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A Technological Mind: Education through Dreamscapes

Technology is changing the intrinsic value of human beings. Is our insatiable hunger for knowledge limited or bolstered by technology? Is our technological ingenuity causing our downfall or is technology catalyzing a different path of evolution? In this essay, I'm going to talk about a new transmedia technology and its potential role in education: how it can help our brains develop new neural pathways in learning and obtaining knowledge. This educational technology, beyond the realm of universities, can exist within the realm of political diplomacy and architecture.

Neuralink—co-pioneered by Elon Musk—is a neural implant that connects a computer to the neurons in our brain. Neuralink connects media to thought, enabling people to access the internet, surf the web, or message their friends without a hand-held device. Originally designed for people with important brain and spine problems who can't physically manipulate a computer, I'm going to propose further implementations of this technology that can change the future of education. Susan Horton believed that when we write, we think. Neuralink takes this idea and makes it commutative by its direct connection to the brain. We can write when we think and we can think when we write. On one hand, it gives those who are not able to interact with society an opportunity to do so. It increases communities—which Bernard Steigler believes—supports deliberative transindividuation (or the sharing of knowledge across generations). On the other

hand, it might impair the physically-able into a more lazy state, which is what Steigler calls the “Pharmakon”. With the creation of a neural interface, we can control how information is presented and consequently develop new ways of thinking and learning. The future of Neuralink is endless.

Education techniques will evolve with Neuralink. It can build upon virtual reality by transport students to different learning environments. In the Japanese animation, Sword Art Online, gamers put on a virtual-reality headset called NerveGear that sends electrodes to the brain, which allows users to control their in-game characters with their mind.



Neuralink will be at the intersection between Sword Art Online and Iron Man’s virtual sandbox, where students can do physical experiments in a digital medium—building and destroying without the limitations of location, materials, or environment.



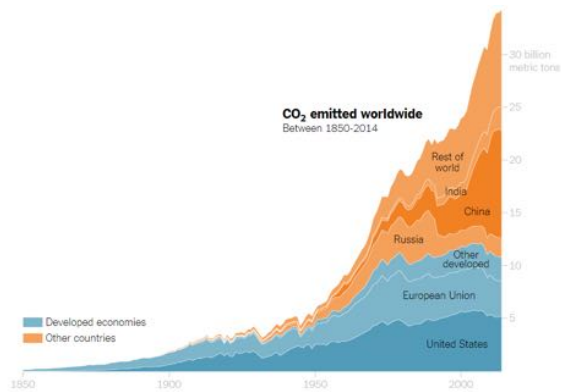
It is the new representation that Bret Victor has been searching for. It mediates between data and drawing. To best explain this, think of having Neuralink implanted into your skull. With a click of a button, the technology will send electrical signals to your brain, and your consciousness will transport you to a swamp ecosystem in biology class. Here, we can see an alligator eating a frog and algae growing on the alligator, which bacteria feeds on. We can see the whole ecosystem all at once. We can also interact with the environment. Since it's digital, learners can adjust the levels of sunlight to simulate the propagation of bacteria or increase the amount of frogs to see the boom and bust cycles of the ecosystem. Meeting Victor's criteria, we can see the entire state and adjust the system to make associations between how different components are interconnected. Because Neuralink is a technological interface, we can collect specific data points from the environment and create charts and graphs. Instead of replacing knowledge acquisition, it amplifies it. In a sandbox environment, you are not given a problem. You use the elements you have to form a problem for yourself and solve it. You are the creator. In this case, it can be used to combat Steigler's pharmakon. Similarly, the educated become educators, which is similar to Horton's claim that we think while we write. By building our problem set in this virtual environment, we are teaching ourselves.

You might think, then, that the professor's role will become completely obsolete. However, in every learning environment, the amount of possibilities has to be consolidated to fit a curriculum for targeted knowledge. In order to study history, for example, the teacher could limit the time period to a certain June, 50 BC and limit the space to Athens. There, architects could make measurements or Greek linguists could listen to the every-day dialect.



Or, if the professor wanted to teach the book *Huckleberry Finn*, they could limit the student's environment to just the boat on the Mississippi. A professor's boundaries won't affect the level of comprehension. Like Jonathan Edlemen's belief that it's imperative to give "low-res" models to catalyze the ideation process, a teacher's boundaries would be the outline in which students can design and discover from. By increasing the boundaries and connecting different concepts together, professors could create a media cascade—a sequence of models in which different ideas are generated during the development cycle. For example, a professor could introduce the boundaries from Athens to all of Greece so that students could study and observe the interactions between the city states.

Neuralink's educational capabilities aren't limited to academia. It can transform how we interact and understand situations and people: most importantly in international diplomacy. Neuralink gives us the capability to manipulate not only our digital environment, but also time. If we can experience a simulation where we are situated in one spot and see the same view over 100 years, we can physically see the effects of global warming and climate change. Currently, we are only able to visualize the climate change over time through charts and graphs. With Neuralink's simulation, we can see, feel, hear, smell (and maybe even taste) the climate change. By simulating the five senses, you can experience the struggle between the old and new ways of life, and shuttle between them. For example, you can travel between 1921 and 2021 in Ithaca New York on November 1st. It might be 0 degrees and snowing in 1921, but it'll be 60 degrees and sunny in 2021. The physical simulated experience can be translated to policy: if politicians understand and experience climate change for themselves, they might be convinced that it is imperative that we develop policy to combat it. This is the embodiment of Victor's criteria of interactivity.



Similarly, if Neuralink existed during WWII, it might have prevented the bombings in Hiroshima and Nagasaki. The development and testing of the atomic bomb, called Trinity, was a very secretive operation. If Truman was able to see and experience the magnitude of the atomic bomb test (transforming written reports and pictures to a 5d experience) he might have changed his mind about his fateful decision.



Neuralink can also streamline the perpetual architecture revisional process. The problem with designing buildings and city planning today is that there is a constant proposal and revision process between the wants and needs of architects, engineers, and developers. Architects idealize a building's structure, while engineers critique and reduce their concept into something that is feasible. Developers check to see if the building fits the style they are looking for in a certain area. The project is independently passed between three different people instead of all three people working at once to finish the project. One system, in which the architect can show off their design, and engineers can edit the dimension and materials of the building, and developers can envision what it looks like with the perspective of the whole system, incorporates Steigler's

idea for contributory research and Victor's ideal of an interactive and computerized system.

Architects can learn more about their design by obtaining a view of the whole system and being able to walk in their own building. Engineers can edit certain properties of the building and see how the structure changes without having the architect redesign the whole building. Developers can see and feel how buildings fit within a city.

Technology lets us manipulate the natural world to increase the longevity of our existence. As we become increasingly connected with technology, we as humans evolve. One of the most important factors in living as a human being is learning. The way we learn affects the way we live and develop. Neuralink is a technological interface that can amplify how we learn concepts. Consequently, we will evolve into a more connected race.