

Reflecting on the Debates...

As a general commentary in all the debates, participants emphasized the novelty of synthetic biology. Consequently, it needs to be deeply studied in order to obtain as much information as possible on the many forms of risk it entails. This will enable more reliable characterizations of biological parts and processes. Statistical analyses to assess risk should be included. Participants with a background in biology stressed that such knowledge and studies are important, not the least because biological systems are far more unstable than classical engineering devices such as boats or bridges. They also pointed out that only on the basis of knowledge and information about the risk entailed by new technologies, can good and robust decisions be made. On the basis of such information we can debate on good and bad uses and applications.

The importance of a transparent communication between scientists and the media was also stressed. People should have access to reliable and properly explained information, as they are the main stakeholders of the possible applications of synthetic biology.

Open source vs. monopolies was one of the most debated issues in all of our discussions. Some people strongly believed that the sharing of knowledge was essential and should never be interrupted, as the availability of information helps to better develop and increase the speed of science. However, other people thought that having several companies competing to provide the same product or service favors the improvement of those products. Regardless of their opinion about open source resources, nearly everybody agreed that monopolization triggers hacking, which could bring devastating consequences, as we can see in our short dramatic movie "Talking Life".

When asked about the possibility of talking bacteria telling lies in our project, we found that the audience did not believe that the bacteria's behavior was conscious, and neither did we. Rather, people understood that the bacteria's "lying" behavior is led by a mechanism of evolutionary advantage (mutations). In this way it was emphasized that even if we can communicate with bacteria, they are not like humans. "Talking Life" is different from human communication; what kind of communication is this then? This was one of the implicit questions.

We would like to mention the particular case of the audience in Bergen, where the movie was also screened. Most of the attendants had a background in ethics, and they work professionally as ethicists. Probably for that reason, the discussion in this debate was rather different from the other debates in Spain and France as they focused on different themes. In Bergen, the participants gave more importance to the possibility that new devices could increase the isolation and feeling of loneliness of elderly or sick people. They also mentioned the role of the ambiguity of the biohacker in the movie; on the one hand, she cares for the grandfather, but on the other hand, she and her family are rather absent from the caretaking.

After hearing, registering and analyzing such divergent opinions from different people, we reached some general conclusions. Science has the potential to create good and bad tools and applications. Thus, in addition to the role of bioethical committees, scientists hold inherent responsibilities for what they make, to a certain degree. Nevertheless, it is important to take into account that a potential bad use should not stop a great idea.

And last, but not least, we have to bear in mind that synthetic biology is a rather young science and has yet to be developed. Through our engagement with the public during these debates, we were able to bring new topics into the lab and see our science under a new light. As the Spanish poet Machado would say:

"Traveler, there is no road; you make your path as you walk"