Researchers take another step towards mind controlled robots

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(Phys.org)—Researchers at CNRS-AIST Joint Robotics Laboratory in Japan have created a robotic system where a robot is controlled by a person's thoughts. A user of the system focuses their attention on a symbol on a computer screen and the robot responds in a preprogrammed fashion.

The system is made up of three parts, not including the human being. The first is a cap that is worn by a person that captures brain wave

patterns. The next part is a signal processor that interprets the brain waves and turns them into commands that a robot can understand. The last part is the robot itself, which is shaped like a human being. To use the system, a person sits and stares at a computer screen that has flashing arrows near the edges. The signal processor recognizes which arrow is being studied and then sends a command to the robot instructing it to respond in a way that has already been programmed – staring at a flashing arrow pointing left, for example, causes the robot to walk to the left.

There is no fine motor control yet, the robot is taught how to walk to the left, right, etc. in advance. Thus, the commands the robot receives from the user are very basic, but it does demonstrate a first step towards the creation of true avatars – robots that move around in the real world controlled by the thoughts of a person sitting in a remote location.

The robot is also able to carry out instructions based on the user looking at predefined objects as well. For example, if the person wearing the cap stares at a soda bottle shown on a computer screen, the processor sends instructions to the robot to fetch a nearby soda bottle and bring it to the person, demonstrating that such a system could be used to assist paraplegic people, giving them more control over their environment.

The overall goal of the research is to design a system that allows a user to feel embodied by the system, controlling a robot as if they were inside of it, serving as its brain, and seeing the world from its perspective.

More information: via DigInfo

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