Topic—Setting Program to Advance Cutting-Edge Humanities and Social Sciences Research (Program Title)

Progress Report (Summary of Final Report)

Theoretical and Practical Study for new RRI Framework: a study series of education, evaluation, and politics

[Project Title]

Core-Researcher: Ryuma Shineha, Ph.D

Institution: Osaka University

Academic Unit: Research Center on Ethical, Legal, and Social Issues.

Position: Associate Professor

Research Period: FY2017 – FY2020
1. Basic information of research project

<table>
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<tr>
<th>Research Area</th>
<th>Theoretical and Practical Study for new RRI Framework: a study series of education, evaluation, and politics</th>
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<td>Institution</td>
<td>Osaka University</td>
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<tr>
<td>Core-Researcher (Name, Academic Unit &amp; Position)</td>
<td>Ryuma Shineha, Research Center on Ethical, Legal, and Social Issues, Associate Professor</td>
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<td>Appropriations Plan (¥)</td>
<td>FY2017: JPY 2,925,000 FY2018: JPY 4,972,500 FY2019: JPY 4,095,000 FY2020: JPY 1,170,000</td>
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2. Purpose of research

Currently, Responsible Research & Innovation (RRI) has played as key concept to think the relationship between science and society. Particularly, in Horizon 2020, RRI was the central concept of “science for/with society” program (von Schomberg 2011; EU Commission 2011; Sutcliffe 2011).

Theoretical discussions on RRI have been sophisticated in the light of four key perspectives of “anticipation”, “reflexivity”, “inclusion”, and “responsiveness” (Hilary 2011; Owen et al. 2012; Owen et al. 2013; Stilgoe et al. 2013). In the course of these discussions, RRI was expressed as “Responsible innovation means taking care of the future through collective stewardship of science and innovation in the present.” (Stilgoe et al. 2013: 1570). However, the difficulties and political issues on RRI have also been pointed out: increase of legitimacy and transparency during decision-making, evaluation system, educational contents, responsibility of knowledge production and future vision, the role of alibi-making on dual-use, and so on (Wickson & Carew 2014; EU Commission 2013, 2015; Stilgoe & Guston 2017).

To overcome these challenges mentioned above, we set three questions below:

A) Analyzing practical challenges of RRI education, and making RRI education tool in the case of Stem Cell Science (SCR) and Regenerative Medicine (RM)
B) Bottom up approach to create evaluation index of RRI, and conduct international comparison or RRI issues
C) Comprehensive analysis of politics of RRI, focusing on dual use issues.

3. Outline of research (Including study member)
Theme (A): RRI education in the case of SCR/RM
Yashiro Yoshimi - a group leader- and other members (Ryuma Shineha, Ekou Yagi, etc) made RRI educational/dialogue tool for SCR/RM, and conducted citizen workshop on “RM and society”. This workshop was conducted, collaborating with minor program of the graduate class of Osaka University (STiPS program). Through the workshop, many interests from the citizen participants were collected. Particularly, “if the RM bring...
long-life to people, this also means that people have to work longer and longer” was an interesting perspective. In other words, if we would like to maximize the social impact of RM, the improve of welfare policies should be though together.

Theme (B): RRI index and international comparison
Bottom-up workshop for considering RRI index was designed and conducted repeatedly and summarized various framings on RRI as evaluation index. Simultaneously, international comparison on RRI issues was conducted, collaborating with Prof. Dr. Martin Bauer of LSE. This sub-theme was conducted mainly by Asako Okamura, Kei Kano, and etc.

Theme (C): Politics and theories of RRI
Content analysis of RRI issues, focusing on websites of 133 biological societies, was conducted. The result were published in Shineha (2020). Also contents concerning SOGI in 243 sociological societies were also analyzed and published (Otuska & Shineha 2019). In addition, discussion on dual use in the national diet was analyzed with quantitative text analysis by Shishin Kawamoto and Mikihito Tanaka. And then, its politics was discussed by Wataru Sano.

Ryuma Shineha also published introductive text book on RRI for experts and graduate level, considering implications
gained through this project and previous studies (Shineha 2020).

Member list of research group

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<tr>
<th>Researchers</th>
<th>Name</th>
<th>Affiliation, position</th>
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<tr>
<td>PI</td>
<td>Ryuma Shineha</td>
<td>Osaka University, Associate Professor.</td>
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<tr>
<td>Group leader</td>
<td>Asako Okamura</td>
<td>GRIPS, Expert.</td>
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<td>Group leader</td>
<td>Yoshimi Yashiro</td>
<td>Kanagawa University of Human Health, Professor</td>
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<td>Member</td>
<td>Wataru Sano</td>
<td>Kyoto University, Professor</td>
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<td>Member</td>
<td>Shishin Kawaoto</td>
<td>Hokkaido University, Associate Professor.</td>
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<tr>
<td>Member</td>
<td>Mikihito Tanaka</td>
<td>Waseda University, Associate Professor.</td>
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<td>Kei Kano</td>
<td>Shiga University, Professor.</td>
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<td>Member</td>
<td>Ekou Yagi</td>
<td>Osaka University, Professor.</td>
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<td>Member</td>
<td>Tatsuo Oyama</td>
<td>GRIPS, Professor Emeritus.</td>
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4. Research results and outcomes produced

The significant achievements of this project were publications of international comparison (Article 6), bottom-up RRI index generation (Article 13), and text book (Book 1). Particularly, the text book “Responsible Governance of Science and Technology” is an important achievement to develop cross-disciplinary collaboration on RRI.

In addition to results above, we gained achievements such as making of RRI education/dialogue tool and gaining know-how of extracting citizen perspectives on RRI (Article 5), collaborative practices with emerging science fields, and analyzing politics and dual use discussions (Article 8), discussions on applications of our result to science education, and so on. However, “making guidelines for RRI on regenerative medicine” was remained as future works.

<Major Papers Published/Accepted>

(1) **Journal article/ Book Chapter**


(2) Book