers）.

⑥Computational Social Science Start-Up Workshop, Gakushuin University, 2/27-28/2018, 100 participants（including 100 researchers）.

⑦4th Structural Transformation of the Public Sphere in the Risk Society and Social Capital（Public Symposium）, Kobe University, 9/8/2017, 100 participants（including 70 researchers）.

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