The New York Times

PULSE OF THE PEOPLE

By Gina Kolata

July 26, 2016

Americans aren't very enthusiastic about using science to enhance the human species. Instead, many find it rather creepy.

A new survey by the Pew Research Center shows a profound distrust of scientists, a suspicion about claims of progress and a real discomfort with the idea of meddling with human abilities. The survey also opens a window into the public's views on what it means to be a human being and what values are important.

Pew asked about three techniques that might emerge in the future but that are not even close to ready now: using gene editing to protect babies from disease, implanting chips in the brain to improve people's ability to think, and transfusing synthetic blood that would enhance performance by increasing speed, strength and endurance.

The public was unenthusiastic on all counts, even about protecting babies from disease. Most, at least seven out of 10, thought scientists would rush to offer each of the technologies before they had adequately tested or even understood them.

Ian Burkhart, with a port on his head connected to a chip in his brain. Mr. Burkhart, though paralyzed, was able to regain control over his right hand and fingers, using technology that transmits his thoughts directly to his hand muscles, bypassing his spinal injury.

Lee Powell/The Washington Post, via Getty Images

Religion affected attitudes on these issues. The more religious people said they were, the less likely they were to want genetic alterations of babies or technologies to enhance adults. The differences were especially pronounced between evangelical Protestants and people who said they were atheists or agnostics.

For example, 63 percent of evangelical Protestants said gene editing to protect babies from serious diseases was meddling with nature. In contrast, 81 percent of atheists and 80 percent of agnostics said it was not fundamentally different from other ways humans have tried to better

themselves.

Cary Funk, an associate director at Pew and the lead researcher for the survey, said she was surprised by the extent of the public's worries. "These are appealing ideas: being healthier, improved minds, improved bodies," she said.

A Wariness of Enhanced Humans

Pollsters asked Americans whether they would want these enhancements for their babies or for themselves.

Source: Pew Research Center

Even if Crispr were perfected, there are other problems with gene editing to prevent disease. For example, how and when would you alter these genes? And what diseases are you thinking of eliminating? Most involve many genes acting together in ways that are not understood, so even the idea of altering a gene to protect a baby from disease seems, for now, to be limited to a very few disorders, like sickle cell, which involves a single mutation that can be corrected in blood cells that are easily accessible.

The idea for synthetic blood came from a report out of Britain last year that scientists were planning to start giving synthetic blood as a substitute for donated human blood. There was no thought of making people stronger or faster. But if synthetic blood could, for example, carry more oxygen, the possibility of enhancement exists. Once again, though, it is a futuristic notion.

This year, researchers reported that they had put a chip in the brain of a quadriplegic man that transmitted signals to a sleeve around his arm, allowing him to use it. Of course, that is a far cry from implanting brain chips to make people smarter or better able to concentrate, something that scientists do not know how to do.

Conversations in focus groups reflected the trends in the survey, with people saying they worried about what is natural and about the risks of altering humans. Nearly half said it would be acceptable to use synthetic blood, for example, if it simply restored a person's peak abilities. But more than three-quarters were opposed to using it to make people faster or stronger than would otherwise have been possible.

For example, a 35-year-old man in an Atlanta focus group said, "You would have this culture of people just obsessed with being bigger, stronger, faster and just outperforming everybody."

A 27-year-old woman in the Boston area said of brain chips: "The thing just keeps going over in my brain is that you're altering the brain. It's such a high risk.

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A version of this article appears in print on July 27, 2016, on Page A20 of the New York edition with the headline: We Don't Trust Scientists to Make Us Better

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