The Promise and Peril of Digital Brain Enhancement

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Neuralink, a company founded by Elon Musk three years ago, is the most notable of several companies developing a new type of Brain-Computer Interface (BCI): a direct, two-way, digital system that is robust, compact, and wireless. A big reason Musk's company has received so much attention is because he has stated that its long-term aim goes beyond current therapeutic uses to the merging of humans with AI. A related cognitive enhancement has been developed by a team at the University of Southern California led by Theodore Berger: a prosthetic digital memory that can be implanted in the brain. It holds the possibility not only to replenish lost memories for those who have memory problems, such as Alzheimer's patients, but also to artificially enhance the memories of healthy people. These advances present great promise, but also dangers. BCI is already being used for emotional and mood therapy in psychiatric patients, and some posthuman ethicists want to use it, among other technologies, for moral enhancement of the human species. It could also radically increase a user's thinking speed and abilities to interact with digital machinery, allowing humans to compete with AI for jobs (a key hope of Musk's); however, it also presents ethical problems related to who gets it, to safety, and to privacy. Similarly troubling, prosthetic memory has already been used by Berger to give rats and primates false memories of experiences they never had. Some of these uses of intelligent technology have been anticipated by fiction—especially science fiction. My talk will address the promises and pitfalls of these emerging technologies as represented in fiction and in the real world, and possible solutions for the dangers.