BARCELONA DEBATE (Spain) 10/09/2012
CULTURAL CENTRE

1) Is synthetic biology a safe tool to deal with future challenges as the population ages?

- What is dangerous about synthetic biology is the fact that we are dealing with living organisms. This condition implies that they can suffer mutation and be unpredictable.
- Rather than the fact of being alive, the relevance of this issue could rely on accepting that all technologies can fail. When using a bridge or going through a surgical procedure, we accept the risks by knowing the benefits. It is important to know the risks in order to have all the knowledge to make the right decision.
-This technology is as dangerous as any other medicine.

2) Open source / Monopolies on life

- It (safety) depends on the control of the protocols. It would be better if there was an external quality control protocol, not done by the company developing the product.
- Maybe, the access to the knowledge or technology shouldn't be restricted, but there should be a very clear legislation or protocols on how to make good use of them.
- There could also be a control over the patents. If a company has total control, they own the possibility of developing them, and they decide its price. We wouldn't benefit from other research groups working on the same subject.
-It could be difficult to patent something that changes so much as living beings. If it suffers mutations, it won't be the same thing that had been patented.
- If something is open source, the market is more free and versatile, the client has better access to that technology. Plus, *four eyes see more than two*
- Regarding the private companies' point of view, the company should accept that after researching for several years the experiment could go wrong and don't make any profit out of a failed research pathway.
- The biotechnological companies could try to find a novel, more imaginative way of making money other than patenting inventions. They could try to find different way, may be something like toll roads, once the investment is paid off, the roads are free. But there should be a harsh control on this to prevent fraud.

3) Communication with mutated bacteria

-Mutations are unpredictable, but they can be statistically characterized, so we have an idea of the associated risk.
-Open source favours the apparition of mutations when the culture is passed from one hand to another, never returning to the original stock culture.
-It should be considered very important to try to prevent mutations by biotechnological means. Improving the replication machinery or something similar.
- Is there any difference between doing a task with synthetic biology or using the current

technology? Is it any better than physical or chemical tools used nowadays? If it is, then there shouldn't be any problem in using it. The fact of the device being a living organism is not that important for the normal user. People worry more about its correct functioning. But it is important to know if being alive makes the device more dangerous or not.
-When a new technology arises, it's a matter of time until people start trusting it. That happens with every new technology, like X-rays when they first appeared.
- Brands and companies have an image of being serious. People assume that companies have scientists improving their products and that there is a control over what they do.
- We shouldn't be so radical and say that "opensource is good and monopolies are bad" both have their advantages and disadvantages.

ANALYSES

1) Is synthetic biology a safe tool to deal with future challenges as the population ages?

As long as we are aware of the risks, we should be able to make the right decision on when to use this technology.

2) Open source / Monopolies on life

Even considering that companies transmit a feeling of safety and control over their products, monopolies are not well seen and are considered a brake to scientific improvement of technology. Knowledge should be available for everyone to make the products improve faster due to collaboration. But safety controls should be properly established to prevent any unwanted result.

3) Communication with mutated bacteria

We should try to reach the most correct functioning of any device we use and statistically characterize its results in order to avoid malfunctions or "lies". This way people can trust that technology.
Open source has advantages and disadvantages, just like companies' control of technology. There should be a well controlled balance over both positions.

COMMENTS

We had a small audience in this particular debate (seven people), but they were eager to participate. Two of them were biologists and one of them was an engineer. The rest lacked scientific information. They were concerned about the patents' policies and monopolies controlling technology. They all agreed that every technology has its risks and has to be understood and well known in order to be trusted.