SPARC Japan NewsLetter
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SPARC Japan NewsLetter provides activity and seminar reports. The seminar report includes its outline, program with speakers' introductions and abstracts, panel discussion, attendee feedback, and afterword.

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■ SPARC Japan Activity Reports

SPARC Japan Governing Board

Please see materials of SPARC Japan Governing Board on our website:
http://www.nii.ac.jp/sparc/about/committee/

NII Practical Training at CERN

We have aimed "to promote open access and to encourage further distribution of scholarly information and academic resources, cooperating with domestic and international OA initiatives and organizations on the matters concerned", which is the basic policy in Phase 5 of SPARC Japan. Specifically we concluded the Collaboration Agreement for the development of advanced information services and for the benefit of the Japanese and global High-Energy Physics community with the European Organization for Nuclear Research (CERN) and the High Energy Accelerator Research Organization (KEK). To achieve this purpose, a practical trainee worked at CERN in 2017.

- Keiko Yokoi (the University of Tokyo Library System) worked for data curation of the database INSPIRE of High-Energy Physics (2017/9/30-2017/12/28).
  https://www.nii.ac.jp/hrd/ja/jitsumu/h29/index1.html

SPARC Japan Seminar Report

The 3rd SPARC Japan Seminar 2018

"Beyond Open Science"

Wednesday, February 21, 2018: National Institute of Informatics
12th floor Conference Room (Attendees: 67)

This seminar was planned to clarify the direction of our concrete activities to which we should go forward. It was hopeful that participants discussed the original form of arts and sciences, so that this would be helpful for them to find the main subject for the stakeholders of academic knowledge production and go for the next step according to their own cases.

See the SPARC Japan website for handouts and other details (https://www.nii.ac.jp/sparc/en/event/2017/20180221en.html).

Outline

The Budapest Open Access Initiative in 2002 and the G8 Open Data Charter in 2013 that the former was a bottom-up and self-independent activity of science academies and the latter was a top-down policy statement, were crossing each other but aiming at the common direction and became the turning point to accelerate the implementation of "Open Science".

Nevertheless, even though this direction is on the same way of the digitization over our entire society, we are not clear of whether this means that we are at last realizing the ideal way of activity "science" that human beings have engaged in so far, or that the digitization as it is a change of tool revolutionizes the essence of scientific activities. In fact, together with this digitization, the form of scholarly communication changes so much, and the style of knowledge production and transfer in laboratories, class rooms, and "libraries" is drastically changing as we cannot predict what it will be.

In this changing, to clarify the direction of our concrete activities to which we should go forward, it is hopeful that participants stop for only one day and discuss the original form of arts and sciences, so that this will be helpful for them to find the main subject for the stakeholders of academic knowledge production and go for the next step according to their own cases.

Kei Kurakawa (National Institute of Informatics)
http://researchmap.jp/kurakawa/?lang=english

Presentation Abstracts and Speakers

Really Understanding 'Open Science'-Its Beneficial Potentials, Its Fragility, Its Functional Performance Problems, and How NOT to Try to Fix Them-

Paul A. David (Emeritus Professor of Stanford University)

My presentation advances three connected points about what is properly meant by "Open Science", its potential functionality for sustaining economic growth, the nature and sources of this social system's contemporary disappointing performance, and how we should not undertake to remedy those problems. These understandings, I contend provide a necessary foundation for contemporary discussions and decisions about science and technology policies.

First, "open science" is best understood as multi-dimensional dynamical process involving the behavioral interactions of functionally differentiated sub-communities: educators, theoretical and empirical researchers, readers, authors, reviewers, research funding public institutions and private business organizations, publishers, archivists, a journal and book editors, and referees and reviewers. Each of these sub-communities, local and international as they may be, has an associated normative structure that that is neither externally imposed nor perfectly self-enforcing. Being most universal in its scope, or at least in its international reach, the "open science norms" have become those that are most fully articulated and familiar. Consequently, it is necessary to proceed from a brief review the functional performance implications of adherence to the individual norms, and the interaction consequences of norm-adherence that should be more widely grasped and appreciated.

Second, "open science" processes can be expected to function at the macro-dynamical level so that scientific resources are allocated at the micro-level in a manner that is in accord with its operating norms, and produce allocative effects that are complementary to the beneficial micro-level workings of competitive market-based efficiencies in resource allocation. Were the coupled subsystems not plagued by "negative externalities" that they may generate (such as global warming), their interdependent actions could be relied upon to yield sustainable economic growth. An understanding of this is the foundation upon which science and technology policy strategies and the selection of instrumental tactics should be based.

Third, it is to be expected that, like all human social systems, deviant individual conduct is to be expected where-ever norms have been sharply articulated, and hence in research laboratories and corporate offices. Institutional and organization design failures, similarly, will strain the normative guidelines that leaders of those socio-legal organizational entities promulgate. They therefore call for continuous corrective efforts to counteract costly market failures on the one hand, and, on the other hand, to contain the extent of individual scientific misconduct so that it does not undermine the basis for reciprocal collegial trust, or overwhelm the internal corrective capacity of the subsystem's knowledge-generating and -disseminating institutions. Open science's structural features have evolved historically and the persistence of institutionalize legacies from its past is a potential source of dysfunctional modern outcomes. The later, institutionalized survivals, however, should not be hastily discarded on the dubious grounds that that the successful introduction, and popular acceptance of "free and open source software" — especially in educational and

scientific research activities — has rendered them obsolete and readily replaceable by software-implemented “openness” in all aspects of scientific activity. Understanding the ineluctably human social nature of open science processes, and the limitations of algorithmic information processes quickly dispels the mistaken notion that the vexing performance problems that we encounter in the workings of the open science system are not of a nature that permits them to be readily “fixed” by substituting an integrated array of “open” computer algorithms for communicative, knowledge-sharing human actors.

Profile

Paul Allan David is Professor of Economics and Senior Fellow of the Institute for Economic Policy Research at Stanford University. He is Professor Emeritus of Economics and Economic History in the University of Oxford, Emeritus Fellow of All Souls College, Oxford and currently Senior Fellow of the Oxford Internet Institute. David is the author of more than 150 journal articles and contributions to edited volumes, as well as of the author and editor of several books including Technical Choice, Innovation and Economic Growth (1975) and The Economic Future in Historical Perspective (2003). He was among the pioneering practitioners of the "new economic history," and is known internationally for wide-ranging contributions in the fields of American economic history, economic and historical demography, and the economics of science and technology. Investigation of the conditions that give rise to ‘path dependence’ — the persisting influence of historical events in micro and macro economic phenomena — is a recurring theme in his research. Two main areas of contemporary economic policy research have emerged in his work the past two decades: the evolution of information technology standards and network industries, and the influence of legal institutions and social norms upon the funding and conduct of scientific research in the public sector, and the interactions between that latter and private sector R&D. David currently leads an international research project on the organization, performance and viability of free and open source software.

"Open Science" as Data - Driven Science Ecosystem - From a Viewpoint of Japan, and with Past Community Practices

Yasuhiro Murayama

(Natl. Inst. of Info. and Communications Technology (NICT) / ICSU-World Data System)

Today "Open Science" is often discussed in context of digitization of research data ecocycle and research processes, and publication/sharing and dissemination of research outputs, especially in the light of international high-level science policy setting argument. The expected global research data infrastructure and research workflow on it will be designed. Important factors include new and advanced knowledge, technology and tools of ICT infrastructure, as well as a design concept for the upper application layer which can be derived from past experiences of the research community's best practices of research data sharing and research performance in the era before the dawn of digitization.

Profile

Dr. Yasuhiro Murayama is a Research Executive Director of Strategic Program Office at National Institute of Information and Communications Technology (NICT) of Japan, Member of Science Council of Japan, and also serving as ex officio of ICSU-World Data System (WDS) Scientific Committee, Antarctic Observation Deliberation Committee at National Institute of Polar Research, G7 Open Science Working Group

as endorsed by G7 Science Ministers' Meeting May 2016. Also he served as a Visiting Professor at Research Institute of Sustainable Humanosphere of Kyoto University in 2013-2014, Board member of Japan Geoscience Union (2013-2014), member of Expert Panel of Open Science Promotion at Cabinet Office of Japan 2014-2015, OECD/GSF-WDS Working Group of International Coordination of Data Infrastructures for Open Science (2016-2017), and High Level Expert Group of European Open Science Cloud of European Commission (2015-2017). He was awarded by Japan's Minister of Education, Culture, Sports, Science and Technology in 2007. Dr. Murayama received his Ph.D. from Kyoto University in 1993.

Enabling Open Research

Heather Joseph (SPARC North America)

Globally, funders are placing a growing emphasis on opening up many aspects of the research process - from requiring open access to articles and data sets, to encouraging use of preprints, to actively exploring open peer review - citing a host of benefits that such openness enables. The increasing adoption of polices supporting these open behaviors has presented a variety of new complexities to all stakeholders in the research enterprise, from individual researchers to research institutions as a whole. This talk will explore both the challenges and opportunities that the movement towards a more Open research enterprise presents, and suggest strategies for accelerating and smoothing the transition process.

Profile

Heather Joseph has served as SPARC's Executive Director since 2005. She has focused SPARC's efforts on supporting new models for the open sharing of digital articles, data and educational resources. Under her stewardship, SPARC has become widely recognized as the leading international force advocating for effective open access policies and practices. Based in Washington, D.C., Ms. Joseph regularly serves as an advisor to U.S. policy makers on issues relating to open policy. As a member of the U.S Department of Commerce Data Advisory Council, she is tasked with providing input to the U.S. Secretary of Commerce on open data policies. She has served in similar roles for the U.S. National Institutes of Health, the 2016 Presidential Transition Team for Open Data, and the U.S. National Academy of Science.

Research Lifecycle and the Support by Academic Libraries and Universities in Digital Era

Keiko Kurata (Faculty of Letters, Keio University)

The Research lifecycle, from searching many information resources, collecting and analyzing research data to preparation of research results, have been transited to digital form. Traditionally academic libraries have supported research activity by providing the information resources such as academic journals, academic books, etc. However, the progress of electronic journals and open access has begun to transform this role. In addition, university have been forced to reconsider their role for supporting research activity with that national and international environment for open science movement have promoted. This presentation will examine how academic libraries and universities can support researchers in terms of research lifecycle in digital era.

Profile

In 1987 she finished graduate school of library and information science at Keio University. In 1988 she served as a lecturer at faculty of letters, Keio University, associate professor in 1993, and professor in 2001. Her research interest is scholarly communication, especially digitization of information media, open access, research data. She is a member of the SPARC Japan Governing Board.

Ideal Scholarly Communication Environment Provided by University Libraries in the Digital Age

Midori Ichiko (Mita Media Center, Keio University)

University libraries in Japan have supported researchers mainly by the collection and supply of materials for a long time. As digitalized more, the information environment of researchers has been changed on a large scale, and there have been changes in the work of librarians and their behaviors toward the research support. However, we cannot say that the libraries support “open science”. This talk discusses the reality of libraries, researchers, and publishers from my experiences and considers a direction where the university libraries in Japan could go ahead.

Profile

Midori Ichiko is Administrative Director of the Mita Media Center, Keio University. She is a member of the Steering Committee of the Japan Alliance of University Library Consortia for E-Resources (JUSTICE) and the SPARC Japan Governing Board.

Panel Discussion

Summary:

There was an exchange of opinions between speakers and the audience during the panel discussion session. Dr. Kei Kurakawa summarized it as follows:

・ Topic 1 (Knowing about the present situation of science through looking into the past)

We would like to present a framework for discussions about how scientific knowledge should be managed in the context of recent "Open Science" that emerged after researchers had become familiar with the environment of scientific resources, more specifically electronic journals, through overviewing the environment of science in the past as far back as the seventeenth century. In the sense that the information is obtainable via the Internet, there is continuous flow from electronic journals to Open Science. However, researchers are bewildered between the current evaluation standard of research based on priority and the mood to release the data from ongoing processes, which are incompatible with each other. Thus, researchers are inclined to expect that something strange might happen, which cannot be easily determined as continuous or discontinuous.

・ Topic 2 (A knowledge theory in the future)

Let us consider how knowledge ought to be after the age of Open Science, i.e., the current information revolution, with reference to the recent major topics of research data, Open Access, and artificial intelligence. First, regarding research data, their production is supposed to be triggered by the sense of wonder that is the fundamental motivation of science. Nevertheless, the front line of science is far away from that supposition in that research data are prioritized in production according to the degree of its urgency. Next, Open Access, the new form of licensing academic papers enables knowledge to spread, with the support of new services such as machine translations, across language barriers. Then, artificial intelligence that is making a significant social impact has been proven to be useful in research processes, so that we need to certainly utilize artificial intelligence in the future. Simultaneously, we need to care about the role of humans in science and humanity, in education for the next generation in order to prevent unfavorable side effects of artificial intelligence. Now, science is in question how it ought to be expanded while it keeps providing good externalities and researchers' codes of conduct are being maintained in a democratic manner.

Moderator: Yasunori Fukagai

(Graduate School of International Social Sciences, Yokohama National University)

Profile

Yasunori Fukagai is professor at Yokohama National University, International Graduate School of Social Sciences. Following to the academic carrier at other institutions since 1983, he moved to Yokohama National on 2005. During the academic years of 2014 and 2015, he took the role of the director of the University Library of YNU. He works on the fields of history of ideas and social ethics. In August 2014, he organized the thirteenth conference of the International Society for Utilitarian Studies in Yokohama. Adding to the major topics of his research, he recently considers the new possibilities of "analogue humanities" linked with the growing basis of digital humanities. Very recently, he contributed to the Journal of College and University Libraries an article entitled "Media for Knowledge, Institutionalization of Science, and the Sphere of Open Science (1)" written in Japanese (DOI:https://doi.org/10.20722/jcul.1701).
He is a member of the SPARC Japan Governing Board.

Attendee Feedback

(person affiliated with university library)
– I thought that we should take open science into account in our future research. Nonetheless, in universities that do not intend to become research universities, few researchers would see the necessity of open science; hence, open science is not likely to be introduced to those universities unless the universities top decides so.

(person affiliated with business/libraries)
– The discussion at the end was intriguing; I actually thought that it was literally *beyond open science*. I would suggest that it would have been even better if there had been more talk about libraries.

(university researcher)
– It was a fantastic event. As I have been perceiving most of the SPARC Japan events as rather practical than otherwise (while understanding the significance of them being so), I think that now is about the time to have such widely scoped events and discussions focusing on science and knowledge. They fit the needs of the time. It was really interesting this time. [From a live broadcast viewer]

(researcher)
– This seminar made me think that we should think more about how we should consider open science at this time when science is changing from paper-and-publication-oriented to digital-oriented. It can be considered the democratization of science, but I would say that more people should examine what it specifically means. It seems to me that research result management systems can reasonably be made private. I also found that we should take into consideration the fact that researchers' ways of using libraries have been changed drastically by digitization when we think about the role of libraries. There should be differences between the time when information had to exist as physical objects and the time when it can be digitized

Afterword

☺ When the planning of this seminar started in September, a SPARC Japan Governing Board member presented “Open Science” as a highly abstract topic and gave me a list of reference papers. While I read those papers, I was shocked to be lifted on the abstract level of thought from concrete level as of everyday work all at once. In preparing for the event, I bore in mind that we are cooperating with SPARC North America, tried to investigate the topic of Open Science as deeply as possible, and finally selected appropriate speakers. It was the most fulfilling time for me in the three years of working group as well as the most nerve-racking management with the speakers not fixed until the last moment. I would like to express my sincere thanks to those who allowed me to learn through this opportunity and those who worked together with me.

Kei Kurakawa
(National Institute of Informatics)

☺ As the main subjects of discussions have become broader, such as from published articles to research data in general and from open access to open science, it is essential to deal with the question “What is science?” I believe that we would not have been able to tackle that question successfully without the past activities of SPARC Japan. I would like to note that the dialog between the people in charge of this seminar during the course of planning was truly exciting with the knowledge and experience of different individuals creating synergy.

Kazuhiro Hayashi
(National Institute of Science and Technology Policy)

☺ I participated in planning of this seminar and also the second seminar this year. Although a clear answer is yet to be found to the question of how the relation between open science and libraries should be, I think that the relation is essential if library staff want to improve themselves and make serious contributions to academic research. As I was a member of the planning WG of the SPARC Japan Seminars for three years, I hope that this seminar will play a role in better connecting the distribution system of academic information with researchers and librarians.

Shigetoshi Kajiwara
(Muroran Institute of Technology Library)