Brains in dialogue: brain science at the service of European citizens

The EU project fostering a true dialogue among brain science and society.

Neuroscientists, clinicians, health operators, service users, philosophers, lawyers, social scientists, policymakers, journalists and other citizens: advances in neuroscience involve people from all walks of life. Fostering a true dialogue among science and society is the main aim of **bid-brains in dialogue**, a three year project funded by the European Commissionunder the Seventh Framework Programme and coordinated by the International School for Advanced Studies (SISSA), Trieste, Italy.

bid manages a website hosting news, informations and TV-web activity (www.neuromedia.eu) and has established a press office service for journalists. bid organizes a series of workshops and open forums to produce and disseminate accurate scientific information on the state of the art, the promises and the risks, and to discuss the ethical and social issues associated with three main neuroscientific topics: brain imaging, brain devices and predictive medicine.

Brain science is vital to help us understanding how the brain works and open new doors towards brain disease treatments. However, the public and even scientists are still uncertain about the potential applications of this new knowledge and, as we begin to identify them, we see that they raise significant ethical, social and legal issues. These concerns are relevant for fast-advancing techniques, such as brain imaging, brain devices and predictive medicine.

The latest brain imaging techniques such as functional Magnetic Resonance Imaging (fMRI) and Positron Emission Tomography (PET) are providing a new link between metabolic processes occurring in the brain and brain functions. These new technologies are already being tested for early diagnosis of several psychiatric and neurodegenerative diseases and also outside the laboratories for different purposes like lie detection, criminal profiling or marketing.

Brain devices offer a new approach to restore or modulate neural functions that are lost or compromised because of a nervous system disorder, injury or stroke. Many patients suffering from Parkinson already benefit from surgical implantation of a brain pacemaker, a treatment known as Deep Brain Stimulation (DBS) and similar benefits might spread in future to patients affected by major depression or other serious clinical conditions. Brain devices that detect neural activity, commonly known as brain-machine interfaces (BMI), promise to allow completely or severely paralyzed individuals to control movements of a variety of prostheses, such as robotic arms, legs and wheelchairs providing an undisputable increase in their quality of life.

The recent availability of high-density genotyping devices allows the identification of the genetic basis of common diseases and is crucial in understanding the interplay between genetic and environmental risk factors in neurodegenerative diseases such Parkinson or Alzheimer disease. The same approach, based on the screening and analysis of individual genomes, might permit the identification of personalised drugs providing the most appropriate treatment for individual patients.

The use of these techniques clearly has social, legal and ethical implications. How should we deal with the privacy issues raised by genetic tests? Can brain imaging technologies allow us to read minds, and if so, how should we regulate their use? Can brain devices influence our free will? Such questions cannot be answered by scientists alone.

Therefore bid. The project has a scientific and communicative commitment which will bring useful lay knowledge to the experts and will help European citizens to appreciate the contributions and the limitations of what neuroscience can provide for welfare and human health.

The project has the potential to improve the dialogue between the different stakeholders. Project activities and research will produce communication material and gathering occasions that will help remove the existing barriers among the stakeholders and build a sound network that will last beyond the duration of the project. The information material will be available on the website and might be used for educational purposes or in the preparation of new research projects. In particular, the outcomes of our debates and research might also represent valuable material for the policy makers. Furthermore, bid activities might provide useful models of dialogue among different stakeholders.

Facts and figures:

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Acronym: bid

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