3. France

3.1 General dialogue details France

Dialogue data

Location of the dialogue	Espace des Sciences Pierre-Gilles de Gennes, Paris
Topic	Nano-enabled brain machine interfaces
Date of the dialogue	23 November, 2017
Participants	10 participants (6 men, 4 women): • Researcher and university professor in Nanomedicine • Representative of a CSO devoted to informing the public about risks and benefits of nanotechnology • Participant who participated in the French citizen dialogue (1) • Participant who participated in the French citizen dialogue (2) • High level scientist and policy maker, involved in field of material sciences • Former researcher in biochemistry, consultant for industrial sector • Toxicologist and consultant for industrial sector • Science journalist • Science explainer in educational CSO

Notes from the organizer

A very serious and nice atmosphere characterized the day: it was collaborative but not consensual, and it did not hide the diversity of points of views while also respecting them. The workshop was not without some difficulties: due to last-minute schedule conflicts, representatives of the scientific community with specific expertise on nanotechnology could not be present at the event for its entire duration, and thus were unable to share their fullest expertise. Moreover, we believe that having a “hard” industry representative – people whose business performance would depend on the application of nanotechnology – at the dialogue could have helped the discussions touch upon the truly conflictual issues of RRI in nanotechnology, perhaps by challenging the general underlying consensus shared by all participants on the need to exercise stronger civil society control over the development of technology with high potential impact.

Participants coming from critical citizens’ associations had a negative a priori opinion on the Nano2All project: the website and material consulted prior to the workshop made it appear as a pro-nanotech exercise. Participants expressed doubts on the fact that their critical voice would be heard in Brussels, at the European level. Despite this attitude, they accepted to participate constructively and took the occasion to refine their position and arguments, and finally expressed positive feedback concerning the dialogue event.

3.2 Recommended directions for change

The participants discussed a broad range of themes and suggested quite specific actions that could be undertaken by different actors in the (nanotechnology) research and innovation system to enhance the integration of societal perspectives. Below, the themes have been summarized and clustered in different "directions for change". The original responsible innovation table that was created by participants can be found in Appendix 7.

Promoting a participatory democracy

In the dialogue session, participants referred several times to the term "participatory democracy", pointing at a system in which citizens are heard and can influence the development of research and innovation. Questions were raised on how such a participatory democracy could be shaped in practice. Participants seemed to suggest three main strands of actions that could contribute to establishing a participatory democracy: 1) promoting a scientific culture & critical attitudes among citizens, 2) promoting the involvement of civil society organizations (CSOs) in nano-related topics, and 3) increasing the willingness and ability of industry, researchers and policy-makers to listen to the voice of citizens.

Promoting a scientific culture & critical attitudes among citizens

With respect to the first suggestion, participants stressed the importance of citizens actively searching for opportunities to get involved in discussions and debates about research and innovation. Public events should be organized to provoke encounters between civil society, industry, research, policy-making and other relevant actors. Contact should be ensured between citizens and their elected representatives on nano-related issues. Some questions still remained unanswered. How to get citizens involved in discussions on nanotechnology? Which citizens will feel attracted to come to these events? How to involve groups that do not have a particular interest for research and technology? It was mentioned that citizens should have a critical attitude; they should raise problems, perform their own research on solutions, voice criticism, and question electoral candidates about their plans related to nanotechnology research and innovation. One participant referred to such undertakings as "a citizen duty", comparable to the duty of having to vote. Others called it "politicizing the issues from below". To allow for critical attitudes amongst citizens and to ensure constructive debates, some participants emphasized the importance of an informed citizenry. Citizens should have opportunities to engage in life-long learning and should be able to gather information by themselves, i.e. know how to perform "an investigation". Participants expressed the need for unbiased information that is spread amongst all groups in society.

Promoting the involvement of civil society organizations in nano-related topics

A second direction for change that participants called for was a more prominent role for CSOs. Participants seemed to attribute much value to the work of CSOs as counter-lobbyists, and articulated a desire for more financial support to facilitate the creation of CSOs. Some participants even suggested that the funding of CSOs should be proportional to the potential impact of new technologies (i.e. the number of people that will be affected by a technology). One suggested way to finance this was to transform budgets of ministries (or at EU level) nowadays devoted to communication and outreach into support for CSOs as auxiliaries and consultants for public policies. Participants also talked about what focus CSOs should have. Some mentioned that CSOs should not solely aim attention at bio-ethics or issues related to health and environment, and stressed that much of the current legislation

is outdated and not applicable to the issues we will be facing in 20 years time. For this reason, they argued for CSOs that focus on nano-systems at large. Many of the future issues around nanotechnology will not necessarily be linked to impact or toxicology of specific nanoparticles, but will be related to the broader impacts that developments in the field can have (e.g. questions concerning big data, in the case of nano-enabled brain-machine interfaces). Other participants explained that for CSOs to have constructive impact on research and innovation, they should try to understand the evolution of public opinion and transparently communicate about the actors and powers at play.

Increasing willingness and ability of industry, researchers and policy-makers to listen to the voice of citizens

Participants mentioned that if we want the participatory democracy to work, we need companies, researchers and policy-makers that want to listen to the voice of citizens. It was suggested that companies should put procedures in place to understand public opinion, and not just for marketing and communication strategies. Companies should be willing to participate in debates with citizens and other participatory democracy approaches. One participant also mentioned that researchers need time and money to open up towards society; to communicate about their work and consult people outside academia about research priorities, for example. Participants also stressed the need for public consultation performed by research funders, since they often determine research agendas.

Promoting quality control and transparency of research and innovation processes

The theme of improved quality control and transparency in research and innovation emerged several times in the dialogue discussions. Participants suggested that quality standards and quality control should be imposed on nanotechnology research and innovation processes. It could be something analogous to the ISO system, but adapted to issues related to ethics, health and environmental impacts. Another point that was mentioned was the protection of whistle blowers, both in research and industry. Participants explained that particularly in industry, little protection is currently in place and this should change.

Promoting interdisciplinary work in nanotechnology research

Participants expressed the need for improved integration of ethics in nanotechnology research practices. They suggested that researchers should engage in the development of training modules for secondary schools on ethics and the social impacts of research, and emphasized that university students in the field of nano should receive interdisciplinary education. The ministry plays an important role, and should support changes in this direction. Nanotechnology research should not be practiced in in an isolated manner, but should interact with scholars of humanities, ethics and the social sciences. Several participants stressed that mere collaboration with the humanities and social sciences does not suffice, and pointed out that these scholars should be part of the actual laboratory teams. It was also suggested that more spaces for ethical reflection should be developed within research institutions, either by making use of already existing structures (e.g. ethical committees in hospitals) or by developing new ones. Participants wanted to see the customs of ethical life being institutionalized, also making sure that researchers are not just focusing on how to influence peer scientists, but take into account the perspectives of civil society. Some introduced the idea that representatives of civil society could be part of the call-writing process for publicly funded research, and could participate in the definition, evaluation and implementation of research programmes.

Facilitating the creation of socially responsible start-ups

A final theme that was discussed related strongly to the role of industry and business in making nanotech innovation more responsive towards societal perspectives. The comments of participants seemed to suggest that there was not much confidence in nanotechnology industry and companies. Participants referred to secret developments and non-transparent business models, and the sole strategy to commercialize. On the other hand, participants also recognized that companies exist, which work according to a different business model and take social responsibility very seriously. Several participants suggested that governments should protect and help start-ups and small and medium enterprises, which want to engage in alternative – and more responsible - routes, to compete with big players.