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Scientists steer car with thoughts

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Courtesy of Free University Berlin
and World Science staff

You'd better not let your thoughts wander if you drive using a new technology from the Free University of Berlin. Computer scientists there have developed a system to let people steer a car with their thoughts.

Using new, commercially available sensors to measure electrical brain waves—devices called or electroencephalograms—scientists learned to tell apart one person's brain patterns for commands such as "left," "right," "accelerate" or "brake." They then created an interface to connect the sensors to their otherwise purely computer-controlled vehicle.



A driver tests out a brain-controlled car at Berlin's former Tempelhof Airport a [video](#) posted on YouTube.
(Courtesy Autonomos Labs)

Although the machine needs some work and certainly has its drawbacks, its developers insist it could become one option for the transportation of the future.

The brain-driven buggy was tested at the site of a Berlin airport that closed down two years ago, Tempelhof.

The researchers first used the sensors to measure brain waves in such a way that a person could move a virtual cube in different directions with the power of his or her thoughts. The test subject thinks of four situations associated with driving, such as "turn left" or "accelerate." In this way the participant "trains" a computer to interpret bioelectrical wave patterns emitted from his or her brain and to link them to a command that could later be used to control the car.

The computer scientists connected the measuring device with the steering, accelerator, and brakes of their automobile.

The driver “was able to control the car with no problem—there was only a slight delay between the envisaged commands and the response of the car,” said Raúl Rojas, who heads the Autonomos laboratory at the university. In a second test version, he added, the car drove largely automatically, but the driver was able to set the direction at crossings.