Annotated Bibliography

Austin, Jon. "IMMORTALITY POSSIBLE? World's First Human Head Transplant 'Successfully' Carried out." *Express*, Express Newspapers, 17 Nov. 2017, www.express.co.uk/news/science/880926/human-head-transplant-world-s-first-successful-corpse-Sergio-Canavero. Accessed 2 Feb. 2022.

Austin's article delves into the research and medical practices behind Dr. Sergio Canavero. Specifically, this article which was written in 2017 explains how Canavero has reattached the head of a deceased human body. Austin then goes on to explain that Canavero's work is influential because he is the first to ever try these experiments on human bodies, and that he has plans to extend his research on alive, brain-dead human beings that agree to organ donation. Head transplants like these are a large controversy because it can be seen as the forefront of biological and technological expansion, harboring a possibility of immortality. One interesting point that Austin brings across is that Canavero already has a patient willing to undergo a head transplant, which already is an extremely dangerous process. Austin writes that Canavero will have only seconds to decapitate and transfer the patient's head. This type of biological editing was also referenced by Broussard, as she explains how technology will not necessarily fix the world, unless put to good use by humans. Canavero is the one credited behind these procedures, rather than the technology he has developed behind it.

Broussard, Meredith. *Artificial Unintelligence*. Cambridge, Massachusetts, MIT Press, 2018.

Broussard's text starts off with a narrative of her early life, and how she yearned to create a robot from a do-it-yourself kit. She experienced technical issues which she learned from and was able to fix, but her largest takeaway was how the processes she used to build the robot translated to the processes used to, for example, write computer programs in programming languages. She uses these examples to explore the question "will technology save the world?". Controversial topics are brought up, such as why technology should not be the go-to for issues that don't necessarily require it, and how there is a false assumption of a "sunny technological future just around the corner" (Broussard 8). Many people thought of cryptocurrency and the blockchain to be the future of humanity similarly to how Broussard noticed people believing that technology would save the world. In reality, it's up to humanity to decide whether or not to harbor these innovative "trends" or use them up and move on.

Kurzweil, Ray. "How My Predictions Are Faring." Kurzweil, Oct. 2010, kurzweilai.net/images/How-My-Predictions-Are-Faring.pdf.

Kurzweil's list titled *How My Predictions Are Faring* was written just over a decade ago, and revisits how his predictions from the 1980s have ended up. Kurzweil introduces a core thesis which he calls his "law of accelerating returns" (or LOAR for short) and it describes how trends regarding technology follow "predictable and exponential trajectories" (Kurzweil 1). Some examples that Kurzweil cites include Moore's and Cooper's Laws, which describe how specific technological innovations will expand exponentially over fixed periods of time. Some of Kurzweil's correct predictions are as precise as the rate at which supercomputers can operate per second, or as broad as "individuals [will] primarily use portable computers" (Kurzweil 11). As Cho explains in her article, the fundamental success of cryptocurrency mining is the current rate of how fast a computer processor can process. Computer operations are recorded in operations per second, with modern desktop processors now passing hundreds of billions of operations per second. Kurzweil noticed the trends at which computing technology was advancing, and if his predictions are correct in our future, this only means that crypto mining will become more and more efficient, and therefore more and more powerful and valuable. And as seen in Cho's article, high demand and value of a crypto-coin sets up a series of events ending in environmental harm.

Barber, Gregory. "NFTs Are Hot. So Is Their Effect on the Earth's Climate." *WIRED*, Condé Nast, 6 Mar. 2021, www.wired.com/story/nfts-hot-effect-earth-climate/. Accessed 2 Feb. 2022.

As NFTs are a relatively new topic in the world of cryptocurrency, a good explanation of NFTs is provided by Barber in his text. Barber then connects this to how the boom of NFTs occurred, and where NFTs lie today. Barber also briefly goes over how NFTs are affected by a wide range of different things, such as social media like TikTok, or influential celebrities. Like Cho, Barber shows how the carbon emissions that crypto mining and NFTs generate are harmful to our global environment, and how the boom of NFTs is extremely detrimental to our climate. It is interesting that Lemercier, one who is credited for the initial start of NFTs, did not expect his idea to blow up and thus did not believe that the emissions generated from trading or transferring NFTs would be so harmful. This is an effective source for finding information on how cryptocurrency affects global climate.

Cho, Renee. "Bitcoin's Impacts on Climate and the Environment." *Columbia Climate School*, Columbia University, 20 Sept. 2021, news.climate.columbia.edu/2021/09/20/bitcoins-impacts-on-climate-and-the-environment/. Accessed 2 Feb. 2022.

Starting off with an explanation of what Bitcoin is, Cho gives a small summary of the definition of a decentralized currency as well as the intents and purposes behind such a currency. Cho then starts to explain the linkage between cryptocurrencies such as Bitcoin and the global climate. Cryptocurrency mining, which is a controversial topic in it of itself, is a practice used by many individuals and businesses to capitalize on the cryptocurrency trend. Crypto currencies are generated using mining, but these computerized mining strategies burn a lot of electricity and require oftentimes expensive hardware. This ends up crippling supply chains and economies worldwide, but more importantly, the world's limited natural sources. There is also useful historical data generated by Columbia University and the University of Cambridge on Bitcoin electricity consumption trends. All these topics and ideas show that this is a proper source for the research topic of cryptocurrency and global climate.

Livni, Ephrat. "Can Crypto Go Green?" *The New York Times*, New York Times Company, 10 Oct. 2021, www.nytimes.com/2021/10/10/business/dealbook/crypto-climate.html. Accessed 2 Feb. 2022.

It is already established that cryptocurrency and crypto mining is detrimental to our climate. Livni explores this topic by offering solutions to this issue and gives alternative solutions to banning cryptocurrency in favor for the economy. Key individuals and companies are also introduced, such as the Bitcoin Energy Consumption Index and its creator Alex de Vries, and the Tezos blockchain network and its creator Kathleen Breitman. Ephrat interviews these people for specific and detailed explanations of certain topics, so setting up their credibility is very helpful to the readers. One solution offered is using battery-powered mining operations to procure Bitcoin. The pros and cons are offered from the interviewees. Methods on how to control the emissions generated by cryptocurrency is a good connection to my research topic. I find it interesting that Livni has already claimed that a large issue lies with cryptocurrency mining. On top of this, he goes beyond explaining the fallacies of mining by proposing possible solutions to these issues.