

## Extended Mind and the Extension of a Self

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### I.

Digital technology has made various forms of convergence possible that would not otherwise have been possible, such as the convergence of hardware devices, media, and various applications. The most interesting form of convergence, however, is that between digital devices, such as the iPhone, and their human users. If one considers a smartphone an externalization of one's own cognitive processes, there is a convergence between subject and instrument, between one's cognitive subjectivity and a device that assists or substitutes for one's cognitive activities. The convergence of human beings and digital technology requires reexamining the boundaries of humans, instruments, and environments in a fundamental way. As the boundaries between self and instrument become vague and unclear, a new approach to the self becomes necessary.

Recently, there have been several attempts in philosophy and psychology to understand the human mind as extending into the external world. For example, Andy Clark and David Chalmers (1998) claim that when we perform cognitive activities with the help of external tools, the extra-cranial states or processes involved in those tools may be regarded as parts of our mind or our cognitive processes. The so-called "extended mind thesis" by Clark and Chalmers in their article "The Extended Mind" contends that our mind is not confined within an organism (inside our body) or our brain, but it can be extended outward over the boundary of our skin (pp. 7-19). In the foreword to Andy Clark's *Supersizing the Mind*, for example, Chalmers (2008) claims, "My iPhone is not my tool, or at least it is not wholly my tool. Parts of it have become parts of me" (p. x). This amounts to the claim that if external devices such as iPhones are coupled with our brains in an appropriate way, such devices themselves can be considered parts of our minds.

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What exactly is being extended when it is claimed that our mind extends beyond our body? According to Clark and Chalmers (1998), the extension of our mind can be understood in three different ways. The first is the extension of cognitive *processes*. Clark and Chalmers take an example for this from two ways of conducting a Tetris game. In solving a Tetris puzzle, we may do it while rotating each Tetris piece in the mind (or in the brain). On the other hand, we may literally rotate the piece on the screen by pressing a button on the keyboard while checking its congruence with our eyes. The latter is a case of the cognitive process occurring externally.

The second kind is the extension of cognitive *states*, such as dispositional beliefs or memories. To illustrate this claim, they give an example of the sentences or information stored in a notebook kept by Otto, who is suffering from Alzheimer's disease. There is a sentence recording a museum's address: "The museum is located on 53<sup>rd</sup> Street." Whenever Otto goes to the museum, he opens his notebook, checks the address, and uses it. The information stored in the notebook falls under a dispositional belief, the second kind of extension.

These extensions of cognitive processes and states are extensions of the mind in a narrow sense. The third kind of extension is the extension of a *self*, i.e., the extension of an agent or a person. An individual can compose a transitory, integrated system when coupled with external resources, and Clark and Chalmers (1998) claim that this can be regarded as an extended self:

Does the extended mind imply an extended self? It seems so . . . . The information in Otto's notebook, for example, is a central part of his identity as a cognitive agent. What this comes to is that Otto himself is best regarded as an extended system, a coupling of biological organism and external resources. To consistently resist this conclusion, we would have to shrink the self into a mere bundle of occurrent states, severely threatening its deep psychological continuity. Far better to take the broader

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view, and see agents themselves as spread into the world.  
(p. 18)

We may feel uncomfortable with the thesis of the extended mind in several ways. Among these ways, even if we grant a sort of cognitive character to the external states or process, the most profound discomfort is probably related to a question about the extended self, namely how it can be considered the extension of “my” mind. In this paper, I intend to advocate one way of understanding the extended self by answering this question. For this purpose, I will briefly discuss and criticize two recent criticisms by Eric T. Olson and Lynne Rudder Baker against the idea of the extended self. Then, I will try to defend a thesis of extended self with the help of the notion of “narrative self” which has been developed by Daniel Dennett.

### **II.**

When it comes to the extended mind, the extension will always happen from the center of something. If the external processes or states can be understood as part of an extended cognitive process, there should be a subject of these processes and states at the center of such extension. It means that there must be an “I” or the mind of an “I” at the center of the extensions, and external processes should be extensions of the “I” or the mind of the “I.” However, this implies that the cognitive process belonging to me exists outside of my body. The cognitive process ascribed to me or possessed by me is definitely a part of my “I.” When we discuss an ordinary object at the macroscopic level, the object is located where and only where its parts are located. If we apply such a standard for the spatial location of a quotidian object to cognition, the result is that “I” as a self is located wherever the cognitive parts of “I” are located. Doesn’t this amount to the claim that I am located outside my body? If so, I am not confined within my body. I exist outside my body in a form of distributed states.

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When it is understood in such a way, the extended mind not only suggests a new way of interpreting the roles of our body or the world in cognition, but it also seems to demand reinterpreting the notion of the self in a dramatic way. “The extended mind,” simply referring to the extension of mental states or processes, should be distinguished from “the extended self,” postulating the extension of a self as the subject of those states and processes. As stated in the above quotation, however, Clark and Chalmers think that the idea of the extended mind implies the thesis of the extended self. Such an implication seems to be taken for granted.

Eric T. Olson (2011), however, argues that the extended-mind thesis does not directly imply the thesis of the extended self. For example, if it is possible that any cognitive processes or states belonging to me can be realized by something that is not part of me, the extended self will not follow from the extended mind. Olson thinks that Descartes’ substance dualism can be regarded as asserting such a position. If Descartes’ theory is true, “I (my mind)” is clearly distinct from my body. It being admitted that my memory is stored partly in my brain, then, the cognitive states belonging to me can definitely exist outside the border of a non-material substance, which is “I (my mind).” Thus, in order to proceed from the extended mind to the extended self, Olson insists that there should be the additional premise that “A being’s mental states can never extend beyond its own boundaries,” and he calls this “mental-state internalism” (484). According to this mental-state internalism, the mental states of a being must be located entirely within it.

Olson argues that mental-state internalism should not be taken for granted; it needs to be justified. Contrary to Olson, I think that mental-state internalism is a view protected by the principle of presumption. In other words, I think it is those who reject this principle who should take the burden of proof, not those who accept it. As long as no one suggests a critical ground for rejecting the it, we should assume that mental-state internalism is true. Olson refers to the scholars like Lynne Rudder Baker and himself as the philosophers who resist mental-state internalism. I believe that they fail to give proper grounds for denying mental-

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state internalism. Even though Olson and Baker offer different rejections, they both adopt a sort of organism-centrism when they characterize a self or an agent.

Let's first take a closer look at Olson's claim. Olson's strategy to show the implausibility of the thesis of the extended self is to infer a seemingly unacceptable conclusion from the thesis of the extended self. We may reconstruct his basic argument as follows. Olson first tries to prove that Otto is not a biological organism (p. 486):

If Otto is an extended self, then he will be expanded or reduced depending on whether or not he uses his notebook. (Otto's notebook is not always a part of Otto. If he stopped using the notebook, then it would not be a part of Otto anymore.)

The biological organism O, which is in fact Otto's body, will not be expanded or reduced based on whether it uses the notebook. (Even if the notebook is a part of Otto, the notebook cannot be a part of O but would belong to the environment of O.)

Therefore, Otto is not the biological organism O. (Otto  $\neq$  biological organism O.)

Moreover, since Otto has the modal property *having a notebook as a part at some time*, while the organism O could not have such a property, Olson draws the stronger conclusion that Otto is essentially not an organism, nor is he contingently or even temporarily an organism. Generalizing this, he draws the conclusion that anyone who possibly has external mental states, even at times when all of his or her mental states are internal, is not an organism. This is because an organism cannot have such a modal property. In a nutshell, every being capable of having an extended self is not an organism.

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This may seem a very radical contention, namely, to argue that any mental being who can have an extended self as Otto can is not an organism. However, if we reflect further, then we see that, contrary to Olson's intention, this is the ultimate implication of the extended-mind thesis and the contention is not as extreme as it initially looks. The sentence denying the identity between Otto and the organism O implies that different conditions of persistence or of identity should be used in individualizing them; it does not imply, however, that Otto and the organism O are separate beings. For example, Otto can be individualized in terms of having a first-person perspective or of having the capacity or responsibility for his actions; by contrast, the organism O will be individualized through its biological composition or functions. This is compatible with the fact that Otto is extensionally identical with the organism O at some point before he uses his notebook. What Olson intends to say via the above sentence (3) can be formalized as the following:  $\sim\forall F(F_{\text{Otto}} \leftrightarrow F_O)$ . This is logically equivalent to the formula  $\exists F\sim(F_{\text{Otto}} \leftrightarrow F_O)$ , and it claims that there is some property that Otto has but the organism O does not. If we understand sentence (3) in this way, it cannot be any threat to the thesis of the extended self.

However, Olson seems to understand this sentence as follows:  $\forall F\sim(F_{\text{Otto}} \leftrightarrow F_O)$ . Based on this, he develops additional criticism of the thesis of the extended self. One of the critiques is, as he calls it, the problem of too many thinkers. We do not deny that a normal, matured human organism, which is identical with our body, is capable of thinking. According to Olson, however, if we admit that "I" as an extended self and my physical body (an organism) are different and that the organism can be capable of thinking, then there will be two beings who can think and write this paper. As it were, there are two thinkers where there should be only a single thinker: one is "I" as a person, not an organism; the other is an organism distinguished from the person. This conclusion is unwarranted because, as noted earlier, Olson misunderstands sentence (3), which is the negation of identity. As noted earlier, what sentence (3) says is no more or less than that the individuation or identity condition of a self (or person) as the subject of thinking is different from the individuation or

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identity of an organism. The relationship between Otto and the organism O, as it were, is the one between a whole and its parts, the relation of *constitution*. A lump of bronze constitutes a statue made of bronze, but the relation of constitution is not the same as the relation of identity. A bronze statue has a certain shape at a certain point. At that point, the lump of bronze has the same shape as the statue. At this moment, are there two different objects which have the exact same shape? Olson would seem to think so. I disagree. On my view, there are simply two different criteria to individuate an object, from which, the existence of two numerically different objects does not follow.

### **III.**

In comparison with Olson's view, Baker's is much more moderate. In a certain respect, the conflict between the extended-self thesis and Baker's position is more a linguistic dispute than a substantial difference. First, let us examine what Baker's argument against the extended self is about. The key point of Baker's argument centers on the conception of a person (a self). Baker (2009) states that a person or a self is an agent with an integrated body or an enduring subject of experiences. This person is a material being constituted by a body (organism). A person and a body (organism) have different persistence conditions, such that they are not in the relation of identity. A person can persist as itself so long as it maintains a first-person perspective, which amounts to having the ability for thinking reflectively about itself. By contrast, an organism has a third-person-persistence condition in that it persists insofar as it maintains certain biological functions. Therefore, a person is not an intrinsically biological being; an organism, by contrast, is biological in itself. If an organism has a first-person perspective, then it can become a person. The combination "organism with a first-person perspective" is a contingent relation emerging from a long history of evolution. The relation between a person and a first-person perspective, by contrast, is essential.

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According to Baker, the relation between a first-person-perspective person and an organism is that of constitution, and their combination is contingent, so a person can have non-organic bionic components as parts that constitute it at the sub-personal level. Non-biological components can also play a critical role in the cognitive processes undergone on the sub-personal level. Considering the tendency for the line between human organisms and machines to blur as technology develops, Baker does not exclude the possibility that a person may one day in the future be constituted by an integrated body consisting of an organism and various prosthetic devices or by a nonorganic body consisting purely of artificial organs and prostheses. This means that non-organic, artificial devices may be material vehicles for the mental states of a person. Furthermore, Baker agrees with vehicle externalism, arguing that a person can be extended cognitively. For example, Otto can have mental states or processes implemented by non-biological vehicles like a notebook. Therefore, she entirely agrees with the extended mind thesis.

What Baker disagrees with is the move from the extended mind to the extended self. She concurs that there is an integrated cognitive system including Otto and his notebook as parts. But even though she thinks this, she holds that Otto cannot become an extended self, expanded to include his notebook as part of himself. According to Baker, Otto as a self (or person) is simply not a cognitive system. Otto as a person is a concrete particular with a first-person perspective, constituted by his body. The coupling of Otto and his notebook or his body and his notebook, however, cannot constitute anything; no concrete particular is denoted by "Otto and his notebook." In that respect, Otto has ontological priority over the integrated system (Otto-cum-notebook).

Baker thinks that accepting the extended mind does not commit one to the claim that a self as a persistent person is also extended; the only cognitive subject is just Otto constituted by his body. In other words, Baker thinks that a person is not only constituted by a body but also spatially congruent with the constituting body; a person does not extend beyond the body. Of course, organic bodies can gradually turn into artificial ones through the integration of organic

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parts and machines. The material basis constituting a person can be altered; however, a person will continue being identical only as far as a first-person perspective is sustained. She also believes that the change of such a material basis would not extend the “I” as a persistent person (agent, self) into the environment. As a person, I am an agent and the subject of experience, not simply an integrated cognitive system or one of the constitutive components of it. In addition, an extended self beyond its body does not exist. In a nutshell, what Baker contends is that the skin of an organism is not a boundary for its cognitive vehicles, but it is one for a person constituted by a body.

I characterized both Baker’s and Olson’s views as a sort of organism centrism. To be more precise, Baker’s view is more a body centrism about the location of a self. That is, the location of a self is confined to its body, which constitutes a person.<sup>1</sup> What is Baker’s argument to show that the location of a person is confined to the body? It is not clearly stated in her paper, but she seems to think that only a body is a boundary in terms of which a first-person perspective can be talked about meaningfully. According to her, a person exists as long as a first-person perspective is maintained. The minimum material basis implementing a first-person perspective is a person’s body, whether organic or artificial. When the body that constitutes me no longer exists, “I” cannot exist anymore, either. For this reason, she seems to think that a body is the physical boundary for its self.

Baker’s contention that the boundary for a self as an agent is demarcated in terms of its body, the physical basis of the self, is in good accordance with our ordinary intuition for our current social practices, such as the subject of legal liability. However, as Kurzweil holds, if mind uploading becomes possible—that is, if a human’s self can exist as a sort of disembodied informational structure—

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<sup>1</sup> According to Baker, bionic-devices permanently integrated to my body may constitute parts of me. Artificial bionic-devices can be parts of a person’s body only if the following conditions are met: (a) it is causally integrated with the other parts that maintain the functioning of the body, and (b) it is permanently in place either inside the skin or attached to the skin on the outside (pp. 654-55).

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what would we think of it? A self as an informational being may exist not as permanently combined with a particular body but as changing its physical body freely as occasion demands. Or several different selves may share a common physical foundation, which is not divided separately. If such is the case—that is, if our ways of existence are fundamentally altered—what would be the consequence? Would such a situation mean the end of selves (persons)?

In reality, even though they are not so extreme, we already encounter various phenomena that are at odds with the notion of selves based on organic bodies. For example, in hyperspace, such as the Internet at large or Social Network Services (SNS) more narrowly, we may emotionally bond with and get social recognition from others, not via physical contacts but through online activities only. Furthermore, in hyperspace, it is possible to have multiple personalities, each an “I” with very different sexual, political, and/or social identities from the ones we have in the offline world. Thanks to these electronic communities, there are new types of communication, contacts, and presence; and other selves have emerged that are fitted to these highly different conditions, limitations, and possibilities. In addition, via texting and online-chatting, we are constantly “contacting” people being or living far away. At the moment, we exist not only where we are physically located, but we are also “present” in some sense where we are connected remotely through an electronic network. For the time being, this “tele-presence” is implemented only by using some restricted, limited sensory modalities, such as in video conferences, voice chatting, or texting; in the future, however, tele-presence in the form of an alternative body, like a physical avatar, may very well become prevalent.

What are the implications of such phenomena on the notions of self or person? Baker focuses on the minimum physical foundation for a person to be sustained with a first-person perspective. When Clark and Chalmers talk about the extended self, I think that they would not deny the role of a physical body as the minimum material foundation for the *persistence* of a self with a first-person perspective. Their focus, however, is on what the physical foundations for the *personal characteristics* of a self are, which are identified in terms of what we

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do, what we are capable of, who and what we think we are, what personality we have, and what we express about ourselves. The main point of the extended-self thesis is that my nature or various characteristics that I have as a person are not determined or limited by the minimum physical foundations for sustaining a first-person self; the vehicles of these traits are extended beyond the boundaries of my physical body. Thus, the significance of the extended-self thesis lies in revealing the deficiency of Baker's notion of the self, which is confined to a physical body, in its power to explain or understand the new phenomena emerging from the development of communication and scientific technology.

#### **IV.**

In that respect, the thesis of the extended self does not just extend boundaries for the self but tends toward overthrowing notions of self and person as we have traditionally conceived them. In an orthodox view, a self is equated with the subject of unitary conscious experience, and this self is set against the external world. This reflects the Cartesian conception of self as a *res cogitans*, which controls my body and my will and makes plans and decisions. This is also the place in which my beliefs, memories, values, and personality reside. Most contemporary philosophers do not accept such a conception of self or non-substantial soul as Descartes did. Nevertheless, many philosophers still believe that there must be some physical center which takes over the role of Descartes' posited self. They still ascribe conscious thoughts and mental activities to this thing-like self, and maintain a substantial notion of self, according to which a self has shape and occupies location. Since Baker conceives of a self as being intimately combined with its body, she also seems to belong to this tradition in which a self is closely affiliated with some physical center.

The extended-self thesis challenges this conception of self, suggesting that the notion of self belongs to a wholly different category from that of substance. According to Clark, the notion of "self" indicates a flexible and open system including non-biological, external devices as its parts. He holds that the

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characteristics making us essentially human as we are now are those that collaborate with external, non-biological devices and resources and that are willing to adjust our activities to them in order to find a better solution for the problems of survival and reproduction. In that respect, our selves cannot be something internal confined to our bodies or brains. Human selves are a system of reasoning, inference, and action situated across the boundaries between biological brains and non-biological circuits; they can by no means be restricted within boundaries like biological skin or skull. Even though the symbiosis among humans, devices (technology), and the environment is constructed and defined by human beings, it also, at the same time, constrains or redefines our potentials at the fundamental level. As a result, human beings have become a sort of hybrid being that reveals its full identity only as a combination of biological brains, bodies, intelligent devices, and technology.

However, the self we discuss here is no longer a substantial thing. The self is now a cluster of various processes and activities going along under the name of “self”; the notion of the enduring subject of experience is substituted by the notion of “narrative self,” which is constructed of various interactions happening at the cognitive mechanism. In “The Origins of Selves” (1989), Daniel Dennett finds the uniqueness of human beings distinguished from other beings such as animals in their ability to represent themselves through language. In the case of other animals, the boundaries between self and external world are organized by skin (as in tiger), shell (as in lobster), or colony (as in ants). Meanwhile, humans create boundaries with stories about themselves. Spiders protect, control, and define themselves by weaving webs, and beavers by building dams. Unlike them, however, we humans organize the boundaries between ourselves and the external world by making stories. As it were, we are protecting, controlling, and defining ourselves by narrating stories continuously to ourselves or others about whom or what we are:

And just as spiders don't have to think, consciously and deliberately, about how to spin their webs, and just as

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beavers, unlike professional human engineers, do not consciously and deliberately plan the structures they build, we (unlike professional human story-tellers) do not consciously and deliberately figure out what narratives to tell and how to tell them. Our tales are spun, but for the most part we don't spin them; they spin us. Our human consciousness, and our narrative selfhood, is their product, not their source. These strings or streams of narrative issue forth *as if* from a single source—not just in the obvious physical sense of flowing from just one mouth, or one pencil or pen, but in a more subtle sense: their effect on any audience or reader is to encourage them to (try to) posit a unified agent whose words they are, about whom they are: in short, to posit what I call a *center of narrative gravity*. (Dennett, 1989, p. 169)

For Dennett, in short, a self is the center of narrative gravity as a sort of theoretical fiction constructed out of a variety of stories that constitute the chronicle of a certain living body, a self that provides unity and coherence to the stories. What the extended-self thesis is trying to say can be more properly understood via Dennett's notion of the narrative self.

As stated above, Chalmers asserts that his iPhone is a part of himself. However, if an iPhone is a proper part of him, constituting his mental processes, then the processes producing and controlling his behavior would consist of states scattered across the boundaries from his brain or skin reaching to the external object called "iPhone." If such is this case, where is his self located? In what state or in what shape is it? Does it exist as distributed as his mental processes do? Does his self literally exist as a physical combination of his body (or brain) and iPhone? If so, when he leaves iPhone in the bedroom, does he exist in distributed states both in the living room where his body is located and in the bedroom where his iPhone is located? We may feel a bit perplexed by these

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questions even before we try to answer them. This is not because the questions are difficult, but because we cannot be so sure whether the questions are the right ones to ask.

The proponents of the thesis of the extended self consider such questions as wrong queries arising from a category mistake that places the notion of self in the wrong conceptual category. That is, these questions arise from a Cartesian legacy that regards the self as a sort of thing having a location and form. The notion of narrative self, avoiding these puzzling questions, provides the theoretical basis on which self can be characterized through the symbiosis of humans, tools, and the environment. According to this notion of narrative self, self is not a material thing to which our various mental characteristics are ascribed, or a place in which our mental activities are occurring. The concept of the extended self as a narrative self does not identify the self with a physical center of unitary consciousness that is composed by all of our thoughts, but urges us to liken it to the center of a narrative binding diverse stories about ourselves, told by ourselves and others, into a coherent story. The extended self is a sort of thread that runs through the tasks we carry out, the goals or plans we try to accomplish, and the responsibilities we take on; this cannot be a center of cognitive processes that occupies a space. Clark says:

I think of myself not just as a physical presence but as a certain set of ongoing goals, projects, and commitments: to write a new paper, to be a good husband, to better understand the nature of persons, and so on. These goals and projects are not static, nor are they arbitrarily changeable. I recognize myself, over my lifetime, in part by keeping track of this flow of projects and commitments. Others, likewise, will often recognize me as a unique individual, not (or not only) by recognizing my physical shape and form but by recognizing some distinctive nexus of projects and activities. (2003, p. 132)

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Such a narrative self is the self confirmed in our own and others' mutual story. That is, this is a self made up of what we and others think about our goals, projects, abilities, and potential. If such a narrative self is one way of defining our own selves, the narrative self of the digital age will be a collection of stories made by a sort of bio-techno hybrid consisting of our brains and the intelligent environment we depend upon.

Through the advent of an intelligent environment, there would no doubt be a great change in our goals and projects, our abilities, and our potential. For example, even in our present day, when we want to solve a problem, we rely on various external tools. As I am writing this paper, I am using various books and articles, memos, electronic files, software, and search engines. The engine that actually solves a problem is therefore not just my brain but the matrix that includes various instruments offering such technical assistance. According to the notion of narrative self, these instrumental matrices are important components of my stories or activities, such that these become prominent parts of me to define who and what I am and what I am capable of.

Against this claim, some may offer the critique that a narrative self and the extended self are merely exaggerated rhetorical expressions used by technophiles, for our brain ultimately exerts the authority to command, and devices like smartphones remain passive, awaiting our direction. Dennett (1984) has argued, "I am the sum total of the parts I control directly," contending that control is the ultimate criterion (p. 82). The brain appears to control my behavior and choices in asymmetrical ways that cannot be done by pens, paper, computers, or smartphones. If control is the ultimate standard by which to define a self, shouldn't we say that our selves are biological brains or bodies in the traditional way instead of the hybrid of life and technology?

This point sounds relatively reasonable when the roles of devices clearly remain passive, as in using paper and pencils to calculate. However, as indicated by the advent of current state-of-art digital technology, if the tools or the environment get more intelligent, our brains will, more and more, delegate to the intelligent environment the burden of many cognitive processes related to

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controlling our behavior. For example, think about an e-book store like *Amazon*. Since hundreds of new books are published and uploaded to its database every day, it is almost impossible to look into the entire inventory of books stored in *Amazon* no matter how much time we invest in checking it. However, *Amazon* applies an algorithm that analyzes patterns of browsing its website or of my previous purchasing behavior, compares my patterns with other consumers who have patterns similar to mine, and then suggests books that I may be interested in. In many cases, instead of searching every book in the prodigious databases, I often purchase the books that look interesting from the list that *Amazon* suggests. In this case, where does the power of controlling my choices really come from? In such a case, since my biological brain is harmoniously working with the intelligent environment in a seamless way, it is not easy to distinguish where my intervention to choose and command begins. The more these technologies are developed, the harder it will be to discern the boundaries or determine the factors that produce my behavior.

Clark criticizes invoking the notion of control in an attempt to reinstate the biological brain in its post as a self. He claims that such an attempt would understand the notion of control in a very restricted and strong sense, such that it would shrink the self into something extremely meager, regarding the intelligent environment as a mere external environment, so that:

It would be as someone tried to argue that the “real me” excludes all those nonconscious neural activities on which I so constantly depend relegating all this to a mere smart inner environment. . . . The vision of the mind and self that remains following this exercise in cognitive amputation is thin indeed! . . . The intelligent system that now confronts the wider world is biological-you-plus-the-software-agents. These external bundles of code are contributing as do the various nonconscious cognitive mechanism active in your own brain. They are constantly

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at work, contributing to your emerging psychological profile. You finally count as “using” the software agents only in the same attenuated and ultimately paradoxical way, for example, that you count as “using” your posterior parietal cortex. (pp. 30-31)

However, because the final decision seems to come from our *conscious* judgments, isn't it possible to say that the brain is still the center of self? In *Elbow Room*, Dennett provides a way to respond to such a rebuttal by pointing out that many of our cognitive activities take place in the sub-personal processes. He claims that the roles of conscious mind on the personal level are just those of the manager who sets a goal and creates and maintains the conditions in which the component members may contribute to accomplish the goal, but the conscious mind does not exert any privileged control over them. The source of trouble here is the very idea that diverse neurological or non-neurological processes require a privileged user who enjoys a perspective to access and control them. If we limit the boundary of a self within what makes the ultimate decisions, shouldn't a self be identified with frontal lobes? Or if any part of the brain does not have the authority for final decisions, then have the mind and self simply disappeared?

According to Clark, different neural circuits of the brain provide different capacities, and all contribute in different ways to our sense of self, of where we are, of what we can do, and to decision-making and choice. Furthermore, non-biological elements outside our body offer us the possibility of having much more capability than the biological brain alone is provided with; as a result, they provide still further capabilities and contribute in additional ways to our sense of who we are, where we are, what we can do, and how we make decisions and choices. No single process within this complex matrix thinks intrinsically by itself or has an ultimate controlling power, such that any of it can be “the seat of a self.” What makes a self, an individual person, is shifting coalitions consisting of biological circuits and tools. Therefore, Clark says, we are “soft selves” who

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are “continuously open to change and driven to leak through the confines of skin and skull, annexing more and more nonbiological elements as aspects of the machinery of mind itself” (p. 137)

Let me summarize what I have done in this paper. According to mental-state internalism, a being’s mental states can never extend beyond its own boundaries, but according to the extended-mind thesis, our mental states and processes can extend beyond our body into the environment. According to the latter if and when mental states and processes extend beyond our skin, we, as the subjects of such states, also extend beyond our skin. This is the thesis of the extended self. In order to show the plausibility of this thesis, I examined the objections of Eric T. Olson and Lynne Rudder Baker and tried to elucidate the notion of extended-self in terms of “narrative self.” The extended-self thesis, thus understood, challenges the traditional conception of self, which views a self as a sort of substantial thing that possesses our various mental activities or characteristics. According to the conception of narrative self, a self is understood as the center of narrative gravity for the stories told both to ourselves and to others, and told both by ourselves and others, consisting of a certain set of ongoing goals, projects, and commitments.

Why is it important to have such a notion of extended self? I believe that the scientific technologies of today, such as digital technology and bioengineering, are technologies that redefine and redesign ‘human being’ itself. As we converge more with digital tools and prosthetic devices, the boundary between the self and tools as traditionally conceived cannot remain intact. I predict this will inevitably force a radical change in the way we understand the concept of agency and selfhood. Thus, the convergence of human beings and state of the art technology currently in progress is not simply about the development of technology; it concerns a fundamental question about the human being. It will have various implications for our current cultural, moral, and political practices. For example, when we want to hold someone morally or politically responsible for a consequence, who should we turn to? Would the subject of responsibility be the ‘individual’ who is confined to the biological

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body? Or is it the hybrid fused with the environment? Is it a coherent idea at all to hold the hybrid responsible? Or is the awkwardness we feel with such an idea just a legacy of the traditional conception of self? Answering these questions would require us to do more develop and elaborate the notion of extended self.<sup>2</sup>

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