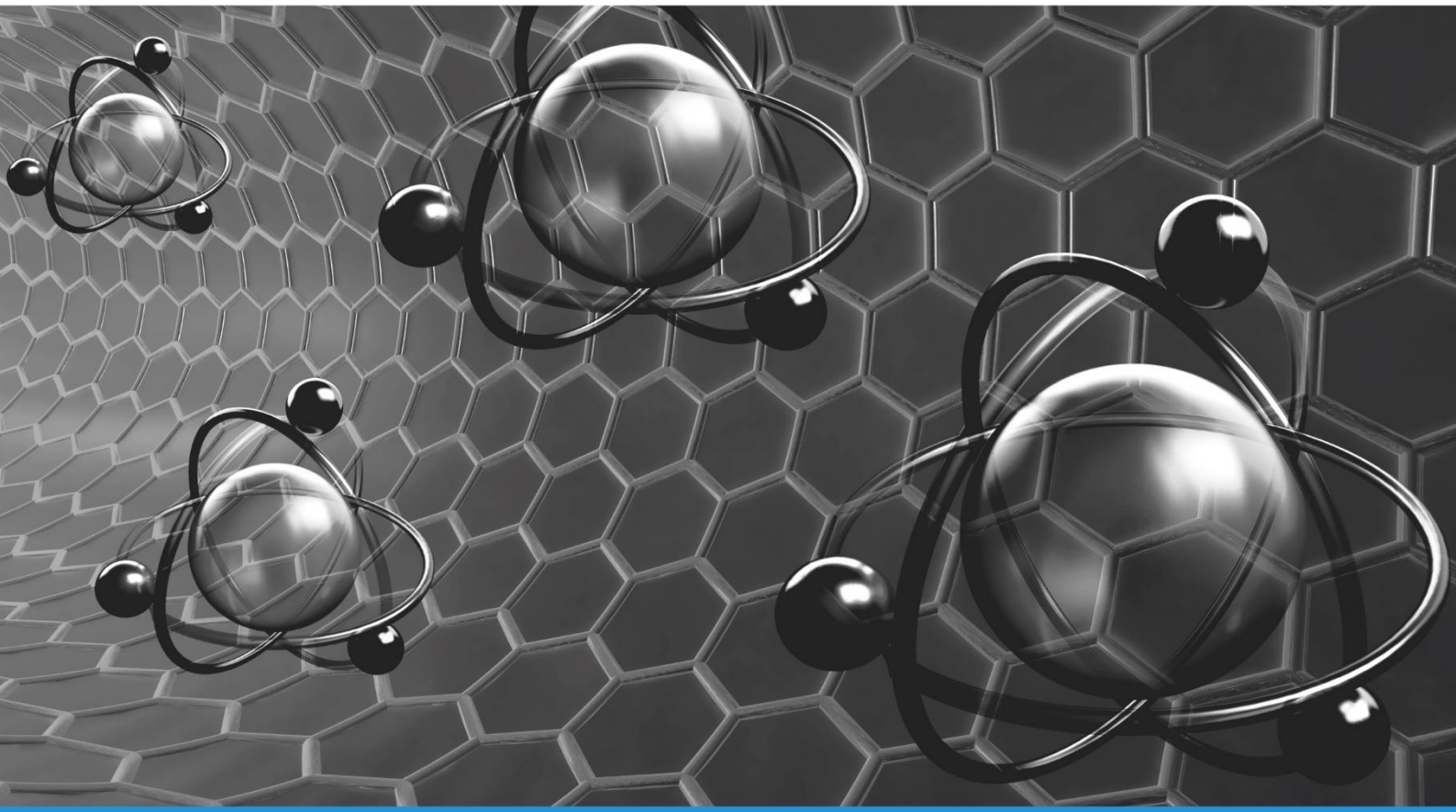
NANO2ALL

SOCIETAL ENGAGEMENT ON RESPONSIBLE NANOTECHNOLOGY



preliminary results –

citizen dialogue in France

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NANO2ALL – CITIZEN DIALOGUE

TRACES – Espace des Sciences Pierre-Gilles de Gennes (ESPCI Paris – PSL)

Paris, France - April 22, 2017

Context and needs

Exercising democracy requires that technologies and innovations - since they prepare the world of tomorrow -, are chosen by society based on a risk-benefits evaluation in the framework of values, needs and concerns of the wider possible societal representation. In fact, citizens will accept less and less a scientific and technical communication simply aiming at justifying already defined choices, without giving them the possibility to express and defend a viewpoint, and the guarantee of being heard.

Based on this starting point, the need to create carefully designed dialogue spaces emerged that allow civil society to express itself on technological development, and provide the possibly to influence it.

In fact, it is necessary to encourage the wider public to feel concerned by these issues, and to provide them with the necessary tools in order to clarify their opinions and gain awareness of their potential role and influence, as well as of the fact that they can make a difference, if they want to.

Rather than seeking empowerment and erudition through the accumulation of information, we would like that individuals gain ownership of their learning pathways and are able to link new knowledge about new technologies to their personal values, needs and concerns, while opening at the same time new insights and new reflections.

The French Nano2All citizens' dialogue

On April 22, 2017, we organised at Espace des Sciences Pierre-Gilles de Gennes (ESPCI Paris – PSL, Paris, France) a citizen dialogue on nanotechnologies, and more specifically on the role of nanotechnologies in the field of brain-machine interfaces (BCI). The dialogue scenario included a short introduction, the building of a « future object » by pairs of participants, the production of two narratives associated to each object, and finally a reflection on values, needs, and concerns, that emerged from this work. We had 11 participants (6 women, 5 men): three young adults, 5 adults, and 3 seniors. The role of youngsters in the exercise of building an object was essential. In fact, their imagination and their futuristic visions allowed adults and senior to let themselves free to create and imagine in the first, creative part of the workshop. In fact, at first adults were blocked in the creation of an object, using as a justification for non-acting the lack of enough knowledge and information on such technical issue. The activity was somehow hard to begin. However, once the activity started, the whole group found its role, its posture, and everyone was very engaged in producing ideas and developing his/her points of view, concerns, expectations.

Findings and conclusions

Through the day, the discussions were more and more focused and started to converge to end up in a reflection on values, needs and concerns of the participants with respect to nanotechnologies and their roles in brain-machine interfaces.

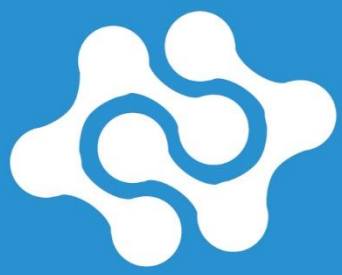
Overall, participants mainly wished to underline and communicate *values* to researchers and decision makers, rather than needs or concerns. Among these values, we can underline the notion of social life, equality, and independent choice for everyone: science and researchers are asked to take into account and be in agreement with these values in their work. The need of valuing the human dimension in the development of new technologies also appeared very important for the participants. They specifically pointed out that every technological improvement should be made in collaboration with citizens, and within a very strict ethical framework. In fact, the main worries concerning the development of these technologies are related to an unethical and inappropriate use of data, but also to the health consequences of brain implants.

The conclusions of the workshop focused on the importance of controlling those researches in order to strictly remain within the context of medical needs, and not go beyond them.

The following table summarizes the main outcomes of the final discussion.

Needs	Concerns	Values
• Recover lost human functions (sight, memory, movement, etc.) • Development of medicine • Medical “emergency call” • Diagnosis • Direct transmission of information (need to transfer some information directly brain to brain, to understand each other quickly) • *Value the “Self”* • Leisure (video games) (need to experiment new sensation and to explore the capacity of brain machine interface to do this) • **Ethical and citizen consultations** • Educate society about science and technology	• *Creation of new needs for and by the commercial sector.* • **Uncontrolled misuse of private data** • High costs (social security paying for it? Democratisation of health?) • Transmission of information such as advertising. (no commercial advertising to force citizens to consume. Like TV advertisement but directly in one´s brain.) • Cognitive confusions. (using the brain machine interface: with video games or with other applications to touch one´s cognitive sense) • *Marketing* (as for mobile phones) (direct transmission of data in the brain to make citizens want to buy new products & services) • Risks for children and teenagers. • Health risks (e.m. waves, nanoparticles inside the body, etc.) • Blurring of the frontier real/virtual (by using this technology (BCI) usually)	• Social life • **Autonomy** • New way of conceiving aging • Prevention/cure • Science should serve the interests of humanity • Right to be informed on technological advancements • Precautionary principle • **Democratize the access to technologies for medical treatments** • Ethics • **Scientific, technological, and philosophical culture for everyone**

In bold → high-priority themes
In italic → low-priority themes



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