

UW team links two human brains for question-and-answer experiment

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1 Experiment Summary and Setup

Researchers at Washington University used direct brain to brain connection to enable pairs of participants to play a question (yes or no) and answer game by transmitting signals from one brain to the other over the Internet.

The respondent wore a cap connected to an EEG machine and is shown an object on a computer screen, and the inquirer sees a list of possible objects and associated questions.

The inquirer sends a question and the respondent answers "yes" or "no" by focusing on one of the two LED lights attached to the monitor, which flashes at different frequencies. The answer is then sent as a signal to the inquirer's head. The "yes" signal is intense enough to stimulate the visual cortex and cause the inquirer to see a flash of light (phosphene, a blob, waves, or a thin line created through a brief disruption of the visual field). The goal of the game is to get the inquirer to identify the correct item through this process.

2 Logistics

This experiment was carried out in dark rooms in two UW labs located about a mile apart. It had 5 pairs of participants each playing 20 rounds of the game. Each game had 8 objects and 3 questions that would solve the game if answered correctly. The sessions had a random mixture of 10 real games and 10 control games (both structured the same way).

To ensure no outside factors contributed to the final answer, inquirers wore earplugs so they couldn't hear the different sounds produced by the varying stimulation intensities of the "yes" and "no" responses.