Extended Minds: The Externalization and Expansion of Human Minds Beyond the Body

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Abstract – Despite the commonly accepted notion that the mind is inseparable from the body, the extended mind hypothesis claims human minds can become linked with the world around us. Through various avenues such as spoken and written language, humans may use non-biological means to allow the mind to store, access, and communicate information in extended capacities not otherwise possible. Though the extended minds hypothesis may be viewed as a result of advancing technology, it makes up only a small part of the way in which externalization may occur. Everyday life is full of examples of extended minds, from computers and phones to billboards and books. There is much debate among philosophers over the acceptance of the hypothesis, but in this paper, I will explore some of the most relevant arguments and aim to show why I hold the extended minds hypothesis to be true.

Keywords – Mind, Consciousness, Cognition, Language

Introduction

The mind has always been an enigma with vastly differing views on its nature. Though many ideas have been postulated, one that tends to stick out, either for its outlandishness or its alluring uniqueness, is that of extended minds. Rather than the many traditional views that restrict the mind to the brain or even the body, the extended mind hypothesis states that the mind can be extended using various external agents, be them spoken language, notebooks, computers, or some yet undiscovered technology. I believe that the mind can be externalized to varying degrees, depending on the specific situation. It is important to distinguish between extended minds and extended consciousness. Externalized aspects of the mind can come in various forms, such as information storage and extended cognition, all working as a way for the mind

to branch out from the brain. Extended consciousness, on the other hand, would imply that aspects such as perception could exist outside of the body. This difference is crucial to understand, as they entail two different ideas, with the varying possibility of each existing depending on factors such as technology. As this hypothesis goes against many conventional ideas, it faces some resistance, but evidence ultimately points towards the existence of externalized minds.

Though the idea of extended minds may sound like some futuristic concept or something straight out of science fiction, it has been occurring since the beginning of humanity. From the earliest cave paintings and the rise of language, humans have been using the surrounding world in conjunction with the mind. Consider the example of art, which has historically been used to convey emotions, ideas, and information. Looking at a detailed painting and getting a sense of what it must have been like to be in the world of the artist, we are interacting with a part of the artist's mind through an inanimate object. The same goes for language. Reading works of literature, we can learn about and experience different times and places, all through what are essentially scribbles on a page, written down by the author with the hopes that others will read it and experience what they experience. Although these may seem like relatively basic examples, they actually show how powerful and commonplace extended minds are.

Language

Language is one of the most powerful ways that we externalize our minds. We use language to communicate with others, as well as to make records about events that have happened or reminders of things that will happen. It has been suggested that language is the basis for the brain to carry out cognition.[1] If it is true that cognition relies on language, then perhaps it is true that in the reverse, and the paper that you are reading is a part of my mind that I have externalized onto the page. It may seem like a ridiculous claim at first, but it starts to make sense after some consideration. When observing language, there are two main aspects that need to be considered, speech and the written word. The differences between these two methods of linguistic communication involve different ways that extended minds are used.

Spoken language is a more short-term method externalizing an individual's mind, although that has been changing in recent times with the advent of such technologies as microphones and voice recorders. Almost all forms of spoken language are types of extended cognition, even though certain cases stand out more than others. For example, Martin Luther King Jr.'s famous "I Have a Dream" and John F. Kennedy's "Moon Speech" are famous examples of speeches that have

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[1] Andy Clark, "Language, Embodiment, and the Cognitive Niche," *Trends in Cognitive Sciences* 10, no. 8 (August 2006): 370-374, https://doi.org/10.1016/j.tics.2006.06.012.

moved people to action. Both King and Kennedy continue to be remembered in history by the words that they have spoken in the speeches because of the impact that they have had on the world. However, simple conversations, such as gossip, are just as impactful. In the case of gossip, one person is communicating with another, giving them an insight into their thoughts and mind, however insignificant the matter may be. Spoken language is essentially the speaker's mind externally manifesting itself in words, as the goal of language is information transfer.[2]

Written language, on the other hand, is the more versatile long-term counterpart to speech. Written records go back many millennia, and through them we can learn about the lives of our ancient ancestors. While they may not have explicitly thought about writing as being an externalized extension of their mind, they used it to keep track of agriculture, share ideas, and pass on information to future generations.[3] As time progressed, writing began to be used for more applications, eventually reaching the point where we are today, surrounded by writing everywhere we go. Billboards, signs, and warning labels are everyday things that we encounter and may not give a second thought, though they are prime examples of how writing functions as an extension of the mind. Consider the example of billboards; they are put up because an individual or group has an idea that they wish to convey with others, so they invest in an inanimate object and through writing, imbue it with a part of their mind. More direct extensions of the mind are books, which can convey an even greater sense of the author's mind, inherent in the longer format of the media. Through the language method of extended minds, we preserve history that allows future generations to learn from the past, something that is entirely unique to humans. The uniqueness of human language is something that sets us apart from other animals, effectively expanding our cognition to reach far beyond what could be achieved without it.

There are a few issues with using language as the primary way of extending the mind, most stemming from its accessibility. Any language that is used will eventually become obsolete, as all languages evolve over time,[4] leading to the equivalent of a mind's death. There are ancient languages that we still can't decipher today, such as the Linear B script, and anything that is written down has the possibility of sharing the same fate. Furthermore, some people may not be able to use language at all, either

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[2] Irina Mikhaylovna Nekipelova, "Language as Information System: Transfer and Saving of the Information," *Sovremennye Issledovaniya Sotsialnykh Problem*, (2015): 336 https://doi.org/10.12731/2218-7405-2015-9-26.

[3] Kurt A. Raaflaub, *Thinking, Recording, and Writing History in the Ancient World*, (Chichester, West Sussex; Malden, Massachusetts: Wiley Blackwell, 2014).

[4] András Kornai, "Digital Language Death," *Public Library of Science* 8, no. 10 (October 2013): e77056, https://doi.org/10.1371/journal.pone.0077056.

from mental or physical disabilities. Although current science may not be able to help their disability, we may eventually get to a point where the brain can interact with an external agent so that it can utilize expanded and externalized cognition to overcome biological issues.

Clark, Chalmers, and *The Extended Mind*

Andy Clark is one of the most prominent figures in the field of extended minds and cognition, having written influential papers that have become the basis for many discussions involving extended minds. Along with his contemporary David Chalmers in their seminal paper *The Extended Mind*, they proposed the idea of 'active externalism', which states that the human mind can be coupled with an external entity in such a way that the mind relies on that object for its cognitive ability.[5] They continue by arguing that the removal of the external entity would cause a decrease in competency, which would imply that part of the mind is somehow interacting with the object in such a way that it is reliant on it to function. This is important to consider, as the reliance on something outside of the brain for cognitive functioning would give credence to the idea of the extended mind hypothesis.

A related idea proposed by Clark and Chalmers is the "Otto/Inga" thought experiment, in which they introduce two people, named Otto and Inga, respectively. In the thought experiment, Inga has normal cognitive functions, while Otto suffers from Alzheimer's, relying on a notebook writing down new information as he receives it. In the thought experiment, he writes down the directions to a museum, with the ability to consult it as needed.[6] This experiment is a good example of a very basic form of an extended mind, as it shows a potential real-life scenario, and it is easy to examine the various benefits and issues that are present within the extended mind. For example, it's great as a way for someone who suffers from memory problems to gain a type of external memory, but it comes with many issues of its own. One issue that the authors bring up is the possibility of the wrong information being written down. While it is equally possible for non-externalized minds to have wrong information, there is a certain vulnerability with having a notebook. For instance, if Otto were to set down his notebook, a malicious agent may alter the information, and in turn literally rewrite Otto's mind. Another issue that is brought up in Clark's paper is the lack of efficiency and unnatural nature of utilizing external information.

A crucial part of extended mind is the ability to interact with the external agents seamlessly. Although there may be all the information that someone may need extant outside the brain, either written down or in some other way, it is useless if it cannot be

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[5] Andy Clark and David Chalmers, "The Extended Mind," *Analysis* 58, no. 1 (January 1998): 7-19, https://doi.org/10.1111/1467-8284.00096.
[6] Ibid.

accessed and not much better if it is unnatural and cumbersome to use. While presently this may be one of the biggest issues, there will likely be technological advancements that resolve this issue. In the future, for instance, there may be an SD card-type chip that could be implanted in the brain that would create the ability for external information to be stored within the cranium, linked up in such a way that there is no delay in the flow of information. Naturally, there are opponents to this type of technology, citing the potential for issues in software necessary to run the chip, with more extreme examples imagining a dystopian future.[7] Although we can't be certain about future technologies, there are many ways for external agents to be developed that will not lead to any major issues. Another issue that needs to be dealt with is the security of the external minds. As with the example with the notebook being rewritten, technological agents have the potential to be hacked. There are many issues with this, as apart from the obvious detriments to the owner of the extended mind, there are ethical and legal issues that will have to be dealt with as well.

Future Technologies

Technology will become a game-changer in terms of extended minds, potentially allowing for many new developments that can barely be conceived in the present day. It is reasonable to assume that technology will continue to develop quickly. Moore's Law dictates that the processing power for computers will double every year.[8] Putting aside arguments against this law, it's clear that technology will continue to advance to levels that we cannot currently imagine. This increase in technology will have major implications for various fields, but especially for extended minds. As technology advances, it will enable computers to become smaller and more powerful, with the potential for implants to have immense computing power, paving the way for extended minds as a form of cognitive enhancement.

Cognitive enhancements by means of internet enabled computer implants will allow for massive cognitive improvements to be made, by allowing us to instantly access practically limitless information. Currently we have low-level technologies that can interface brains to computers for various small tasks,[9] but a goal for the future is to have implants that will not only give us information but allow us to project a part

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[7] Michael Wheeler, "The Reappearing Tool: Transparency, Smart Technology, and the Extended Mind," *AI & Society* 34 (February 2018): 857–866, https://doi.org/10.1007/s00146-018-0824-x.

[8] The Editors of Encyclopaedia Britannica, "Moore's Law," *Encyclopædia Britannica* (December 2019), https://www.britannica.com/technology/Moores-law.

[9] Anatole Lécuyer, Fabien Lotte, Richard B. Reilly, Robert Leeb, A. Lecuyer, F. Lotte, R. B. Reilly, R. Leeb, M. Hirose, and M. Slater, "Brain-Computer Interfaces, Virtual Reality, and Videogames," *Computer* 41, no. 10, (October 2008): 66-72, https://doi.org/10.1109/MC.2008.410.

of our mind, essentially turning us into a kind of cyborg. Apart from accessing information from the internet, which is uploaded by other people, why not skip the middleman and create a direct network of minds?

An idea related to technological advancement is that the internet can form a 'web of minds', with cognition being shared by multiple minds. A closely related term is 'hive mind', referring to a linked system of minds that function together to create a more powerful or intelligent group, like beehives or ant colonies.[10] The 'web extended mind' theory proposes that the external agents that we use for extended minds will eventually become connected to the internet, thus enabling a more connected and intelligent extension of the mind. Consider Otto's notebook once again. If he were to use a digital internet-enabled device to find his way to the museum, he would have instant access to maps that could direct him exactly where to go, quickly and error-free. It doesn't just stop there, either. Once inside the museum, Otto would be able to access boundless information on the art pieces that he is seeing – learning the history of the art, the artists, its symbolism, etc. This increased technology lands squarely in the realm of transhumanism, with the technology having many implications dealing with technologically based human improvements.

Computers and super intelligence will also allow us to eventually extend our cognition to experience new worlds. Similar to the idea of a temporary mind upload, we could potentially use computers as an agent to extend our minds into, immersing ourselves in what we perceive as a separate place. In this instance, the extended mind can be taken further than just having thoughts or experiences stored outside of the brain. This is imagined in a thought experiment by Robert Nozick as a machine that people may use to give the experience of living a pleasurable life.[11] Using this so-called 'experience machine', we examine different aspects of what extended minds can possibly achieve. Though this separate world through technology may seem like an interesting way to do things that we otherwise wouldn't be able to do, it comes with its own risks and criticisms, stemming from the disconnect from reality and the unnatural nature.

When looking at these future technologies, it is important to pause and reflect on the impact that technology has already made. Phones, computers, even simple calculators are all recent technologies that drastically change the way that our mind interacts with the world. One case that shows the way the technology is already contributing to extended minds is in the case of Patrick Jones.[12] Jones suffers from various cognitive issues, such that he is unable to have a functioning memory, while

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[10] Andrea Gaggioli, "The "Hive Mind" is Near," *Cyberpsychology, Behavior, and Social Networking* 20, no. 5 (May 2017): 341-342, https://doi.org/10.1089/cyber.2017.29071.csi.

[11] Robert Nozick, *Anarchy, State, and Utopia*, (New York: Basic Books 1974).

[12] Gary Marcus, "What if HM had a Blackberry?," Psychology Today, last modified Dec 18, 2008, https://www.psychologytoday.com/us/blog/kluge/200812/what-if-hm-had-blackberry.

working as an ordained priest. He is able to achieve this because of his smartphone, making lists and notes for himself in place of his brain. This case shows that even through present technology, we can achieve benefits stemming from extended minds that allow people to live their lives much better than they could have before.

Ethics and Laws

Ethics is a huge discipline, and as it would be impossible to fully discuss it in this paper, I will only briefly touch on it. As beneficial as intentional extension of minds may be, many people take issue with the practice, for a number of different reasons. One ethical issue involving the extended mind hypothesis is the treatment of the agents being used as part of the mind. For example, I previously discussed a malicious actor tampering with Otto's notebook. If extended minds didn't exist, then the actor should expect to possibly be charged with vandalism or a similar crime. Taking into consideration that it is part of Otto's mind, however, then the consequences should be much more severe. If it turns out that extended minds are somehow proven or otherwise widely accepted, we must reexamine what is protected under the law, and even potentially expand the definition of a legal person to include their externalized components. This is currently being explored in the field of neuroethics, with the "trust and glue" relationship referring to the linkage between the mind and external agents.[13] Heinrichs proposes that if the link could be proved, then we should treat the externalized aspects of the mind as we would with a biological mind. It is important to have the field of ethics adapting and proposing different ideas for different philosophies, so that when one theory is proved to be completely true without any doubt, we already have the ethical principles in place that we can start practicing.

Just as ethics can lag in the changing world, so can laws. If we are to have technology that assists with extended cognition, whether it be a micro-implant or a huge machine, we should have laws that preside over the technology before it is fully implemented. Laws tend to follow science by a sizable distance, even if the technology is yet to be invented.[14] An example of this can be seen in a recent U.K. case involving cryogenics. An adolescent suffering from cancer wished to have her body deep frozen, but received backlash from her family, with the matter being legally

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[13] Jan-Hendrik Heinrichs, "Neuroethics, Cognitive Technologies and the Extended Mind Perspective," *Neuroethics* (April 2018), https://doi.org/10.1007/s12152-018-9365-8.

[14] Viveck Wadhwa, "Laws and Ethics Can't Keep Pace with Technology," MIT Technology Review (April 2014), https://www.technologyreview.com/s/526401/laws-and-ethics-cant-keep-pace-with-technology/.

ambiguous[15]. It is important that we consider the future when drafting laws, so that we don't end up in a situation where we have advanced technologies and no laws to govern them.

Counter Arguments

There are many people who are opposed to the theory of extended minds, for varying reasons, whether it is personal, religious, or philosophical. I will only be focusing on the philosophical arguments against extended minds, leaving personal and religious objections up to the individual. Currently, one of the most common arguments deals with the ability to access the information in a similar manner to biological functioning.[16] As I have already discussed, though, this is a weak argument as it does not consider the potential of future technologies. While it is true that a notebook cannot be accessed by the mind in the same seamless way as biological memories, the possibility of web-based implants is just one of the ways that this issue will be resolved.

The form of extended cognition existing as a web has been criticized by various philosophers as being impersonal. It is argued that while the group may have extended cognition, the effects may not include the individuals.[17] In his paper, philosopher Robert Rupert suggests instead that the focus be on the individuals, and the individual benefits received from being a member of the web. While this argument has gained some traction, I see it as missing the point. While it may or may not be true that a network of minds can beneficially contribute to the individual constituents, it doesn't necessarily matter. Rather, what does matter is the possibility of an extension of a mind existing at all.

Another issue taken with extended minds is the supposed reliance on pre-existing memories. Those opposing the extended mind hypothesis cite the role of external agents such as notebooks and smartphones serving to trigger memories that are already in the brain. These can be easily dismissed, however, if they are being used for information-based memories. Writings about non-qualitative information are similar to books, and since we can learn from books, the information written down should function the same. The argument becomes stronger, however, with external agents such as photographs. If I were to travel to Spain and take pictures so that I could have memories of the trip, I would consider that to be an extension of my

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[15] Anjana Ahuja, "Cryogenics Case shows our Laws are Lagging Behind Science," *The Financial Times* (November 2016), https://search.proquest.com/docview/1850006908.

[16] Daniel A. Weiskopf, "Patrolling the Mind's Boundaries," *Erkenntnis* 68, (December 2018): 265-276, https://doi.org/10.1007/s10670-007-9095-5.

[17] Robert D. Rupert, "Challenges to the Hypothesis of Extended Cognition," *The Journal of Philosophy* 101, no.8 (August 2004): 389-428, http://www.jstor.org/stable/3655517.

mind. Those who disagree would view my pictures not as a mind extension, but rather as a sort of key, merely reminding myself of my travel experience. This is an interesting issue, as it forces us to consider the nature of qualia and emotions, and how they would function in an extended mind scenario.

Similar is the issue of emotion and qualia. Some argue that while any sort of external minds may contain information, they don't contain the subjective aspect that is vital for memories. It has been proposed that there are two types of consciousness, each dealing with either informational or the qualitative aspect.[18] Block warns that we mustn't confuse 'access-consciousness' and 'phenomenal consciousness', as phenomenal-consciousness can often be considered variations on the information-based access-consciousness. Many other philosophers have agreed with Block and see extended minds of being at most sources of information that do not have subjective experience in them. Clark has refuted this, though, proposing a system that could tell the difference in color of a stimulus.[19] He argues that being able to tell the difference between color would prove that there must be some sort of qualitative experience, as color is something that has to be sensorily perceived to fully understand what it is.[20] This argument continues to be prevalent, despite Clark showing that the issue could be dismissed with his thought experiment.

Other Views of the Mind

There are many different theories on the mind, as it has been the focus of many philosophers since the beginning of humanity. Philosophy of mind makes up a large portion of the study of philosophy, encapsulating other subfields such as metaphysics. When examining the validity of the extended mind hypothesis, it is crucial to understand where it fits in with the other theories of mind. In the field of phenomenology, Charles Pierce's proposal of a *phaneron* is used to examine the mind in a different way than how it is usually done. A phaneron refers to the world we perceive after being filtered through our senses.[21] Pierce's view is important because it shows potential limitations that we have when perceiving the world. This ties into the

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[18] Ned Block, "On a Confusion about a Function of Consciousness," *Behavioral and Brain Sciences* 18, no. 2 (February 2010): 227-247, https://doi.org/10.1017/S0140525X00038188.
[19] Andy Clark, "A Case Where Access Implies Qualia?," *Analysis* 60, no. 1 (January 2000): 30-37, http://www.jstor.org/stable/3329286.
[20] Anna Fenko, Jacco J. Otten, and Hendrik N. J. Schifferstein, "Describing Product Experience in Different Languages: The Role of Sensory Modalities," *Journal of Pragmatics* 42, no. 12 (December 2010): 3314-3327, https://doi.org/10.1016/j.pragma.2010.05.010.
[21] Robert Burch, "Charles Sanders Peirce," The Stanford Encyclopedia of Philosophy, last modified November 12, 2014, https://plato.stanford.edu/archives/win2018/entries/peirce/.

idea of external minds as it shows that there are many varying views of the mind, with Pierce's "phaneroscopy" being very different from the extended mind hypothesis, stating that we are less connected to the world than we actually think.

Some other theories of the mind include passive externalism, dualism, and monism, just to name a few. Passive externalism, as opposed to the active externalism used in extended minds, refers to the view, in Clark and Chalmers' words, that "the meaning of our words just 'ain't in the head'"[22]. Dualism, on the other hand, refers to the idea that the mind is a separate entity from the body,[23] while monism argues the opposite, stating that minds are a direct biological result.[24] Where exactly do extended minds fit in? According to Clark and Chalmers, external minds are a form of active externalism, but the term is still restricted to those focusing on external minds. In order for more considerations for the extended mind hypothesis, we should focus on juxtaposing differing ideas of the mind, and both empirically and logically examine the idea of extended minds.

Implications

There are many implications that come with accepting the theory of extended minds, including the treatment of inanimate objects (as already touched on in the ethics section) and the future of therapy and medical procedures. Perhaps one of the most pertinent implications, however, deals with how we perceive humanity. If the way we think about something as central as the mind is changed, then it could lead to further investigation of things that we already assume to have knowledge about.

How we think about death will be dramatically changed if we accept that the mind is not limited to the brain. Aside from the literature that is left behind by deceased authors, there are currently 'digital remains' accumulating from peoples' presence on social media on other parts of the Internet.[25] This persistence of memory through digital extended cognition presents an ontological quandary that is difficult to tackle – at what point does someone truly die? Although it has varied by culture, it has generally been viewed that someone dies either when their normal homeostatic functioning ceases, or alternatively when consciousness is assumed to have halted. If the extended mind hypothesis is accepted, however, we need to decide whether the

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[22] Andy Clark and David Chalmers, "The Extended Mind," *Analysis* 58, no. 1 (January 1998): 7-19, https://doi.org/10.1111/1467-8284.00096.

[23] Howard Robinson, "Dualism," The Stanford Encyclopedia of Philosophy, last modified February 29, 2016, https://plato.stanford.edu/archives/fall2017/entries/dualism/.

[24] Jonathan Schaffer, "Monism," The Stanford Encyclopedia of Philosophy, last modified December 10, 2018, https://plato.stanford.edu/archives/win2018/entries/monism/.

[25] Patrick Stokes, "Deletion as Second Death: The Moral Status of Digital Remains," *Ethics and Information Technology* 17, no. 4 (December 2015): 237-248, https://doi.org/10.1007/s10676-015-9379-4.

externalized parts of the mind act to continue the existence of one's being. Of course, there may never be a completely definitive conclusion, but the different ideas should nevertheless be explored.

To begin looking into the issue of mental mortality, we must first determine whether the mind can survive in the absence of the central brain. As it is seen in language, whether it be classical literature or digital social media posts, ideas can survive past one's death. The issue, however, is the nature of these ideas, and whether they are still part of the mind or if they become liberated from any connections to a biological mind. Assuming that there were connections in the first place by theory of extended minds, we can know that the mind had multiple parts connected to the biological body when alive. The answer to this issue of mind death versus biological death leads into the topic of immortality, and whether it would ever be possible.

Immortality may be achievable to a certain degree with externalized minds. Though there is no doubt that Plato died centuries ago, there is an aspect of him that lives on through his writings and the writings of others involving him. We can understand the basis of his life and the life and ideas of the people he wrote about because he used language to allow a part of his mind to be preserved. Similarly, many other authors have expressed sentiment hoping that part of their mind will live on after they die.[26] It could be argued that this way of preserving aspects of oneself is a direct form of extended minds. This type of an extended mind, suggesting immortality, is sure to garner doubt from many philosophers, possibly arguing that literature turns to simple vestiges of a long-gone mind. While this may be the case, doesn't the existence of traces of a mind still imply that there are parts of the mind still in existence? Though this is difficult to definitively prove one way or another, I hold that there are some nonconscious, non-biological parts of the mind that can survive after death, persisting until they are destroyed.

Conclusion

To conclude, I believe that it isn't necessary for the mind to be contained in the brain, and the external minds hypothesis is generally correct. Evidence points towards the existence of objects that can be used in conjunction with the brain to produce an extended mind, and though there are many counterarguments, most have just as many flaws as the ones that they are arguing against extended minds. With the continued

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[26] Jeff Alessandrelli, "Fading Away Forever? on Authorial Immortality, Literary Virality and the Mountain Poems of Stonehouse," *The American Poetry Review* 45, no. 6 (November-December 2016): 35, http://link.galegroup.com/apps/doc/A469297405/ITOF?u=upenn_main&sid=ITOF&xid=9bae3ad8.

advancements being made in technology as well as support from philosophers such as Andy Clark, the idea of extended minds will continue to be discussed, examined, and possibly gain more traction in the field of philosophy.

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