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## **Peirce, Mead, and the Theory of Extended Mind: A Divergent Convergence**

In their pivotal 1998 article “The Extended Mind,” Clark and Chalmers advance the following important claims: 1) there is no line of demarcation between skin and skull and what is outside them; 2) cognitive processes ain’t (all) in the head; 3) there is an active role of the environment in driving cognitive processes; 4) even portable, external devices are part of our beliefs, that is, are to be considered as ‘mental’ states (see the much cited case of Otto’s notebook). In this paper, I will confine myself to a few comments on Clark’s and Chalmer’s article and on some later adjustment of the theory. Clark and Chalmers stress very important issues, in particular: the question of the boundary between what is inside human cognition and what is outside; the question of the localization of thought, and the question of the possible extension of mind.

Yet, I will contend that, although innovative, their position still suffers from a metaphysical prejudice. First, Clark and Chalmers – and the majority of the leading cognitive thinkers who follow them – reason from the standpoint of the privilege of the mind (even though “extended”), never questioning its priority and the occasions of its emergence. Second, they rely on categories such as “localization” and “extension,” which are still the mark, in my opinion, of a Cartesian horizon.

I will try to show that the views of the pragmatists can provide us with a different scenario (different but sympathetic nevertheless with some of Clark’s and Chalmers’s theses). My aim is not to simply compare Peirce,

Mead, and Clark-Chalmers, but to present a theoretical hypothesis on the role of the mind in cognition. For the notion of “Mind” is a recurrent one in contemporary debates, but, as any other notion, it has undergone several modifications of meaning over time. For instance, it might be helpful to briefly remind us that in the *Iliad* the word that is usually translated as “mind” is expressed by terms which refer to the different parts of the body: *phren*, the lungs; *ker*, the heart; *thymos*, the breathing spirit; *noos*, the sharp sight. All these terms refer to externally-induced bodily modifications that force the hero to respond through a series of actions. These are not tied to physical organs as we understand them today, but to cosmic powers of divine origin, capable to dominate and guide men’s life. They are personified forces and powers, codified in the epic poems and their myths. In this view, men feel and reason, choose and move because the breath, the heart beating, and the sight dictate them to do so. The word “mind”, which has its etymological root in *menos*, the impetus that runs through the body and compels to act, develops through the *Odyssey*, Plato, and the Stoics, until it becomes the Latin *mens* in which it is not possible to find any reference to body and physical emotions. Through a long and complex process of semantic transformations, then, the “mind” ends up being localized in the head, “inside the skin and the skull,” where Clark and Chalmers find it.

During the Modern epoch, the priority of alethic and rational knowledge (*manthano*), made possible by the “Cogito,” has led to understand the “mind” as the privileged seat of thoughts, beliefs, sentiments, and self-consciousness. However, it is worth stressing again the fact that for

millennia the idea of something reflexive and internal had been simply unimaginable.

I have advanced these brief philological remarks simply to remind us that we should never forget that the concepts we use, in particular when we speak of epistemology, are not given facts, but the result of a complex genealogy.

The evolutionistic hypothesis of the pragmatists of a progressive and slow change of the “mental” through the development of more or less conscious habits of response to the environment is crucial here. As many admit today, the mind undergoes a progressive biological evolution, not only neural but also bio-social. But we find the same evolution in the common use and meaning of the word “mental” and in the distinction between what is “internal” and what is “external.” There is, then, a process of unlimited semeiosis involving not only the strictly scientific hypothesis, but also our epistemic understanding of what counts as an “internal state.”<sup>MSS 227</sup> In my opinion, the present status of the cognitive sciences do not seem to be able to account for this fact.

Let us go back to the article “The Extended Mind.” “Where does the mind stop and the world begin?”, Chalmers and Clark wonder at the outset. Their response is the proposal of an active externalism, based on the active role of the environment in driving the cognitive processes. There is a general tendency in the human reasoning to lean heavily on environmental supports, starting from pen and paper (I think with my pen, wrote Wittgenstein) up to the iPhone and the tablets. These are not to be simply intended as tools for knowledge and better reasoning, as additions to the faculties of my mind as practical aids; rather, they are literally parts of my

mind's domain, they are *the* mind, as a whole. Let us consider a very clear example and then comment on it in the light of some of Peirce's theses. The fish can be considered as a "swimming device," due to an evolved capacity to couple its swimming behaviors to the pools of external kinetic energy found as swirls, eddies, and vortices in its watery environment. Some of these vortices are naturally built, other are induced by the movements of the fish. "The fish swims by building these externally occurring processes into the very heart of its locomotion routines. The fish and surrounding vortices together constitute a unified and remarkably efficient swimming machine." In a cognitive field, words and external symbols play a role very similar to these vortices.

But what about truly mental states, such as beliefs, desires, and emotions? What about the internal status of the mind? Clark and Chalmers very brilliantly show that there is something like a "mind" where there is something functioning as a cognitive device. "If 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 part of the cognitive process." There can be, then, a coupling, a parity between internal and external, cognition and environment. "If so the mind extends into the world." The mind – to quote another important book by Clark – is supersized.

Following a consideration of parity, any outward loop is a functional part of an extended cognitive machine, of the cognitive circuit. "Such cycles supersize the mind." Trying to oppose a brain-bound model to an extended one, Clark asks if cognitive processes stay neatly in the brain. His response is negative, as we saw, but the question frames the very borders of the

reply: where do these cognitive processes *take place*? They *spread over* anywhere there are cognitive effects. Mind is simply supersized, but its status remains that of a *res extensa*, a size (*situs*) dimension, an horizontal dimension.

In what follows I will comment on these points, by objecting in particular to the following tenets: 1) the mind, although in its augmented version, should be considered anyway the center of irradiation of the cognitive process. In other words, Clark and Chalmers move from the received idea of mind and put forth a conception in which the function and size of the mind are changed, but they never question the allegedly central role that the mind plays in cognition. The mind remains pivotal: only, it is made larger and more elastic. 2) Similarly, the dimensional element is never discussed. The mind is pure extensionality. Something is either *inside* or *outside* of it. It remains necessary to *localize* where the cognitive takes place. These are all unwittingly assumed Cartesian metaphors. Also, 3) the principle of parity is an ultimately dualist principle: the starting point is always the idea of two entities that need to be somewhat coupled, conjoined. put back together.

Let us consider the often quoted example of Otto, the man affected by the Alzheimer disease to whom Clark and Chalmers attribute an experimental “extended mind.” Otto uses a notebook on which he writes the locations of the museum that he wants to visit. Any time he wants to go there, he reads his notes. The notebook plays the role usually played by a biological memory. It functions exactly like the information constituting an ordinary non-occurrent belief; it simply happens that this information lies beyond the skin. In Otto’s case, as in a normal person’s case, that information is

available to consciousness and available to guide action, exactly in the same way in which a belief usually is. And when an external device plays the same role that a belief plays, it can be considered equally “mental.”

Peirce would have remarked that Otto’s notebook has to be considered part of cognition simply because it guides habits of conduct (the habit of walking quietly to the museum). Any thought is a belief, and any belief is a rule of action, or a habit. In Peirce’s view, we leave the domain of cognition and enter that of action. “The essence of the belief is the establishment of a habit, and different beliefs are distinguished by the different modes of action to which they give rise. If beliefs do not differ in this respect, if they appease the same doubt by producing the same rule of action”, then there is no real difference between them. Thought is an action, writes Peirce. The case of Otto and Inga (Otto’s partner who finds in her “head” and not on a notebook the directions to get around) is then paradigmatic. The types of action to which their beliefs lead are similar. They both reach the museum and it is inessential to understand what device enables them to do so. It does not matter whether it is the leading-function of an “inside” state, the belief embedded in memory, or the leading-function of an information coming from “outside”: in both cases Otto and Inga get to the museum. The consequences for pragmatism are the only important feature of epistemic knowledge. The pragmatistic approach makes it possible to have a different perspective on the issue: it focuses first on the effects and practical consequences and only later tackles the problem of meaning in terms of cognition, mind, mental state. Moreover, it applies the pragmatic maxim to the question whether there is a difference between knowing the correct directions by relying on the

mnesic traces in memory and in a notebook. And of course the answer will be negative, because in both cases what is produced is an effective habit of conduct.

Habit is then a key word for all the pragmatists, in particular the classical pragmatists, who were closer to the debate on evolutionism. This word make the traditional dualistic attitude of thinking explode. The habit defines the threshold preceding the distinction between inside and outside, physical and psychical, natural and social. Drawn from the empiricist tradition, it simply indicates a recurrent and efficient pattern of behavior, often unconscious, nourished by the exercises that determine it. Habit is simply the disposition to act in predictable ways under certain conditions. A disposition that is not strictly speaking mental, nor simply practical: a knowing-how that can be extended to the entire physical world because it corresponds to the “tendency to behave in a similar way under similar circumstances in the future.”<sup>1</sup> The meaning of a concept, its Final Logical Interpretant, writes Peirce, is a habit of response. Ex. of the window.

While also Clark and Chalmers make similar points, these points are often implicit and, in my view, not focused enough. Let us consider again the example of the fish: the fish was defined as a swimming device (referring to his know-how, to his habit of behavior). And this capacity to swim was gained by the repetitions of processes naturally occurred or self-induced that were part of the fish conduct along the sea. So, the fish with *its* habits of response *and* its environment, all together, constitute the swimming “substance.” Not the fish plus its behaviors are in question, but the behaviors that make a fish what it is are.

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<sup>1</sup> C.S. Peirce, *Pragmatismo e oltre*, cit. p. 99.

In the last years of '800 Peirce had raised and in part solved many problems that Clark and Chalmers have found at the end of the following century without knowing his lesson. For instance, we read in a 1866 passage text (W1: 515): “Whether there be any such ultimate premises is a difficult question. It amounts, however merely to this; whether the boundary of consciousness is in consciousness or out of it”. What is the nature of a limit? Properly speaking, it belongs neither to one thing nor to the other thing that it distinguishes. The limit between red and blue is neither red nor blue, or, better, it is both red and blue – the distinction between them vanishing at this point (W1: 203-4). Then, according to the cognitivist argument we should say that the limit between the mind and the world, between the skull and my iPhone, vanishes when we start to focus on the boundary within which both are contained, simply because when we speak of the mind and the world we are not talking about two containers nor we should be using spatial metaphors.

This has led Peirce over the years to reject with growing determination a spatial view of consciousness and mind: “A thing may be said to be wherever it acts; but the notion that a particle is absolutely present in one part of space and absolutely absent from all the rest of space is devoid of all foundation” (1890; W5: 79). Similarly, it makes little sense to think of the mind “as a receptacle, which if a thing is in, it ceases to be out of it”. So, and here is Peirce who talks, though I think Clark would have agreed completely: “When a thing is in such relation to the individual mind that that cognizes it; it is *in* the mind; and its being so in the mind will not in the least diminish its external existence” (PEIRCE W2: 471). We should therefore overcome an internalist and nominalist conception of thinking.

“It is much more true that the thoughts of a living writer are in any printed copy of his book than they are in his brain” (PEIRCE CP 7.364). We should say, then, that Peirce’s approach is a non-local and non-spatial view of the mind; rather, it is a temporal doctrine of the mind (“mellonized”, writes Peirce in CP 8.284, from the Greek *mellon*, which could be translated with “oriented towards the future”): the mind will be found where it will produce effects, in terms of awareness and acknowledgment, where it will guide the action, where it will be possible to individuate the *signs* of a cognitive experience. The “mental” is identified with some specific habits of action. “Mind is a sign developing according to the laws of inference” (EP 53). The phenomenal manifestation of a substance *is* the substance itself: there is no mind except where there are “mental” signs and mental habits of cognition and recognition. That is the reason why Otto’s notebook has the same function (phenomenal manifestation) as Inga’s memory.

I want to move now to a different author, George Herbert Mead, not to establish an historical comparison between Clark, Peirce and Mead (which would be however extremely interesting), but to try to show that Mead’s idea of the evolution of mind and intelligence can solve some difficulties present in the cognitivist approach.

In Mead’s opinion, the mind is the result of evolutionary habits of conduct, rather than a biological endowment or the real center of cognitive and linguistic affairs.

Reflective, creative, responsible, self-conscious mind appears as a result of repeated social responses. It belongs to the natural history, to the long run of evolution, of social evolution, and not simply to brain structures. Mind

and intelligence are adaptive results, constituted thanks to the use of linguistic and behavioral practices.

Mead took then the distance from Baldwin and Wundt that in some sense presupposed antecedently existent minds to get the social process under way, and from Watson, who was attentive only to the mechanisms of behavior and not to the genesis of consciousness. His analysis is more convincing. In what he calls conversation of gestures, for example between two dogs engaged in a fight, there are no symbolic meanings and no minds, but just gestures and reciprocal adjustments. To acquire a “mind,” the biological individual must be able to call out in himself the response that his gesture calls out in the other, and to use this response of the other to control his own further conduct. These gestures become significant symbols, evolving especially from the initial vocal gestures. Through their use the individual “takes the role of the other”. Man is essentially a role-taking animal (a habit-taking): the use of socially shared symbols shows that he has finally acquired a mind.

In this sense, mind is simply the name that designates the assumption in behavior of significant symbols. Mind is first and foremost a semiotic mind, Peirce would have said. It amounts to an unlimited semiosis translated into vocal gestures and internalized in thoughts. This is the crucial point. For Mead, mind is “the internalization” within the individual of the social process of communication in which meanings emerge. It is the ability to indicate to one’s self the response that one’s gesture evokes in the others. “Instead of beginning with individual minds and working out to society, Mead starts with an objective social process and works inward through the importation of the social process of communication into the

individual by the medium of the vocal gesture” (Morris xxii). Mind is wholly social, that means truly external. The process goes outward-inward, from the pragmatic acts to the individual thoughts. “Only in terms of gestures as significant symbols is the existence of minds or intelligence possible; for only in terms of gestures which are significant symbols can thinking – which is simply internalized or implicit conversation of the individual with himself by means of such gestures– take place. The internalization in our experience of the external conversation of gestures which we carry on with other individuals in the social process is the essence of thinking” (MSS 47). Mind thus *emerges and evolves*; and the taking of the attitude of the others’ toward one’s self is a constitutive part of its genesis. What is important to underline is that initially the gesture simply means what one is going *to do* about it. It does not mean what one thinks nor any internal emotion. There is an undoubted priority of the act, of which the gesture is just the primordial nucleus. If, as Wundt does, you presuppose the existence of mind at the start, then the origin of minds and the interaction with the other minds and the world remain mysterious. But if you regard the pragmatic process of experience as prior to the existence of minds, then you can easily explain that mind arises through “communication by a conversation of gestures in a social process or context of experience – and not communication through mind” MSS 93.

Let me try now to recap the main points of Mead’s view. Human evolution begins with some acts that determine certain lines of conduct. There is no coupling here between stimulus and response, since the fundamental phenomenon is the pragmatic unity of the act. The real beginning, as Dewey, said, is not the stimulus, but the act. The response is not merely *to*

the stimulus, it is *into* it. The world is definitely “mapped out for us by the responses which are going to take place” (MSS 129). Knowledge is then the constant reconstitution of a circuit (think to the fish example), and not an arrow that goes from inside to outside and the other way around. Language is obviously fundamental in this constitution. “Language as made up of significant symbols is what we mean by mind” (MSS140n).

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Mead’s position is substantially indebted to the evolutionary spirit of his time and in particular to the work of Chauncey Wright, who was the real mediator, so to speak, between Darwin and the Metaphysical Club in Cambridge. The shared idea of an evolutionary mind produced by an often unconscious process of selection applied to the big variations in language, capable to lead to higher levels, conscious and intelligent levels of communication, as already Darwin had intuited, is not strange at all. It would be a case of “new uses of old powers” (C. Wright).

The advantage of my position, Mead writes in MSS 244, is to explain the genesis and development of mind, without presupposing it at the origin of any cognitive function. We may say that it could be better interpreted as a leading function, to use a Jamesian terminology. The human being’s physiological capacity for developing mind or intelligence is a product of the process of biological evolution, but the actual development of mind as an interior endowment is a product of social processes, of the evolution of our interactions with the others.

Yet, the most interesting thought, comes to us from a note of the 29<sup>th</sup> Ch. “In defending a social theory of mind we are defending a functional, as opposed to any form of substantive or entitative, view as to its nature. And

in particular, we are opposing all intracranial or intraepidermal views as to its character and locus. For it follows from our social theory of mind that the field of mind must be co-extensive with the field of the social process of experience and behavior... If mind is socially constituted, then the field or the locus of any given individual mind must extend as far as the social activity or apparatus of social relations which constitutes it extends; and hence that field cannot be bounded by the skin of the individual organism to which it belongs” (MSS223n). 55 years before Clark and Chalmers a very similar path had been already taken by Mead. Mead 371

However, in my opinion, Mead’s position is not so close to Clark’s and Chalmers’s. Let us say, as Peirce said once about Royce, that Mead’s perspective “differs but by a hair-breadth” from the cognitivistic view. In the following concluding remarks, I am going to show in what this slight but crucial difference really lies.

We have just seen how the metaphor of extension is common to both Mead’s social psychology and the extended-mind theory. However, the cognitivists, as Mead would have probably said, presuppose the mind without discussing its emergence; they presuppose what should be explained instead. Moreover, it is sufficiently clear to Mead that there is no “mental” center that progressively crosses the boundaries of its own circumference to include new external parts; rather, “mental states” and self-awareness are the product of habits of response, of gestures that have become significant acts. It is not cognition to get extended. Rather, it is the practice in which we are embedded - which is never only reflexive and individual – that generates new dimensions of meaning, of symbolization, of acknowledgment, that is, a progressive internalization and

mentalization. The cognitivist thesis is completely turned on its head: it is from the outside that we get our material for beliefs, desires, reflections, and consciousness is produced as a repercussion of the processes of social communication. In other words, it is the act, the habit of response, the threshold which is neither red nor blue, as Peirce said, and then it is both red and blue, that fixes gradually the boundaries of the mental and the physical, of the internal and the external.

My suggestion is then to talk not of an extended mind, but rather of an “intensive” mind. Let me explain this terminology. Moving from Mead’s position, it is possible to interpret the processes of mentalization as that process that is constantly in the making and that is the result of an interaction with the environment.

While “extension” is the name for describing the act of going from “inside” something to “outside” that something, “intension” could be the name that evokes the *tension* between two poles that only in their relation are constituted as such.

We have seen that the real point in the discussion of the extended mind theory is to understand what *is inside* the mind and what is *outside*, and where is the *boundary*, threshold, or limit from which something gets expanded, stretched out, spread out (all meanings that can be traced back to the Latin word *ex-tendere*). On the contrary, according to the intensional model just sketched, we have only a habit of response, the result of public and social practices, that gets contracted into the singularity of the action and mirrored by a mental “state.” Following a long tradition going from Nicholas of Cusa to Spinoza, we could speak of a contraction of the world into the finitude of each event. The extension of public thinking – that is,

the sent of the final interpretants, or logical habits – is intensively present in each singular mode of conduct. We could also refer to one of the fathers of philosophy, Heraclitus, who in fragment 45 writes: “You will not find out the limits of the soul when you go, travelling on every road, so deep logos does it have.” According to Bruno Snell’s interpretation, the depth (*bathun*) that Heraclitus attributes to the soul is a total novelty for the archaic culture. In it we find something completely different from the physicality and dimensionality of an organ. “Depth” means the verticality, so to speak, of an experience, not its horizontality. The intensity is the depth of being (Deleuze). From one side, Heraclitus refers to a path to be taken and to the limits of the mind; and so he takes us to the initial theses from which we have started. Yet, what is clear is that the *logos* is interpreted as something deep, intensive. It has no limits, because it does not have physical dimensions. Its quality is the *koinon*, the being common to all (fragment 2). What we see here is the beginning of the idea of the inscription of the social world into the logical mind.

In this way, every concept that is in the mind – every sign – is a point of condensation, of concentration, of intension, of the unlimited practical interactions that characterize every social existence. In other words, the cognitive is the intensive trait of the pragmatic.