

Brain-computer Interface Allows Communication With Locked-In Patients

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Description

Technology has become a necessary presence in daily contemporary life. We depend on our phones to tell us the time, our plans for the day, where we are going, and so forth. On an even higher level, we may be progressively depending on technological bridges such as messenger, SMS, Instagram, etc., to communicate with peers and strangers. But does this imply that perhaps we can no longer communicate without such instruments? And do these technologies allow us to communicate more efficiently, truthfully or enjoyably than we ever have?

With the recent release of a brain-computer interface, researchers in Europe are now capable of communicating with four people suffering from "locked-in syndrome," in which the patients are paralyzed with exception of the eyes (Lou Gehrig's disease). The interface measures blood flow and changes in electrical waves in the brain. The team asked the patients to respond to a series of yes or no statements, such as "Paris is the capital of Germany," in order to test accuracy. The answers were consistent about 70% of the time.

Importance

On an event-specific level, communicating with locked-in patients has long been an issue as far as family members deciding on whether the plug can be pulled on a loved-one, according to whether they believe the patient to be in pain, or whether they truly want to continue living or not. It is also important to value the life of someone who has limited tools of connection, and to value that life by enhancing communicating in whichever way possible.

On a more philosophical level, the ability to communicate with locked-in patients through the brain-computer interface has heightened the level of communication between humans of all kinds, now even those we previously believed were impossible to communicate with, and some we believed to be brain-dead. On this higher level, communication and connection within the network of the human species is enhanced, while also strengthening the dependency on machines to assist in human-to-human communication.

Implications

Event-specific level: The brain-computer interface allows for family members to observe brain activity and receive 70% more solid answers to questions regarding life support. Family members can communicate with those they believed to have lost mentally, and learn whether they are happy and want to continue living.

Wide-scale: This article forced me to consider the relationship between man > machine > man. There are implications that humans are more frequently dependent upon machines to connect and communicate with other human - almost as though machines have become a necessary mediator, and we must see and speak through them in order to hear and see one another. We even *think* through them, and in this particular case, it would be impossible to communicate between the patient and researcher or family member without the machine assisting in interpreting the patient's biological function. Such progression can imply that technology and machines are not only necessary in cultivating communication between humans, they are in some instances more advanced than humans at bridging the gap between us.

Opportunities

- Potential to help a variety of locked-in type syndromes such as Lou Gehrig's, ALS, stroke and spinal cord injury.
- Learning whether locked-in patients want to continue living, and use in legal battles regarding life support.
- Potential for creation of a letter-choosing system for locked-in patients so that they may communicate on a more advanced level (rather than just responding to yes or no questions).
- Opportunities for greater human connection and understanding. Very slight potential for future endeavors in mind-reading.

Threats

- Possibility of miscommunication or false readings, potentially causing an unwanted death.
- It is not clear, nor discussed as to whether the brain interface (which fits to the head like a swimming cap) may cause any damage or discomfort to the patient, and they have no way of

signaling this without the question being asked directly. (Though I would assume this is unlikely, as there would be physical signs of this.)

- Humans becoming more dependent on technology in order to communicate between one another. Encouraging the necessity to function through interfaces and machines in order to connect.

- Corrupt misuse of this technology to harm, provoke or exploit the brain of locked-in patients or otherwise.