Is it acceptable to use a brain scan to read a person's mind?

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Credit: Radboud University

Using brain scans to see what a person is thinking? There's still a long way to go, but technologies for 'reading' the mind are developing fast. Could the use of such technology create privacy concerns? Giulio Mecacci and Pim Haselager of Radboud University propose five criteria that might help ethicists and policy makers to assess the potential implications of brain-reading technology. Their paper will soon appear in Science and Engineering Ethics.

Using technologies such as functional Magnetic Resonance Imaging (fMRI) and electroencephalogram (EEG), researchers collect information about a person's brain activity. Thoughts can be associated to certain patterns of brain activity. By training an algorithm to recognize these associations, a person's thoughts can be inferred from their brain activity. In other words: to a certain extent, a person's mind can be read.

Are your thoughts still your own?

Such 'brain-reading' techniques can be used for a number of purposes. For 'locked-in' patients, for example, who are completely conscious, but have absolutely no control over their bodies any more. However, such applications also raise questions for society. Are your thoughts still your own? And can you be held responsible for your thoughts, for example in court? Mecacci and Haselager suggest that in order to assess these ethical and legal issues, a framework is needed.

Five criteria

Mecacci and Haselager's proposed framework consists of five criteria: accuracy, reliability, informativity, concealability and enforceability. Accuracy and reliability pertain to how effectively the method can measure a certain mental state. Informativity shows how relevant the data is to a practical application. Concealability and enforceability are further factors that become particularly important while assessing the potential for infringements of mental privacy and civil rights. Giulio Mecacci: "The last two criteria help addressing questions like: to what extent can you read someone's brain unbeknownst to a subject? And to what extent is it possible to use a brain-reading method against a person's will?"

What if we could read a paedophile's mind?

Mecacci and Haselager demonstrate how the criteria work by applying them to a specific scenario: What if a brain-reading method could identify paedophiles? Pim Haselager: "We suspect this scenario to be among those where societal acceptance of brain reading methods would be the highest. We use this case to sharpen the focus on the theme of "mental privacy," and whether a person has the right to keep their thoughts and feelings private."

Despite the currently limited applicability of brain-reading technology to numerous societally relevant scenarios, the scientists believe that society should already be thinking about this issue. "There is discussion, but it's not yet really systematic, in our opinion. That's why we've discussed these criteria, so that consideration of the pros and cons of the various implications of brain-reading can take place in a more systematic and comprehensive manner," explains Haselager. Giulio Mecacci adds: "By applying the framework we describe, you realise that reading the mind is anything but simple."

More information: Giulio Mecacci et al. Identifying Criteria for the Evaluation of the Implications of Brain Reading for Mental Privacy, *Science and Engineering Ethics* (2017). DOI: 10.1007/s11948-017-0003-3

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