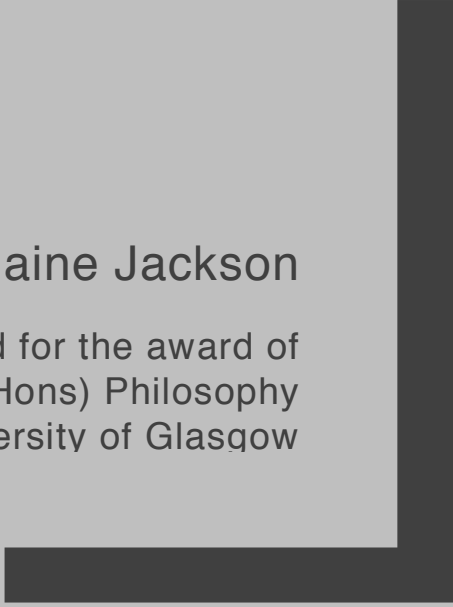


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# A CHALLENGE TO THE EXTENDED MIND HYPOTHESIS

Elaine Jackson

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University of Glasgow



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## Abstract

The extended mind hypothesis (EMH) has been a major focus of debate since its publication in 1998, prompting interest from proponents and exponents alike. At the heart of the paper is the aim of understanding mental phenomena, specifically, what constitutes a mental state. To fully understand EMH it is crucial to appreciate the distinction between our mental states. Firstly, we have mental states that derive from our experiences, these are considered conscious states. They contain feelings or emotions, for example, falling in love, having a pain or being moved by a piece of music. This type of mental state has the feature of phenomenology, a particular character or quality, for example, there is something it is like to see a red apple. Secondly, there are non-conscious mental states that occur without our knowledge of them or indeed we perform actions without consciously thinking about it. These types of mental states possess intentionality meaning that they are about something, for example, I believe that Oswald shot Kennedy or that I am scared of the dark. It is with this clear distinction between conscious and unconscious mental states defined that we can begin to understand the argument presented by Clark and Chalmers.

## Introduction

Following Chalmers and Clark's seminal paper, *'The extended mind'*, it is argued that a person's mind and cognitive processes are not confined to the bounds of brain, skull or even bodies, but in fact extend into the world. The extended mind hypothesis (EMH) further claims that there are some external objects in the world that function as a part of the mind when utilised in the right way. I aim to present a challenge to this hypothesis and argue that EMH does not successfully prove that external objects can be coupled with our cognitive processes, thus becoming an intrinsic feature of our cognitive system as the mind itself. I argue that firstly, Clark and Chalmers fail to provide a decisive enough response to the objection of two-step belief in relation to Otto's notebook entries, and secondly, that EMH fails to provide a sufficient account of constitution between the mental and the

externally coupled object. The first two sections of this paper will provide an exposition of the extended mind hypothesis as presented by Clark and Chalmers. Sections three and four will describe the two objections that are my focus against EMH and the possible responses offered by way of rebuttal. The final section will conclude with the analysis that Clark and Chalmers fail to provide a sufficient account of what constitutes a mental state extending beyond the mind. The parity principle is claimed to account for the problem of non-derived content discussed in the previous section, however, I argue that this claim falls short to adequately account for the internal nature of a mental state, thus rendering EMH unsuccessful in its attempt to prove the extension of the mind into the external world.

## Extended Cognition

The thesis of extended cognition (EC) is a form of situated cognition which claims that our cognitive systems can extend beyond the limits of the body. Although distinct, this theory is related to embodied cognition, which helps to provide a foundation of understanding for EMH (Wilson, Foglia, 2017). Arguably, when we gesture we are not simply expressing thoughts, we are actively utilising this bodily feature in the process of thinking, for example, we may enlist the use of our fingers when counting in order to achieve the desired outcome (Goldin-Meadow, Beilock, 2011, 2.3). The body is not a necessary feature during this cognitive process, however, the brain recruits parts of our body to assist in this process. We are familiar with the notion of an extended body: the use of prosthetic limbs and the use of guide dogs or walking canes for the blind. It is plausible to accept that the mind can extend to the body in this way, then so too can the mind extend to the world.

To appreciate EC, Clark and Chalmers begin by asking us to consider three different scenarios of people playing the game, Tetris:

Player 1 - sits before a computer screen and is asked to mentally rotate the shapes on the screen, in order to determine where they fit within the game.

Player 2 - sits before the computer screen and is asked to physically rotate the shapes on the screen, by pushing the rotate button on the system.

Player 3 - sits before a computer screen in the future, equipped with the benefit of a neural implant. The implant can rotate the shapes as quickly as the computer in the previous example.

Clark and Chalmers use the example of a computer game to argue that we use objects outside of the head to carry out the same cognitive processing as when we rely only on our internal processing (Clark, Chalmers, 1998, 7). For example, my son Coll who suffers from Asperger's syndrome uses a fidget ribbon regularly to focus and improve concentration at school or other similar situations, where he needs to keep his hands busy in order to listen and comprehend the information being discussed. This would provide a similar example to the Tetris players, who utilise external tools to enable the cognitive process involved in moving the shapes around the screen, whereas Coll uses a sensory stimulus to enable and assist in his cognitive function, thus constituting a command to a calmer disposition.

Although each of the above cases are different, Clark and Chalmers attempt to show that each of these examples are equal in terms of cognitive process. Player 1 and player 2 seem intuitively different, for one is clearly performed mentally where the other is not. Player 3 is much more difficult to assign mentality to, for it would appear that since the neural implant is located within the brain, that this example should be regarded as mental. However, surely if we are to regard player 3 as a mentally performed process, then so too should we assign this classification to player 2, for both examples possess the same form of computational process, albeit one is performed outside of the head. Clark and Chalmers claim that by drawing a distinction in these three cases purely on the basis that the

rotation of shapes was done by physical manipulation, is not a justified reason to exclude it as a cognitive process.

Clark and Chalmers at this stage in the paper are not claiming that mental states can extend into the world, they are merely suggesting that when we undertake a problem-solving exercise, we sometimes perform this task entirely in our minds, however, there are times that we regularly utilise external tools to solve a problem “the general tendency of human reasoners to lean heavily on environmental support” (Clark, Chalmers, 1998, 8). One example given in support of this claim is the use of a pen and paper to solve a long-multiplication problem. They posit that since many of our cognitive processes are consigned to “manipulations of external media” (Clark, Chalmers, 1998, 8), then there is a significant possibility that our minds can extend into the world. The claim then, is that since we assign ‘epistemic credit’ to the internal processes in examples 1 and 3, then we also need to credit the computational screen activity in example 2 as a part of the cognitive process. To do otherwise simply because the process happens out-with the body would ultimately beg the question that is at the heart of the issue (Clark, Chalmers, 1998, 8). Section 2 is concluded with the introduction of the ‘Parity Principle’ that enables a claim of constitution between internal processes and external manipulations.

## Active Externalism

Active externalism as posited by Clark and Chalmers is the notion that external factors play a participatory part in constituting and influencing mental processes (Lau, Deutsch, 2016). The Parity Principle claims that, if an activity that utilises external factors contribute to the completion of a cognitive process, in such a manner that were it completed entirely in the mind it would be considered a part of our cognitive system, then the activity conducted externally should also be deemed a part of our cognitive processes.

“If, as we confront some task, a part of the world functions as a process which, were it done in the head, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world is (so we claim) part of the cognitive process. Cognitive processes ain't (all) in the head!” (Clark, Chalmers, 1998, 8).

This principle rests on the foundations of functionalism, where functionalism claims that mental states are defined in terms of their causal roles. An important factor of the parity principle is that the location of a process is irrelevant, whether a process is carried out within the bounds of the head or whether it is done so in the external environment does not matter, it should be considered in equal measure and regarded as a cognitive process or part of a cognitive process (Menary, 2010, 5). Therefore, we simply can't insist by definition that the mind is only something that can exist in the bounds of skull and skin. If the mind is limited to bodily processes, then we must provide some distinction between bodily processes and processes in the external environment. Clark and Chalmers set out their view that active externalism offers a ‘more natural explanation of all sorts of actions’ supporting this claim with areas of study in cognitive science (Clark, Chalmers, 1998, 9). We are provided with a further example of this sort of cognitive ‘coupled system’ with a reference to Scrabble tiles.

“Scrabble, for example, as the outcome of an extended cognitive process involving the rearrangement of tiles on my tray. Of course, one could always try to explain my action in terms of internal processes and a long series of ‘inputs’ and ‘actions’, but this explanation would be needlessly complex. If an isomorphic process were going on in the head, we would feel no urge to characterize it in this cumbersome way. In a very real sense, the rearrangement of tiles on the tray is not part of action; it is part of thought”

(Clark, Chalmers, 1998, 9-10)

For Clark and Chalmers these forms of coupled systems constitute a valid cognitive process, for although different in composition from a biological internal process, there is a parity in the functional role that this system plays. They point out that this coupling does not imply extension of consciousness as some may resist, for not all cognitive processes are conscious, this aspect is discussed earlier, and it is a distinction that Clark and Chalmers are keen to make. They are explicit in stating that consciousness is an internal feature and simply because an external process is not similarly internal, does not eliminate it from being considered a cognitive process in an extended sense (Clark, Chalmers, 1998, 10). Therefore, we can progress from here with the understanding that should an external object be coupled in the right sort of way with our internal processes, in that it functions in a similar way as it would if processed internally, then this coupled system constitutes an extended cognitive process. This does not mean that the external object becomes a part of the mind, but rather, our mental states and parts of the world can be joined together in this coupled cognitive system.

## **The Extended Mind**

The extended mind hypothesis claims that an individual's mind, as well as their cognitive processes, are not limited to the boundaries of skin and bone, but actively extend into the world utilising external objects as extensions of the mind. Clark and Chalmers, therefore, insist that these external objects should be regarded with equal measure to internal cognitive processes in obtaining knowledge. Active externalism according to Clark and Chalmers is not a mere tool that assists the individual in obtaining knowledge, it is an active part of the cognitive process "In these cases, the human organism is linked with an external entity in a two-way interaction, creating a coupled system that can be seen as a cognitive system in its own right" (Clark, Chalmers, 1998, 8). The coupled system constitutes a cognitive system. It is not simply that the external features, to which the organism is interactively



linked, have a causal influence on the cognitive processing of the organism; rather, the interactive link is the cognitive processing. Therefore, active externalism in conjunction with the parity principle and a properly coupled systems provide support to the theory of extended cognition being a constitutive thesis, not a merely causal one (Menary, 2010, 5).

Clark and Chalmers develop their argument for the extended mind with a comparison of memory retrieval that they hold to be of parallel example. Using the characters Otto and Inga they attempt to show that beliefs being non-conscious mental states can and do extend into the world. Otto suffers from Alzheimer's disease and as such he has difficulty retrieving biological memory. Otto uses a notebook as a constant companion to access his stored memories, and indeed to record new information as he obtains it. Otto learns of an exhibit taking place at the museum of modern art and wishes to attend. Otto proceeds to look in his notebook for the location of the museum, which correctly informs him that it is situated on 53rd Street and continues on his journey to view the exhibit. Inga does not have a degenerative disease and her biological memory operates and functions in a normal manner. She recalls that the museum is located on 53rd Street, this is a belief formed or held through introspection (Clark, Chalmers, 1998, 12-13).

Clark and Chalmers claim that in both of these cases, the retrieval of memory is analogous when we consider the three aspects discussed in the previous section. In Otto's case, he already held this belief of the museum's location before he referred to his notebook. For Clark and Chalmers, Otto's consultation of the notebook is parallel to Inga's use of introspection. Thus, in the case of Otto, it can be determined that the use of the notebook is a plausible example of a coupled cognitive system. Otherwise, if it is argued that in the case of Otto there is no cognitive process involved, then there has to be a significant difference shown between these two cases (Clark, Chalmers, 1998, 14-15). Clark and Chalmers ask that we accept Otto already held this belief, rather than the unnecessarily complex alternative that no belief was held until confirmed via the notebook. The challenge for exponents of

EMH is to provide some distinction in which Otto's notebook and Inga's biological memory are not functionally alike. For Clark and Chalmers, Otto's notebook entry and Inga's belief are equivalent in functionality, therefore, they represent the same type of mental state (Clark, Chalmers, 1998, 15). Otto already knew that the museum of modern art was located on 53rd Street before he consulted his notebook, this claim suggests that the notebook literally contains Otto's beliefs.

Clark and Chalmers anticipate several objections that may be levelled against their theory and continue by stating that there are essential criteria required in determining a reliable case of extended mind cognition with regard to an external resource.

(1) That the resource used must be reliable and constantly available.

It may be argued that Inga has more secure and reliable access to her beliefs than Otto does. For example, someone could tamper with or indeed steal Otto's beliefs. Inga's access to her memory has more constancy than Otto's notebook does. Otto is not always in a position to access his notebook. Presumably, he bathes or showers without it and he is constrained in reading its content in poor lighting conditions. Inga, on the other hand, does not have these difficulties and is always in a position to access her memory under normal conditions. I stress the aspect of 'under normal conditions' to prevent the type of response levelled by Rowlands. He claims that Otto and Inga's memory retrieval processes are equal stating "temporary disconnections are not decisive" (Rowlands, 2003, 181), similarly Clark and Chalmers argue that in Inga's case it is not always true that she has this privileged access to her memory, for example, when she is asleep or intoxicated she is equally restricted to her memory store in the way that Otto is (Clark, Chalmers, 1998, 15). They suggest that there is a distinction in a difference of kind and difference of degree between Otto and Inga's beliefs. I agree that these examples show equivalence between Otto and Inga when a normal mental function is impaired, but I disagree with the assumption that these show 'superficial' differences of degree that are insufficient to discount Otto's notebook as a genuine example of belief. I suggest that simply

because we can draw similarities of impairment to both cases, this does not provide enough similarity under normal conditions to constitute equivalence. The argument seems to present a form of slippery slope that has perfectly reasonable premises but a lack of substantiative evidence in support that leads to an unlikely conclusion:

P1) Inga's memory that the museum is on 53rd Street constitutes a belief.

P2) There is no relevant difference in kind between Otto's notebook and Inga's memory.

C) Otto's notebook constitutes a belief.

We could reasonably present an analogous slippery slope argument to counter Clark and Chalmers to show that the appeal to differences in degree, do not do enough to establish EMH:

P1) Eating animal flesh is permitted.

P2) There is no relevant difference in kind between animal flesh and human flesh.

C) Eating human flesh is permitted.

Clark and Chalmers claim that there is no relevant reason that we should not consider Otto's notebook entries constitute beliefs, however, I argue that if EMH is accepted in the above structure, then there is reason enough to question the validity of the argument based on insufficient evidence.

(2) The information contained within the resource should be easily accessible when it is required.

Clark and Chalmers consider an objection that would draw a distinction to an apparent difference between how the beliefs in each case are accessed. Inga has privileged first-hand access to her

memory through introspection, however, Otto uses perception via his notebook to access his memory store. Clark and Chalmers maintain that this difference in access to memory does not alter the quality of Otto's belief, for he does not in fact use perception to access the information. They propose that the information sharing between Otto and his notebook is an extended cognitive system, therefore, not susceptible to the objection from perception (Clark, Chalmers, 1998, 16). To understand this logic, we must remind ourselves of the parity principle, therefore, as this coupled system functions in the way that an equivalent mental state does, then the information sharing does not involve an external entity. Perception involves the mind obtaining information from the external world, however, the EMH does not claim that Otto's notebook is a part of the external world.

In support of this conclusion, we are asked to consider Arnold Schwarzenegger's character in the movie Terminator. The comparison drawn is that there could exist some robotic life-form, that when retrieving information from its memory store, is presented in a visual manner. Although this retrieval appears unusual when recalling memories, it does not diminish the status of the beliefs presented (Clark, Chalmers, 1998, 16). I will expand on this argument in the following section as the first objection against EMH, for now though, I suggest that this analogy does not do enough to counter the objection raised. The information that constitutes Otto's beliefs are a part of his mind not the notebook itself, the specific markings on the page are not his mind, so when he perceives these patterns then surely the written sentences are nothing more than perceptual phenomenology.

### (3) The information when retrieved is automatically endorsed.

This third constraint involves normal biological memory being endorsed automatically, to which Clark and Chalmers maintain that the cases of Otto and Inga are equivalent in all relevant aspects

“Otto's and Inga's cases seem to be on a par: the essential causal dynamics of the two cases mirror each other precisely. We are happy to

explain Inga's action in terms of her occurrent desire to go to the museum and her standing belief that the museum is on 53rd street, and we should be happy to explain Otto's action in the same way” (Clark, Chalmers, 1998, 13).

I do not accept the claim that the processes involved when Otto and Inga retrieve the information about the location of the museum are comparable. In Inga’s case, she desires to see the exhibit on display there and retrieves the information about the museum's location from her memory then simply walks toward the museum. This is a clear case of Inga accessing the relevant ‘standing state’ belief and it immediately converting to an ‘occurrent’ belief. In Otto’s case, he also desires to see the exhibit. He believes that he can find the location of the museum within his notebook. When he retrieves the information from the notebook he proceeds to continue on toward the museum. Otto’s retrieval process does not seem to be equivalent to Inga’s. It appears to me that Otto believes that (a) the location of the museum can be found in his notebook and (b) that the museum is located at 53rd Street. This shows that Otto has two beliefs that lead to him making the journey towards the museum, this clearly is not what happens in the case of Inga. Clark and Chalmers suggest that this reading of the differences between these cases is “one step too many” (Clark, Chalmers, 1998, 13), however, I suggest that this reply is not decisive enough to support their claim of equivalence. It may well be the case that insisting on a two-step belief process is needlessly complicated but surely it is a relevant enough difference to afford it some investigation.

**(4) The information must have been confirmed at some point in the past and it is present within the resource as a consequence of this endorsement.**

Clark and Chalmers seem to be somewhat on the fence regarding this fourth criterion, for they appeal to circumstances of non-conscious perceptual awareness or memory tampering, however, they are explicit that the preceding three are crucial in determining beliefs (Clark, Chalmers, 1998, 17). It may be true that there are instances of subliminal awareness, in music, for example, backmasking is a

technique believed to contain hidden messages. Or in advertising, visual stimuli may be hidden within the content. However, I disagree with the indecision with respect to this criterion solely in relation to coupled systems. It seems that this may be the only condition that prevents the objection of cognitive bloat. Clark and Chalmers do not attempt to address the concern of cognitive bloat, however, without the fourth criterion, this becomes a major concern for their theory.

I regularly use my mobile phone to perform many of my mental functions, such as record diary appointments in my calendar, maintain a telephone directory, direct me to particular locations using applications like google maps and offer culinary preferences dependent on previous internet searches or purchases. If we are to accept the EMH then these instances described would surely constitute as my beliefs. All of these instances would meet the conditions of the criteria 1 to 3 set out by Clark and Chalmers above, the information is reliable and constantly available, it is accessible when required, and the information retrieved from my mobile is automatically endorsed. However, without the crucial fourth condition, where does this access to information end? Would I be entitled to claim that I have beliefs about quantum physics or that I believe I can speak Mandarin? There is a genuine worry about how far the mind can extend. It seems absurd to allow entitlement to any volume of information open to me via the internet for example, when coupled in the right way to constitute extended cognition, therefore, I suggest that this fourth criterion is essential to rebutting the objection of cognitive bloat.

## Objection to equivalence in belief

In support of the EHM, it is asked that we consider the cases of Otto and Inga. Both subjects want to go see the exhibit at the museum of modern art. They access their respective memory stores and form the belief that the museum is located on 53rd Street. The claim is that Otto's belief-forming process is the same type of mental state that is undergone by Inga when she thinks about its location for a

split second and forms her belief. When we compare these cases, it does not seem obvious that these examples are the same at all. In Inga's case, it seems right to say that she held her belief before she thought about its location, her standing belief simply became an occurrent belief when she considered the information internally. In Otto's case it seems correct to suggest he forms a first belief that the location of the museum can be found within his notebook, then he forms a second believe upon perceiving the information, that its location in on 53rd Street.

There is a clear distinction between how I introspectively access my beliefs and how I utilise an external object to retrieve information. When I think about my maiden name or my date of birth, for example, the information is immediately forthcoming as I already know the answer. There is no sense of stages involved in accessing this information, it is clearly without any formal process. In the case of Otto retrieving the address of the museum from his notebook, there is clearly a process involved in obtaining the information required. Firstly, he must look for the information in question, and secondly, once the information has been retrieved, he must approve the validity of the information retrieved. Once both these sequences have been completed Otto is consciously aware of its relevance. These instances of memory retrieval then suggest a clear distinction in that one form is immediately known without any formal process taking place, while the other is hugely dependent on a two-step process of endorsement.

Clark and Chalmers preempt this form of objection and suggest that reading the process undergone by Otto in this way is too complicated and indeed unnecessary

“But if we follow Otto around for a while, we will see how unnatural this way of speaking is. Otto is constantly using his notebook as a matter of course. It is central to his actions in all sorts of contexts, in the same

way that an ordinary memory is central in an ordinary life”

(Clark, Chalmers, 1998, 13).

To understand the point that is at issue here is to see that there are two ways in which Otto can be described in forming a belief. For example, the first version of Otto, (a) description, is as follows:

Otto (a) - Otto hears about the exhibit at the museum and wants to go. He believes that the museum is located on 53rd Street for his memory (notebook) tells him so. After retrieving his belief from memory (notebook) he travels to the museum.

Now consider the process in the case of Inga:

Inga (a) - Inga hears about the exhibit at the museum and wants to go. She believes that the museum is located on 53rd Street for her memory (introspection) tells her so. After retrieving her belief from memory (introspection) she travels to the museum.

Clark and Chalmers insist that this is exactly the process that happens in both cases showing parallel accounts, However, as discussed earlier there is surely a distinction to be drawn in these examples.

Let's consider a second description of the process.

Otto (b) - Otto hears about the exhibit at the museum and wants to go. He believes that the location of the museum is contained within his notebook. He reads the notebook entry and further believes that the museum is located on 53rd Street. After retrieving his 'belief' he travels to the museum.



Inga (b) - Inga hears about the exhibit at the museum and wants to go. She believes that the location of the museum is contained within her memory. She reflects on her memory and further believes that the museum is located on 53rd Street. After retrieving her 'belief' she travels to the museum.

The argument against understanding Otto as Otto (b) seems to miss a crucial point. In Otto's case, it seems as if case (b) is precisely what is going on, whereas in Inga's case the extra step in the process is indeed overly complicated. This is so, for Inga only has one relevant belief, not two. She does not rely on any secondary belief to inform her what the address is, for the address is already a belief that she holds.

We are presented with another example that aims to show that active externalism directly affects the subject's behaviour via properly coupled systems. Otto and Twin-Otto are identical in every aspect; however, Twin-Otto has written in error the address for the museum being located at 51st Street. Both Otto and Twin-Otto travel to their respective locations as a consequence of their beliefs. It is suggested that Otto's notebook contributes to his behaviour, for he actively endorses the information contained within and acts accordingly. Thus, it is central to his behaviour and subsequently constitutive of his mental states (Clark, Chalmers, 1998, 14).

I would respond to this objection with the counter that there is a difference in the process of mental introspection and retrieval of information from an external source. If I were to reflect on my date of birth, the information would be immediately forthcoming as I already have this belief. However, if I had to confirm a telephone number logged on my mobile phone, I would first have to recall logging the contact details, secondly retrieve the information and finally confirm the details before the information becomes known. This makes the distinction between processes entirely different and incomparable. It does not seem clear to me that Clark and Chalmers have presented a strong enough

argument to validate their conclusion. The crucial component of the argument is that Otto believes that the location of the museum is on 53rd Street prior to retrieving the information in his notebook. If it is not sufficiently shown that Otto retrieving the information from his notebook, is, in fact, a genuine example of a belief, then the notebook cannot qualify in constituting a part of his mental state.

### **Objection that coupling does not imply constitute**

Mental states such as our perceptions, desires, beliefs and thoughts have meaning (Pitt, 2018), by this statement I refer to the fact that they are about or are representations of things in and of themselves (Jacob, 2014, 9). Tim Crane presents a compelling objection to the extended mind hypothesis, claiming that our mental states and or beliefs have meaning because of our association with the content. If something possesses a particular kind of content that we have given meaning, then it is only as a result of a mental process that this object obtains content (Crane, 2016, 144-146). For example, a map only bears meaning to us as a result of a mental process giving meaning to the maps features. A written language also only holds meaning as we have given the words content and meaning through our usage of the terms. Returning to a point I made in the previous objection when I think about something like my child's birthday, I do not have to adopt a two-step belief retrieving system like I suggest Otto does. I just think about the subject and I have access to the information without the second step of endorsement. In relation to Crane's objection, it would appear that in Otto's case he only arrives at a belief that contains meaning, through the two-step of retrieval involved. This process is unnecessary in cases of biological memory like Inga's because the information already carries meaning for her.

Clark and Chalmers may rebut this objection with the claim that Otto's notebook entries do contain meaning. The entries would form sentences such as 'The museum of modern art is on 53rd Street'

this is a normal sentence of language that has meaning to anyone able to read English. Therefore, to argue that Otto's notebook only contains meaning once he uses it does not seem plausible (Clark, Chalmers, 1998, 12-13).

The point at issue would not be to deny that normal sentences have meaning, but rather that there is a distinct difference between a notebook and a mental state. The point that is being made is that notebook entries and other such external objects, are mere tools that are used to enable cognitive processes to be conducted perhaps more efficiently (Crane, 2016, 145). These external objects obtain meaning by being used, for example, in Otto's case, he uses this notebook to register information that he knows he will forget. Once this information is accessed again by Otto, it becomes a belief due to the fact that he once knew this information. Otto's notebook, therefore, contains information with derived meaning, whereas in Inga's case, her memory or mental state more precisely, has original or non-derived meaning (Jacob, 2014, 9). This distinction between derived and underived content is also argued by Adams and Aizawa. They posit that the contrast between Otto and Inga means that Otto's notebook does not 'constitute beliefs or memories' (Adams and Aizawa, 2001, 55). They unpack this argument with Clark and Chalmers Tetris example. According to Adams and Aizawa, player 1 who manually rotates the shapes, uses mental representations to identify where the blocks fit within the puzzle, whereas player 2 who presses a rotate button to manipulate the shapes, does not experience any sort of representation derived or otherwise (Adams, Aizawa, 2001, 54-55). My pen, for example, is an external object that does not represent anything, it has no meaning or content, it simply is. Therefore, the objection raised is that the EMH assumes constitution when there is merely an extended coupled system at best (Adams, Aizawa, 2001, 57).

## Conclusion

Having discussed in detail Clark and Chalmers paper in favour of the EMH and offering rebuttals to the objections that they anticipate, I have delivered a clear framework of the issues in the debate between supporters and critics of the theory. I set out with an aim to firstly show that Clark and Chalmers fail to provide a decisive enough response to the objection of a two-step belief. By providing two ways to interpret the process involved in forming beliefs, I have clearly shown that there is a distinct difference in how Inga introspectively accessing her belief, and how Otto comes to form his belief with the aid of an external tool, namely his notebook. Secondly, I set about showing that a coupled system does not necessarily imply constitution. A coupled system may indeed form a type of cognitive system, but it cannot be clearly shown that this coupling leads to constitution of cognition.

The attempt of the extended mind hypothesis put forward by Clark and Chalmers, claiming that the cognitive processes of the mind are not bound by limitations of skin and bone, fail to satisfactorily close the gap between the distinction of internal and external processes of memory. In the case of Otto's notebook, an object is quite simply an external tool that the individual uses to store information, one that can be easily obtained and referred to. The ability of the mind to attach attitudes to content is a result of the consciousness of a mental state, which an object such as a notebook cannot achieve. Despite the compelling nature of the argument raised by Clark and Chalmers I firmly claim that the objects we use to assist us in our daily lives are quite simply that, a functional tool that is applied when we are using our internal cognitive processes.

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