China National Workshop Report

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Executive summary

1. Most participants considered RRI as a new concept and were not familiar with it. But they all showed great interest in it, and confirmed its usefulness to their institutions and to China's research and innovation in general.
2. All the participants argue that innovation is the key factor driving China's economic and social development. However, they also agree that China has come to a historical stage where the social impact, social acceptance and social responsibility of scientific research and innovation has to be emphasized and considered seriously.
3. As the economic and social development phase of China at this moment is different from that of European countries, the responsibilities of innovation are also different. Therefore, when discussing the responsibility of innovation, the situation and needs of China should be considered within a perspective of historical development.
4. In China, responsibility towards public interest is considered as more important than that towards individual demands, and responsibility towards health and safety issues is considered more important than that towards privacy, open access and gender equality issues.
5. One prominent problem emerging from the workshop is the conflict of responsibilities, such as efficiency vs. safety, security vs. privacy, etc.
6. The participants agreed that the public opinion and attitudes towards innovation is important and need to be considered. The challenge, however, is how to increase the quality of public participation when the public's knowledge and awareness are extremely diversified.

Introduction

Date and Location of Workshop
22 February 2017 at the Chinese Academy of Science and Technology for Development, Beijing

Participant list with affiliations:

PARTICIPANT	AFFILIATION
Mr. Xu	retired officer of division of policy study, general office, MOST http://most.gov.cn/
Mr. Qu	High Tech Research and Development Center (Administrative Center for Basic Research)

	http://www.htrdc.com/kjb/web/cms/www/kjb/index/index.jsp
Ms. Chen	National Center for Nanoscience and Technology http://www.nanoctr.cn/
Mr. Zhang	Chinese Academy of Medical Sciences & Peking Union Medical College http://www.pumc.edu.cn/
Mr. Guo	China Academy of Railway Sciences http://www.rails.com.cn/
Ms. Dong	Lepu Medical Technology (Beijing) Co., Ltd. http://www.lepumedical.com/

Comments on participation based on national structures

The participants are representatives of different actors in the Chinese S&T system:

- The Ministry of Science and Technology (MOST) that plays the main role in national S&T policy making;
- The High Tech Research and Development Center (Administrative Center for Basic Research that is in charge of managing the National Basic Research Program of China, National High-tech R&D Program, and Key Technologies R&D Program;
- The National Center for Nanoscience and Technology (NCNST) of China, a subsidiary non-profit organization of CAS that mainly conduct basic and applied researches in Nanoscience;
- The Chinese Academy of Medical Sciences & Peking Union Medical College that is the top medical school in China, representing both universities and hospitals;
- The China Academy of Railway Sciences (CARS) that has more than 50 years' history and is the only comprehensive research institute with multi-disciplines and multi-specialties in China Railway industry, representing the applied research of technology and innovation; and
- The Lepu Medical Technology (Beijing) Co., Ltd. that specializes in high-tech medical device development, production and sales, as the representative of industry/enterprises.

The missing part of the workshop was NGOs and experts from the National Science Foundation of China (NSFC), the most important funding agency in China, that had a time scheduling conflict.

Understanding of responsibility and RRI

How is responsibility in research and innovation framed by the participants?
In general, responsibility in research and innovation was framed by the participants as serving the society and preventing risks, or in other words, doing good and doing no harm. Social impact, social needs and social acceptance of science, technology and innovation were also mentioned when talking about responsibility.

Is there broad consensus on what is responsibility in science and innovation or did the participants' views differ considerably? How did this differ between different actors? How was responsibility in research and innovation defined? Where there differences between the participants?

There was consensus that the first responsibility of innovation in China is to promote the economic and social development of the country. There was also consensus that China has entered a historical stage where the social risks and consequences of science, technology and innovation cannot be neglected any longer. Most participants agreed that there are different responsibilities for different roles, actors, and in different sectors and stages. One participant distinguished specific responsibilities of government, institutions, researchers, journal editors, media and the public in terms of innovation. Another participant declared that safety has a priority to efficiency and privacy in the field of public transportation innovation. The participant from the industry valued both the responsibility to society/customers/patients but also to the company. She also emphasised the responsibility of inclusive innovation, namely in ensuring common people's access to innovative products that should therefore be affordable to everyone.

Is the term RRI used at all? How? What do people understand by it? When presented to the project's concept of RRI, what were the participants' responses?

The term RRI is not used frequently. In fact, it was quite new to most participants, except for the representatives of the National Center for Nanoscience and Technology and Chinese Academy of Medical Sciences & Peking Union Medical College. However, the term attracted broad interest and also concerns from the participants during the workshop. Some thought that this concept grew from highly developed societies like Europe and the US that have a different level of development. However, they also agreed that this concept should be introduced in China as there is a strong social need for it. One participant highly praised the distinction between research and innovation in the term RRI with the argument that responsibilities of scientific research and of innovation are different and many social impacts and risks should be considered at the stage of innovation rather than research.

Are the ideas and concepts that underpin RRI used by participants? If so, what terms are used? In what way is this context specific? Are any of the keys mentioned as aspects of responsibility?

Speaking of responsibility in the current context, safety and health were mentioned most frequently, whilst the six keys were hardly mentioned. Many speakers pointed out that there are big differences between EU and China in terms of the social circumstances, development stages and cultural characteristics. For example, people in China are more concerned with the responsibility towards public interests rather than individual demands, they are also more concerned with health and safety issues than privacy and personal convenience. Public engagement was seen as needed. However, it should be organized in a well-designed mechanism that should improve rather than hinder rational decision-making. Other keys, including gender equality, science education and open access were considered as less important by the participants.

In what way can the AIRR dimensions help to evaluate how participants are referring to RRI and related concepts, including emerging and broadening notions of responsibility?

AIRR dimensions were mentioned several times in different contexts. One participant mentioned that policy ideas in risk management should transform from a passive ex-post emergency response to an active ex-ante forecasting and prevention. The importance of *anticipating* the social impacts, risk and benefit of innovation had been raised by various participants from different sectors.

Inclusiveness was mentioned by the industry representative, who argued that the self-dependent innovation that might reduce the cost of medical services for lower-income patients was the social responsibility of business companies in developing countries. *Reflexivity* was mentioned as very important in the context of facing conflicts of responsibilities, and also in the context of decision making under public pressure. For example, the innovator has to reflect on what kind of circumstance and to what extent the professional judgement could be or should be compromised with public opinions. A lack of mechanism of *responsiveness* was pointed out by the representative from the funding agency who argued that future research plans should be based on retrospection of social impacts of past developments.

What was identified as significant barriers, drivers and best practices to the further development of responsibility in research and innovation, to RRI (and potentially to the keys)?

Drivers:
Social needs were considered as the main driving force of RRI. With the rapid economic and social development in China, people's needs for a healthier, safer, more convenient life are also increasing, which constitute a huge driving force for responsible research and innovation. Moreover, the government is also actively driving the development of RRI in China, as indicated in *13th Five Year Plan for Science，Technology and Innovation.* Other drivers being mentioned included: researchers' wisdom, knowledge and conscience (when facing the potential risks unaware by regulators and the public, researchers' professional judgement becomes critical to drive responsible research); businessmen's long-term vision (when facing the conflicts between short-term market profit and long-term social benefit, businessmen's vision becomes crucial to drive responsible innovation), and political will.

Barriers:

(1) Conflict of different needs. The practice of RRI may face the dilemma of conflicting needs, such as the conflict between safety needs and efficiency needs.
(2) Lack of knowledge and awareness. The public scientific literacy in China is still quite low. The public lack of scientific knowledge and awareness constitute a barrier for public participation in RRI.
(3) Lack of mechanism of communication and response. Different stakeholders in RRI do not have a mechanism of communicating.
(4) Lack of incentives. For example, the government officials do not have enough incentives to implement RRI as it is not included in the evaluation system.

Best practices:

(1) Governmental regulation regarding R&D of new drugs and vaccine, especially of the 3rd kind of medical technology (high risk, uncertain, involving ethical debate, etc.);
(2) Safety and toxicology research of Nano-particles and products, workplace regulatory guidelines and standards;
(3) Including social scientists in the project reviewing the natural science funding agency;
(4) Enterprises practising RRI by self-dependent innovation that reduce the cost of medical services for lower-income patients.

At what level (state, institutional level, individual researchers) did the participants tend to address responsibility in research and innovation?

All relevant levels were mentioned by participants as important to address responsibility in research and innovation. At the state level, they discussed how to promote RRI in the national research programs, regulations and policies, for example; making national research programs more responsive to social needs and public concerns about risks; improving regulations on potential risks of technical applications and innovation products; and developing well-designed policies on public engagement. At the institutional level, institutional review boards and corporate social responsibility were mentioned as good example of RRI, however it was pointed out that more and better institutional regulations and mechanisms to insure anticipation, reflexivity and inclusiveness are needed. At the individual level, researchers' wisdom, decision makers' professional judgement and laymen's knowledge and awareness all need to be promoted.

Reflections on the workshop process

How easy was it to recruit people?
It was relatively easy to recruit people as long as the time conflict was not a problem. In general, Chinese people are very busy.

How easy was the conversation; was there a degree of conflict to the discussions? To what extent did the facilitator have to steer the discussion with specific questions (in contrast to an easy flow of discussion)?
The conversation ran quite smoothly. The participants were quite frank and open. There was no obvious conflict in the discussion. Participants were actively participating in the discussion, responding to questions, and complementing each other's points of view from different perspectives.

Did the participants seem interested in the project's results?
Yes, most participants were interested and expected to receive the results of this projects. Some comments and suggestions from the feedback sheets are:

- When discussing innovation and responsibility, specific characteristics of different industries and different stages of development should be considered.
- When promoting public engagement, the public should be well-defined and selected according to the topic.
- Taking the RRI PRACTICE analytical framework, the team can take some in-depth analysis in some typical cases of fierce ethical controversy, high risk, and high public concern in China. Based on empirical research in the RRI-PRACTICE project, the team could further develop an analytical framework with Chinese characteristics.