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PHILOSOPHY OF MIND, MIND OF PHILOSOPHY

INTRODUCTION

The word "Philosophy" can be used in many ways. We can talk about “the philosophy of design", "philosophy of fashion", "cooking philosophy" and so on; or each of us can refer to our "philosophy" both in a general sense or with regard to a specific field ("my philosophy in the office is never to discuss politics"). This kind of expression is not very harmful, no one would confuse all this with the thought of Aristotle, Kant or Hegel.
With "Philosophy of Mind" the expression seems to deliberately recall a contiguity with the history of philosophy in the strict academical sense. A simple reading of some of the introductions to "Philosophy of Mind" books or articles is enough to realize that here we face a discipline that understands itself as integral part of the field of philosophy. But with the only and essential difference that almost all Philosophers of Mind consider as prehistoric anything produced before the nineteenth century, while seeing their own works as scientifically founded, similar in method to the "hard" sciences (physics in the first place). From Plato to Heidegger, in short, the exploration of the continent "brain / mind" has been uncertain and unsuccessful, while now finally even Philosophy (precisely as "*Philosophy of Mind*") can take its place near neuro- and social sciences.
This vision, however widespread, is nevertheless based on a profound misunderstanding of what Philosophy really is. A reflection on this topic is not only important to claim the specificity of Philosophy, but also because all this has a significant impact for Artificial Intelligence, the central theme of all our attention.

As in previous works, we will quote abundantly from authors of various backgrounds, not to affirm or deny our contiguity with their theses - such statements are usually arbitrary and fundamentally sterile - but simply to show the direction that certain debates have taken and the consequences that this has had for research in Artificial Intelligence. The reduction of the latter to a mere technology, which we have already outlined in a previous study[1], has encouraged in parallel the systematization of "theoretical"

[1] This article follows our work entitled "*The resistible rise of Cognitive Science*", which we recommend reading first in order to follow the logical thread of the entire reasoning.

problems in a specially dedicated discipline. In a single movement, a division of labor within Cognitive Science has been decided, with manual activities under the aegis of Artificial Intelligence and theoretical activities under the aegis of the "Philosophy of Mind." It is this additional step that we document here, the birth of the " Philosophy of Mind" and its definitive appropriation of all the theoretical issues of Cognitive Science (with Artificial Intelligence in the role of "engineering" handmaid). This second step is as important as the first, since – as we will see – in this way it becomes impossible for Artificial Intelligence to
a) be recognized and appreciated for its achievements
b) to independently generate its own work plans and its ontological bases
c) to generate by itself, without importing them from the outside, the answers to the ethical questions that arise.

To put it another way, the possibility of recognizing Artificial Intelligence as a "continuation of Philosophy by other means" is truncated.

We will first try to retrace the birth of the "*Philosophy of Mind*", its assumptions and the contiguity of all this with Cognitive Science. Later we will make a detailed analysis of the two POM's "classic" problems, trying to clarify how Artificial Intelligence is always the prism through which we must read the stages of this intellectual movement.
Finally, we will return to emphasize how all this is the result of a misunderstanding, or rather of an oblivion of what Philosophy really is. It is not just a question of claiming a particular academic discipline's specificity; this oblivion is not the result of chance; it was necessary to forget the "philosophical" charge of Artificial Intelligence[2] and thus be able to use it as a pure technology. The consequences of all this are still being felt today. If you do not analyze and understand these steps, it is impossible to understand expressions such as "intelligence is not consciousness", or to understand why Artificial Consciousness is so fashionable today; but above all it is impossible to set up a serious debate on the ethics of Artificial Intelligence, another topic on everyone's lips today.
However, we must proceed calmly and methodically. We will address these issues in other texts, for now it is important to focus on the "Philosophy of Mind".

1. HISTORY OF THE "PHILOSOPHY OF MIND"

When the first computers appeared on the scene there were many intellectuals and thinkers who immediately saw the novelty of what was

[2] GIOVANNI LANDI, *Intelligenza Artificiale come Filosofia*, Tangram Edizioni Scientifiche, 2020

happening. One among many was undoubtedly Aaron Sloman, whose production of works and academic, beginning in the late 60s, greatly influenced those who came after him.[3]

"Well, suppose it is true that developments in computing can lead to major advances in the scientific study of man and society: what have these scientific advances to do with philosophy? The very question presupposes a view of philosophy as something separate from science, a view which I shall attempt to challenge and undermine later, since it is based both on a misconception of the aims and methods of science and on the arrogant assumption by many philosophers that they are the privileged guardians of a method of discovering important non-empirical truths. But there is a more direct answer to the question, which is that very many of the problems and concepts discussed by philosophers over the centuries have been concerned with processes, whereas philosophers, like everybody else, have been crippled in their thinking about processes by too limited a collection of concepts and formalisms. Here are some age-old philosophical problems explicitly or implicitly concerned with processes. How can sensory experience provide a rational basis for beliefs about physical objects? How can concepts be acquired through experience, and what other methods of concept formation are there? Are there rational procedures for generating theories or hypotheses? What is the relation between mind and body? How can non-empirical knowledge, such as logical or mathematical knowledge, be acquired? How can the utterance of a sentence relate to the world in such a way as to say something true or false? How can a one-dimensional string of words be understood as describing a three-dimensional or multi-dimensional portion of the world? What forms of rational inference are there? How can motives generate decisions, intentions and actions? How do non-verbal representations work? Are there rational procedures for resolving social conflicts? There are many more problems in all branches of philosophy concerned with processes, such as perceiving, inferring, remembering, recognizing, understanding, learning, proving, explaining, communicating, referring, describing, interpreting, imagining, creating, deliberating, choosing, acting, testing, verifying, and so on. Philosophers, like most scientists, have an inadequate set of tools for theorizing about such matters, being restricted to something like common sense plus the concepts of logic and physics. A few have clutched at more recent technical developments, such as concepts from control theory (e.g. feedback) and the mathematical theory of games

[3] Aaron SLoman he is one of the founders of the *School of Cognitive and Computing Sciences* (COGS) at the University of Sussex in the United Kingdom. More precisely, it is thanks to him that in 1974 the *Cognitive Studies Program* changed its name and becomes COGS. Beyond the anecdote, here we see how it is the hopes and developments of computer science that have heavily contributed to the consolidation of Cognitive Science as a discipline in its own right.

(e.g. payoff matrix), but these are hopelessly deficient for the tasks of philosophy, just as they are for the task of psychology. The new discipline of artificial intelligence explores ways of enabling computers to do things which previously could be done only by people and the higher mammals (like seeing things, solving problems, making and testing plans, forming hypotheses, proving theorems, and understanding English). It is rapidly extending our ability to think about processes of the kinds which are of interest to philosophy. So it is important for philosophers to investigate whether these new ideas can be used to clarify and perhaps helpfully reformulate old philosophical problems, re-evaluate old philosophical theories, and, above all, to construct important new answers to old questions. As in any healthy discipline, this is bound to generate a host of new problems, and maybe some of them can be solved too." [4]

We sincerely apologize for the length of the quote, but it was important for us to state this Sloman's position as clearly as possible. The central thesis, clearly stated also in the title, is that the development of information technologies (and Artificial Intelligence in particular) can have a disruptive impact not only on the sciences but also in Philosophy. How?
Any scientific or philosophical problem, Sloman tells us, can be formulated in terms of process, that is, in the form "what process underlies X?"; obviously with this assumption the distinction between Science and Philosophy vanishes, and just as obviously the role of Artificial Intelligence will be that of a necessary support to the resolution of "secular philosophical problems." Sloman makes a non-exhaustive but large enough list of these problems to be almost convincing.
This vision of Philosophy, however, dissolves its essence. First of all, the reduction of any question to a question of "process" veiledly introduces absolutely unfounded assumptions: everything (the body, the mind, the thought, but also seeing, touching, etc) is interpreted as a mechanism, and it is not clear on the basis of what this preliminary methodological choice is justified. But above all, Philosophy is not a sum of problems (attributable or not to processes), Philosophy is a search for the True, not for how "things work", even if just because neither the status of "things" nor the meaning of "functioning" is taken for granted. The object of philosophical questioning may or may not be generic, it can take the form of questions and specifications, but there can be no illusion on the fact that answers will have the form of judgments or even less of processes. Or rather, the form of the answers must also be justified and not taken a priori. This point is essential: in any university faculty there are chairs of Philosophy of History, History of Philosophy, Philosophy of Science, Law, Morals, etc. But this "administrative" division

[4] AARON SLOMAN, "*The computer revolution in Philosophy*", Hassocks (UK), The Harvester Press, 1978, p. 2-3

cannot and must not conceal the systematic nature of research and research methods (which with all due respect for Sloman do not recognize the empirical as the ultimate canon of truth).
Said with another example: to say as many manuals say that the first Philosophers of the Mind were Plato and Aristotle, and then to follow Descartes, Hume, Locke, Leibniz, Kant, Spinoza etc. up to contemporary thinkers, is a mistake. Of course, in the pages of all these great authors the themes of the "Philosophy of Mind" are present, but not in an isolated form, not in the form of specific questions such as "how does the Mind work?" or "how do we perceive phenomena?". The answers, finally, when there are, can not be taken without everything else, including problems. One cannot take Kant's intuition that perception requires an active participation of the percipient subject, for example, without taking into account the problems raised by the "thing in itself"; one cannot take (even if only to criticize it) the *res cogitans/res extensa* dualism of Descartes without also accepting the ontological precedence of thought in the "*cogito ergo sum*". We will see the detail of what this means in the second part of this work.

Aaron Sloan has evidently read many philosophers. But this erudition is so influenced by the dominant Analytic Philosophy regard that it prevents him from seeing alternatives. This limitation is clear in many of his comments.

"*One of the bigger obstacles to progress in science and philosophy is often our inability to tell when we lack an explanation of something. Before Newton, people thought they understood why unsupported objects fell. Similarly, we think practice explains learning, familiarity explains recognition, desire explains action. Philosophers often assume that if you have experienced instances and non-instances of some concept, then this 'ostensive definition' suffices to explain how you could have learnt this concept. So our experience of seeing blue things and straight lines is supposed to explain how we acquire the concepts blue and straight."* [5]

Here the criticism – however well-founded – is evidently directed to Russell's logical atomism and all its derivations, that is, to all those attempts of Analytical Philosophy to find links between language and external reality. It is not even necessary to emphasize that in this form the problem arises in Analytical Philosophy only because the existence of the outside world is affirmed as an absolute and fundamental fact. Besides, in the preceding quote the tools of philosophers are defined as "limited to something like common sense plus the concepts of logic and physics*",* and this is a definition valid for Analytical Philosophy and only for it. But it is in the definition of Artificial Intelligence that it clearly emerges how Sloman's effort to link

[5] Ibid, p. 7

Computer *Science* (including Artificial Intelligence) to a progress in Philosophy is the result of a radical misunderstanding of Philosophy itself:

"*What is Artificial Intelligence? The best way to answer this question is to look at the aims of AI, and some of the methods for achieving those aims, ... So I'll give an incomplete answer by describing and commenting on some of the aims.* ***AI is not just the attempt to make machines do things which when done by people are called ``intelligent''. It is much broader and deeper than this****. For it includes the scientific and philosophical aims of understanding as well as the engineering aim of making. The aims of Artificial Intelligence*

1. ***Theoretical analysis of possible effective explanations of intelligent behavior***
2. Explaining human abilities
3. Construction of intelligent artefacts

Comments on the aims:
a. ***The first aim is very close to the aims of Philosophy. The main difference is the requirement that explanations be 'effective'****. That is, they should form part of, or be capable of contributing usefully to the design of, a working system, i.e. one which generates the behavior to be explained*."[6]

Sloman's insistence on effectiveness is commendable and demonstrates a real understanding of the potential of Artificial Intelligence; we would dare to say that here there is already a formulation, at least an intuition, of the possibility of Artificial Intelligence as a "continuation of Philosophy by other means." But it is in the goals that this intuition is lost, since Turing's question "*can a machine think?*" completely disappears, and in its place the "behavior" and "abilities" of man are defined as objects of research. It will perhaps be objected that thought is one of man's abilities (such as seeing, hearing, etc.) and it is the basis of his behavior, so the result does not change, and this is probably the answer that Sloman himself would give. As a matter of fact, the category of "behavior" could be justified as the only objective, external, observable indication of (mental) processes that cannot be observed by definition.
But precisely here lies the distance from true Philosophy, whereby Thought is not one of the simple human "abilities" or one of the causes of the behavior of individuals; Thought is something much more fundamental, and it is its elimination from the objectives of Artificial Intelligence that we denounce as a reduction of it to mere technology. We will return to these issues at the end of

[6] Ibid, p. 10

this article, but for now it is necessary to continue our examination of the "Philosophy of Mind".

Aaron Sloman wrote these lines in 1978, in the period of gestation and academic adjustments of Cognitive Science. Thirty years later the relationship between Philosophy and this *ensemble* of new disciplines remains unchanged:

"*Philosophers appeal to everyday observation and introspection. They use dialectical methods and seek out ambiguities and common confusions. In their search for more rigorous methods of reasoning, they have contributed to cognitive science (as well as to other disciplines) the powerful tool of modern symbolic logic. With the very important exception of symbolic logic, however, philosophical methods of inquiry probably have less effect on the methods of cognitive science than do the substantive questions that philosophy addresses: for example, the age-old questions of the nature of the mind and intelligence, of the relation of mind to body, and of how we come to know the external world…*
*…**During the brief history of AI and cognitive science, one after another of the initial philosophical distinctions between human intelligence and machine intelligence have fallen by the wayside as the technology has advanced**. Thus, even if philosophy contributes to cognitive science by debating the limit of machine intelligence, **cognitive science has strongly affected philosophy by producing running computer programs whose performance bears on classical philosophical issues***." [7]

The definition of the work of Philosophy describes, once again, only the work of analytical philosophers, and once again here all philosophy seems to be reduced to it; it is at least risky to argue that Kant or Descartes simply used "*daily observation and introspection*" or sought out *"common ambiguities and confusions"* in their works. While Sloman at least had a clear idea of the history of philosophy, in the text edited by Posner there is a deep-rooted belief that Philosophy is only an analysis of language, and for this reason it is presented as a useless methodology. As for the "*ancient questions*", however, they remain valid, and can be solved with Artificial Intelligence (now absorbed entirely in Cognitive Science itself). But who will formulate the "theories" to be verified empirically with artificial intelligence programs? Philosophy of Mind of course, to whom are reserved the theoretical and conceptual arrangement topics. In this program we see the oblivion of Philosophy, which is not only the analytical methodology and is not just a sum of "*ancient questions*"; and we see Artificial Intelligence now reduced to a

[7] MICHAEL I. POSNER (edited by), "*Foundations of cognitive science*", Cambridge Massachusetts, The MIT Press, 1993, p. 35

manufacturer of "*computer programs whose performance has to do with classical philosophical questions."*

This division of labor thus defines the operational framework of the "Philosophy of Mind*".* It is now time to in more detail at what it has produced and how it has evolved in about half a century of activity. In the next chapter we will discuss the two main problems of this discipline, the *"Mind-Body problem*" and the "*hard problem of consciousness".* Contrary to our usual method, here some criticisms of the authors cited is a must, essentially for the lack of philosophical preparation they show in presenting philosophers of the first magnitude (Descartes, Kant) and their theses. Since this superficiality is functional to the purpose of the "Philosophy of Mind", it is part, so to speak, of the "glue" that holds these works together, a direct criticism seems inevitable and at the same time legitimate.

THE "MIND-BODY" PROBLEM

The first problem that occupies the "Philosophy of Mind" is that of the relationship between Mind and Body. A thinking machine remains a physically determinable object, which in some way must act in the outside world to express or show its possessing intelligence. It is therefore necessary to explain how this "thought" can act on the physical world, and what better field of study than the human being, where this interaction seems to happen every day? With this approach, at first glance perfectly natural, the problem seems clearly defined:

"In this book, we are chiefly, though not exclusively, concerned with the mind-body problem. We begin, in the next chapter, with an examination of Descartes's mind-body dualism—a dualism of material things and immaterial minds. In contemporary philosophy of mind, however, the world is conceived to be fundamentally material: There are persuasive (some will say compelling) reasons to believe that the world we live in is made up wholly of material particles and their structured aggregates, all behaving strictly in accordance with physical laws. How can we accommodate minds and mentality in such an austerely material world? That is our main question"[8]

The symmetry of the terms Mind and Body must not fool ourselves: materialism is actually taken as an indisputable foundation, something obvious, persuasive and convincing. With the Mind-Body problem, the "Philosophy of Mind" is immediately transported into the debate on materialism, a debate that has always been part of Philosophy but that the Philosophers of the Mind face, it pains to say, with the knowledge and

[8] JAEGWON KIM, "*Philosophy of Mind*", Boulder CO USA, Westviev Press, 2006, p. 10

reflections of a high school student. They all begin and almost all end with Descartes and his famous dualism, presented which I worst in a very superficial way. But let's go in order.

At the beginning of Artificial Intelligence, the Theory of Computation was, and for many still is, the paradigm of reference: the physical universe is entirely computable, and for the theory to have universal validity it is necessary that there be nothing beyond it. As we have seen in our book,[9] and contrary to expectations, the obstacle to this work programme did not come from the development of computational computing, which made enormous progress. The real problem arose from the Boolean Interpretation, that is, from the correlation between internal and symbolic representation of the world with the external (assumed as already existing and uniquely physical) world. Seen with an authentic philosophical gaze, this result was to be expected, since to assume the existence of the outside world (and to assume a univocal meaning of the term "existence") is to take a leap forward whose consequences must be made explicit. Before the twentieth century no intellectual (scientist, philosopher, psychologist) would have contemplated such a leap lightly, the banal materialism that permeates scientific laboratories today would have been inconceivable. Those who professed to be materialistic argued it seriously, understood its implications and considered its limitations. And it is enough to read the reflections of some of the great scientists of the twentieth century (Einstein, Max Planck) to see that there is no relationship between technological advances or even mathematical modeling of the world and the inevitability of a materialist vision of Being.

Cartesian dualism

There is obviously nothing scandalous about a materialist view, especially if what matters pragmatically is the empirical result and the observable data. Even the most metaphysical philosopher among the metaphysicists, reflecting on the ontological status of a piece of bread, when he eats and digests the piece of bread is obviously somehow a materialist. But "*Philosophy of Mind*" goes much further: it wants to be a megaphone of the inevitability of materialism, it transforms technological successes into evidence of such materialism, and when it wants to discuss materialism philosophically it uses arguments of such petiteness that they cannot passed over in silence. It is not a question here of arguing for or against a materialistic vision, the problem is that this smallness and inevitability not only do not help but rather cripple Artificial Intelligence.

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[9] GIOVANNI LANDI *Intelligenza Artificiale come Filosofia,* Trento, Tangram Edizioni Scientifiche, 2020

It is therefore worth it making a small excursus between some of these arguments to evaluate the level of discussion, always with a view to the oblivion of Philosophy that guides our reflection.

"The dualist view of persons that Descartes defended is a form of substance dualism (sometimes called substantial, or substantival, dualism). Substance dualism is the thesis that there are substances of two fundamental distinct kinds in this world, namely, *minds and bodies, or mental stuff and material stuff, and that a huma person* is a composite entity consisting of a mind and *a body, each of which is an entity in its own right."*[10]

Among the great authors of the history of Philosophy the most cited, discussed and almost always polemically treated by Philosophy of Mind is Descartes and his dualism of substances. In the text of 2007 by Jaegwon Kim four out of ten chapters are dedicated to Cartesian dualism; and when that is refuted the argument seems to be exhausted. It starts with Princess Elizabeth of Bohemia's objection to the pineal gland; then other objections are made, all based on the principle of causality:

We will develop another causal argument against Cartesian substance dualism. If this argument works, it will show not only that immaterial minds cannot causally interact with material things situated in space but also that they are not able to enter into causal relations with anything else, including other immaterial minds. Immaterial objects would be causally impotent and hence explanatorily useless; positing them would be philosophically unmotivated. Here is the argument.22 To set up an analogy and a point of reference, let us begin with an example of physical causation. A gun, call it A, is fired, and this causes the death of a person, X. Another gun, B, is fired at the same time (say, in A's vicinity, but this is unimportant), and this results in the death of another person, Y. What makes it the case that the firing of A caused X's death and the firing of B caused Y 's death, and not the other way around? That is, why did A's firing not cause Y's death and B's firing not cause X's death? What principle governs the "pairing" of the right cause with the right effect? There must be a relation R that grounds and explains the cause-effect pairings, a relation that holds between A's firing and X's death and also between B's firing and Y's death, but not between A's firing and Y's death or between B's firing and X's death. What is this R, the "pairing relation" as we might call it? We are not necessarily supposing that there is a single such R for all cases of physical causation, only that some relation must ground the fact that a given cause is a cause of a particular effect that is caused by it." [11]

[10] JAEGWON KIM, "*Philosophy of Mind*", Boulder CO USA, Westviev Press, 2006, p. 34
[11] Ibid, p. 51

The kid of arguments used here leave one speechless, as they remind more the philosophy we studied in high school than the authentic one. Real Philosophy in this case would ask the question of what "cause" means. In the case in question the death of X and Y can be said to be caused by the shots of A and B as well as by many other elements, for example the trigger of A or B, or the manufacturer of A and B, or the bullets used in A and B, or by the cessation of the functioning of the heart of X or by the puncuffing of the lungs of Y and so on. The same can be said for the effects, which can be said to be the death of X and Y, but also the falling to the ground of their bodies, or the pain of their family members, or the arrest of those who shot and so on again. Real philosophy would therefore recognize that the R relationship that actually "grounds" the cause-effect coupling is not at all univocal, but determined in a completely arbitrary way by the observation of the scene. Yet Jaegwon Kim insists with the principle of causality:

"If there are Cartesian minds, therefore, they are threatened with total causal isolation - from each other as well as from the material world….. If this is right, we have a causal argument for a physicalist ontology. ***Causality requires a spacelike structure, and as far as we know, the physical domain is the only domain with a structure of that kind****."*[12]

The principle of causality, taken here as the ground for the materialistic belief, is highly problematic in philosophy and science. Hume, a philosopher often cited favorably in Cognitive Science, absolutely denied this; Kant admitted it, but at the level of the transcendental ego and certainly not in the physical world; Hegel in his Logic of Science simply surpasses it (*aufheben*). If it seems too much to demand a thorough knowledge of all this on the part of those who call themselves Philosopher of the Mind, let us only remember that even quantum theory explicitly denies it. Of course, it will be objected, the author speaks here only of causality in the physical world, and it is indisputable that a Laplacian view of the physical world is perfectly sustainable and coherent. But herein lies the point: in refuting Descartes' dualism the author assumes the univocal existence of the physical world, takes it as a starting point and not as a result.
As said before, what we want to show is how at the bottom of "Philosophy of Mind" lies a pressing need to affirm at all costs and in all ways the validity of materialism, that is, of the exclusive existence of the physical world. More than a philosophy, we seem to be in front of a "metaphysical" conviction (in the worst sense of the word) whose objective is to reassure the faithful. And these faithful are not ordinary people, but specifically the researchers of Cognitive Science and Artificial Intelligence; it seems as if by being in close

[12] Ibid, p. 53.

contact with the devil (the mental, the non-physical, the not-empirically-knowable) they must be continually reassured in the fundamental belief of physicalist materialism. This is the reason for the continuous citation and refutation of Descartes, taken as the representative of the infamous dualism. Take for example the monumental "*Philosophy of Mind, a guide and anthology",* over 930 pages, published by Oxford University Press in 2004. Four of the major philosophers are entitled to a dedicated chapter: in addition to the usual Descartes, there are Plato, Aristotle and John Locke, all thinkers well before the Galilean and Newtonian scientific revolution. Unfortunately, there is no room to detail the superficiality of some passages in this book too, so we will limit ourselves to one example – again with Descartes – to show how reductive the "Philosophy of Mind" approach can be.

We have seen that Descartes is a favorite target as a supporter of a "substantial" dualism, the famous *res cogitans*/*res extensa* opposition. Only a few remember that before this formula Descartes said something else, the equally famous *"cogito, ergo sum*"; and when they remember it the meaning is distorted. John Heil says:

“Everyone knows about Descartes's famous inference: 'I think therefore I am'. In fact, this formulation of the so-called cogito ('I think') inference occurs in the Discourse on Method and not in the Meditations, which is Descartes's most serious treatment of the argument. What Descartes says there is: 'I must finally conclude that the statement "I am, I exist" must be true whenever I state it or mentally consider it' (Meditation II). Descartes has been looking for some principle that will enable him to distinguish beliefs he is justified in holding from the rest - the sheep from the goats. His strategy could be compared to that of a chemist engaged in developing an assay, a test for distinguishing samples of some substance -gold, for instance- from imposters. Just as a chemist needs as a starting point a nugget of what is indisputably gold, so Descartes needs an epistemological 'nugget', some belief the truth of which is indisputable. Once he has this, he can locate the property from which its indisputability stems and use this to develop an assay.”[13]

This vision completely distorts the "cogito", making it a forerunner of the Mind-Body problem, while nothing was further from Descartes' intentions. What Descartes in his hyperbolic doubt finds with the "cogito" is a foundation of truth, not a method of finding the truth: he finds this foundation in the affirmation of one's being as a "thinking being". The "true" existence of thought, with all due respect to Cartesian dualism, comes before the truth,

[13] JOHN HEIL (edited by), "*Philosophy of Mind. A guide and anthology*", New York USA, Oxford University Press, 2004, p 16

indeed comes together with it, it is the truth: the outside world and the rest come later and are mediated by the belief in God. Thought, on the other hand, is true immediately, it is existence, indeed it is the univocal and direct definition of "Being". John Heil's mistakes it because he reads the *"cogito ergo sum"* as a syllogism, in the form "all thinking beings exist, I think, therefore I exist ", but this is not the way to read it. The classic Aristotelian syllogism, at the stage of hyperbolic doubt, for Descartes has been swallowed up with everything else. The "method" does not precede the truth (otherwise it would be merely certainty), it is the immediate truth of the being of thought that grounds the method, and that is why in the Meditations Descartes does not say "ergo". It is for discovery, the affirmation of Being as being grounded in Thought beyond any possible doubt, that makes of Descartes the father of modern philosophy, not his dualism, which can be criticized from many points of view.

Intentionality

It would be unfair to say that Philosophy of Mind is just a refutation of Cartesian dualism, there is obviously also a positive side, in which we always find Artificial Intelligence in a central role.
At the beginning, for example, it seemed that Shannon's Information Theory would be a sufficient working framework to force the mental into a materialistic metaphysics. But the objections of John Searle and others (essentially objections to the possibility of a non-human intelligence) quickly unveiled the insufficiency of this theory as an explanation of the mental. Hence the recovery of the concept of intentionality as a key to understanding the mental:

“Meditating in this way on how meaning works, the late-nineteenth-century philosopher Franz Brentano developed the notion of intentionality, the power mental representations seem to have of pointing to — “being about” — things outside of, and arbitrarily far from, the mind or brain containing those representations. The ability of someone to warn me about that lion depends on that person’s sure-footed ability to reason about that animal over there, as well as on our shared knowledge about the species Panthera leo. Brentano, and many philosophers since, have argued that intentionality is at bottom a property only of mental representations. There seem to be many kinds of “aboutness” in the world; for instance, there are books about lions; but items like books can be about a topic only if they are created by humans using language and writing systems in order to capture thoughts about that topic. Books are said to have derived intentionality, whereas people have original or intrinsic intentionality. ***Computers seem to be textbook cases of physical items whose intentionality, if any, is derived****. If one sees a curve plotted on a computer’s screen, the surest way to find out what it’s about is to ask the*

person who used some program to create it. In fact, that's the only way. Digital computers are syntactic engines par excellence. Even if there is an interpretation to be placed on every step of a computation, this interpretation plays no role in what the computer does. Each step is produced purely by operations dependent on the formal structure of its inputs and prior state at that step. If you use TurboTax to compute your income taxes, then the numbers being manipulated represent real-world quantities, and the number you get at the end represents what you actually do owe to the tax authorities. Nonetheless, TurboTax is just applying formulas to the numbers. It "has no idea" what they mean. ***This intuition is what Dennett wants to defeat, as should every other researcher who expects a theory of consciousness based on AI. There's really no alternative. If you believe that people are capable of original intentionality and computers aren't, then you must believe that something will be missing from any computer program that tries to simulate humans****. That means that human consciousness is fundamentally different from machine consciousness, which means that a theory of consciousness based on AI is radically incomplete."*[14]

The concept of intentionality is seductive as it has the advantage of turning the debate about substances into a debate about functionalities, and it is in fact in this form that it is adopted. The question is transformed, it goes from "what is thought?" to "what does thought do?" But it is the curse of materialism of not being able to limit itself to the functional, and of always having to indicate a "where":

"Dennett's approach to the required demolition job on intrinsic intentionality is to focus on the prelinguistic, nonintrospective case. In a way, this is changing the subject fairly radically. In the introspective set-up, we are talking about elements or aspects of the mind that we are routinely acquainted with, such as words and images. In the nonintrospective case, it's not clear that those elements or aspects are present at all. ***What's left to talk about if we're not talking about words, "images," or "thoughts"? We'll have to shift to talking about neurons, chips, firing rates, bits, pointers, and other "subpersonal" entities and events****. It's not clear at all whether these things are even capable of exhibiting intentionality. Nonetheless, showing that they are is a key tactic in Dennett's attack on the problem of consciousness."*[15]

As was obvious from the beginning, a coherent materialist position cannot remain at the level of the functional and is therefore forced to sink into always smaller orders of magnitude of matter. It is the prelude to the success of

[14] DREW MCDERMOTT in "*Artificial Intelligence and Consciousness*" in "*The Cambridge Handbook of Consciousness*", Cambridge University Press, Cambridge UK, 2007, p. 14
[15] Ibid, p. 15

neuroscience, which wants to localize the mental in the movement and reciprocal action of neurons finally scientifically observable. However, this solution also raises the problems not so easy to solve, but for which we must refer to our third essay for detailed discussion.
Here it is only interesting to note that it is always Artificial Intelligence that is called to the rescue by "Philosophy of Mind" when ontological problems arise. Daniel Dennett, quoted above by McDermott, was among the first to attempt a reformulation of the ontological problem (dualism vs materialism) by resorting to intentionality:

"Even among homo sapiens it is not plausible to insist that when two of them are both thinking of Spain they must share some unique physically describable state……our task is not to identify Tom's thought of Spain with some physical state of his brain, but to pinpoint those conditions that can be relied upon to render the whole sentence "Tom is thinking of Spain" true or false."[16]

Dennett wants to avoid the parallelism between physical and mental states, and also wants to avoid a causal relationship between the former and the latter.

"The task of avoiding the dilemma of Intentionality is the task of somehow getting from motion and matter to content and purpose – and back. If it could be established that there were conceptually trustworthy formulations roughly of the form "physical states S has the significance that P" one would well be on the way to the solution of the problem. But if that is all it takes the answer may seem obvious. Computers, we are told, "understand" directions, send each other "messages", "store the information that P" and so forth, and do not these claims imply that some physical states of computers have content in the requisite sense?"[17]

It is obvious that if one accepts the idea that computers "understand" the information they receive then the problem of the mental is solved; indeed, it no longer exists as a problem. Again, it is not interesting here to enter into this discussion which has made the fortune of arguments such as John Searle's Chinese Room; we are only interested in showing that it is the possibility of Artificial Intelligence, far from being the technical arm of "Philosophy of Mind", that constitutes its theoretical justification as a discipline.
We complete the review with two other quotes where this centrality of Artificial Intelligence clearly emerges:

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[16] DANIEL DENNETT *Content and Consciousness*, London: Routledge, 1968, p. 18
[17] Ibid, p. 40

"…as a general rule a bit of behavior is non-Intentional if we could quite easily construct a device that performed it (a door-closer, a food-chewer) and is Intentional if it is not at all obvious that anything we might build could be said to be doing it (could we imagine a device which could be said, quite literally and unfancifully,…to believe it is raining?)…The strength of the analogy between human behavior and computer behavior is thus a critical point which we will examine from a number of points of view."[18]

"What counts as using the information is hard to say in many cases, but some computer programs do enough with the data they are fed to be strong candidates for the honor of intelligent storage."[19]

The true nature of Cartesian dualism

We will return to intentionality in a future work. For the time being, the fact remains that this obstinate assertion of a self-evident materialism is curious, especially considering that these were not the initial intentions. Here's Aaron Sloman (1978):

"…the ontological status of mind has little relevance to the problems of this book. Both Dualism, which postulates some kind of spiritual entity distinct from physical bodies, and Materialism, according to which minds are just aspects of complex physical systems, lack explanatory power."[20]

For Sloman the Dualism-Materialism debate is not important, what matters is the possibility opened by Artificial Intelligence to build apparatus capable of making mental processes better understood. Although philosophically inspired, his position remains that of an engineer who finds in his philosophical readings some interesting ideas. Let's take two examples that show how far this position is from Philosophy:

"In this chapter I wish to elaborate on a theme which Immanuel Kant found obvious: there is no perception without prior knowledge and abilities
In the opening paragraphs of the Introduction to Critique of Pure Reason he made claims about perception and empirical knowledge which are very close to assumptions currently made by people
working on artificial intelligence, projects concerned with vision and language understanding. He suggested that all our empirical knowledge is made up of both 'what we receive through impressions' and of what 'our own faculty of knowledge supplies from itself'. That is, perception is not a passive process of

[18] Ibid, p. 44-45
[19] Ibid, p. 44-45
[20] AARON SLOMAN, "*The computer revolution in Philosophy*", Hassocks (UK), The Harvester Press, 1978, p.65

receiving information through the senses, but an active process of analysis and interpretation, in which 'schemata' control what happens. In particular, the understanding has to 'work up the raw material' by comparing representations, combining and separating them. He also points out that we may not be in a position to distinguish what we have added to the raw material, 'until with long practice of attention we have become skilled in separating it'. These ideas have recently been reinvented and elaborated by some psychologists (for example, Bartlett).
One way of trying to become skilled in separating the raw material from what we have added is to attempt to design a machine which can see. In so doing we learn that a great deal of prior knowledge has to be programmed into the machine before it can see even such simple things as squares, triangles, or blocks on a table. In particular, as Kant foresaw, such a machine has to use its knowledge in comparing its sense-data, combining them into larger wholes, separating them, describing them, and interpreting them as representing some other reality."[21]

The way Sloman describes Kant's transcendental ego is not only extremely synthetic but also very superficial. In Kant's introduction the "raw material" becomes after three hundred pages the "thing-in-itself", something much more complicated than what Sloman seems to think, and which can be considered as the starting point for the whole debate of classical German philosophy up to Hegel. Just to give an example, the separation between raw material and "scheme", even if it was possible, would give us access to something that again we could only know through the same "scheme" as above, making the process somehow circular and meaningless. The unknowability of the thing-in-itself, its very existence, the relationship phenomenon/noumenon and so on are quite more complex issues, while here Sloman's quoting of Kant seems to have the only objective to sound deeper than his reflections. The same can be said about Sloman's treatment of the problem of skepticism:

"One form of skepticism argues that you cannot ever know that there is an external world containing other people and objects, because a 'malicious demon' might be fixing all your sense-data so as to deceive you. Many philosophers have gone to great lengths to try to refute such skepticism in its various forms. I cannot see why, for it is harmless enough: like many other philosophical theories it is devoid of practical consequences. It is especially pointless struggling to refute a conclusion that is true. To see that it is true, consider how a malicious team of electronic engineers, programmers, and philosophers might conspire to give a robot a collection of hallucinatory experiences. (Even the primitive technology of the 1970s comes reasonably

[21] Ibid, p. 141

close to this in flight-simulators, designed to give trainee air pilots the illusion that they are flying real airplanes.) The robot would have no way of telling that it was tied up in a laboratory, with its limbs removed and its television inputs connected to a computer instead of cameras. All its experiences, including experiences resulting from its own imagined actions, would be quite consistent with its being out romping in the fields chasing butterflies. Only if it tried some sort of action whose possibility had not been foreseen in the programs controlling its inputs would it get evidence that all was not as it seemed. (Like a flight simulator which cannot simulate your getting out of the plane.) However, even if you manage to convince yourself that the skeptical arguments are valid, and you have no way of telling for sure that you inhabit the sort of world you think you do, it is not clear that anything of any consequence follows from this. It does not provide any basis for abandoning any of the activities you would otherwise be engaged in. In fact it is only if there is a flaw in the skeptic's argument, and there is some kind of procedure by which you can establish that you are or are not the victim of a gross hallucination, that any practical consequence follows. Namely, it follows that if you care about truth you should embark on testIng. Since I find it hard to take discussions of skepticism very seriously, I have probably failed to do justice to the problem."[22]

Sloman here is much subtler than what he admits: he does not refute Descartes (the hyperbolic doubt, the evil demon and so on), he merely ignores it because if the skeptic is right there can be no practical consequence, and is he is wrong then the search for truth can begin. In Philosophy this line of argument has been known for centuries and consists in making the skeptic recognize that the statement "the truth does not exist" is a true statement, therefore not skeptical. Indeed, if skepticism were the truth, there would be no further reason to seek it, it would already be possessed, and affirming the impossibility of truth would be the truth. At this point it is our own Reason that falters: and if there is a line of demarcation between science and philosophy it is precisely here, in accepting or not this contradiction as an integral part of human knowledge. Sloman senses here the depth of the problem, elegantly confesses that he is not interested and goes on to something else; he is interested in machines and not in a philosophical vision. This engineering functionalism that uses for its own purposes some purely philosophical ideas and concepts is once again no scandal, in a certain way Cartesian dualism is another example of it. The medieval Aristotelian scholastic was full of souls (vegetative, humoral, sweating, etc.), the study of the body as such did not exist, medicine was more a metaphysical and poetic debate than a rigorous science. The clear separation introduced by Descartes between a single soul and a body defined as a machine is what allowed the

[22] Ibid, p. 178

beginning of anatomy, medicine as a "hard" science based on observable data, the medical advances of modernity. This separation was intended to be definitive and radical, which explains Descartes' judgment on animals as soulless machinery, and at the same time reconciles dualism with the ontological priority of "*cogito*".
Descartes made no secret of his dissatisfaction with the state of medicine of his time; his contribution (dualism) is a theoretical modelling of the body whose positive effects are still felt. All this is undeniable, the progress of human knowledge is also made of these innovative modelings that help to explain the phenomena of empirical reality, here really science and philosophy go hand in hand. Sometimes, however, when these modeling are taken for the True, technical progress becomes the grounding of truth, and science is transformed from a research program into a theology nobody is allowed to refute.

THE "HARD PROBLEM OF CONSCIOUSNESS"

The impatient reader at this point could argue that all this, however interesting, seems very far from the starting point, namely Artificial Intelligence and its vicissitudes. We will answer that after what we have seen it seems inevitable to conclude that if "Philosophy of Mind″ is still busy refuting a 1600 thinker such as Descartes the reason lies in the failure, despite the promises, in creating "intelligent" and at the same time deprived of "soul" (in the sense of res *cogitans)* machines. This is what has forced thinkers of various backgrounds to re-question the status of the mental, in a certain sense this is what has caused the very birth of the "Philosophy of Mind"*,* from which – we claim – we must be set free to give Artificial Intelligence back its freedom of action. It is a long but necessary journey, "the fatigue of the concept" as called Hegel, the need to analyze and stop at all the stages of knowing without pretending to get to the True by means of an immediate revelation.

Consciousness, this irreducible

Let's see then this second classical problem, in its original formulation by David J. Chalmers.[23] The academic success of this work is largely due to the return professed by Chalmers to a form of not-Cartesian dualism *(sic)* on a collision course with the prevailing materialism among Philosophers of Mind. Chalmers begins with an almost encyclopedic examination of the various answers the field has so far attempted (materialistic reductivism, logical supervening, neurobiological and quantum explanation) and concludes that at

[23] DAVID CHALMERS, "*The conscious mind*", Santa Cruz CA USA, Oxford University Press, 1996

least one aspect of the mental, namely consciousness, is not reducible or explicable in materialistic terms.

"*Almost everything in the world can be explained in physical terms, so it is natural to hope that consciousness might be, too. In this chapter, however, I will argue that consciousness escapes the net of reductive explanation. No explanation given wholly in physical terms can ever account for the emergence of conscious experience*." [24]

"*To see the point in a different way, note that the real problem with consciousness is to explain the principles in virtue of which consciousness arises from physical systems. Presumably these principles—whether they are conceptual truths, metaphysical necessities, or natural laws—are constant over space-time: if a physical replica of me had popped into existence a million years ago, it would have been just as conscious as I am."* [25]

Chalmers does not argue that all the mental is physically unexplainable; only conscious experience has this prerogative, while cognitive abilities and reasoning are perfectly explainable. Consciousness, on the other hand, says Chalmers, does not supervene the physical facts:

"*This failure of materialism leads to a kind of dualism: there are both physical and nonphysical features of the world. The falsity of logical supervenience implies that experience is fundamentally different in kind from any physical feature. But there are many varieties of dualism, and it is important to see just where the argument leads us. ..... The arguments do not lead us to a dualism such as that of Descartes, with a separate realm of mental substance that exerts its own influence on physical processes. The best evidence of contemporary science tells us that the physical world is more or less causally closed: for every physical event, there is a physical Sufficient Causes. If so, there is no room for a mental "ghost in the machine" to do any extra causal work. .... In any case, for all the arguments in the previous chapter, it remains plausible that physical events can be explained in physical terms, so a move to a Cartesian dualism would be a stronger reaction than is warranted. The dualism implied here is instead a kind of property dualism: conscious experience involves properties of an individual that are not entailed by the physical properties of that individual, although they may depend lawfully on those properties. Consciousness is a feature of the world over and above the physical features of the world. This is not to say it is a separate "substance"— ..... By contrast, the property dualism that I advocate invokes fundamentally new features of the world. Because these properties are not even logically*

[24] Ibid. p. 83
[25] Ibid, p. 107

supervenient on microphysical properties, they are nonphysical in a much stronger sense. When I speak of property dualism and nonphysical properties, it is this stronger view and the stronger sense of nonphysicality that I have in mind. ... The position we are left with is that consciousness arises from a physical substrate in virtue of certain contingent laws of nature, which are not themselves implied by physical laws. This position is implicitly held by many people who think of themselves as materialists. It is common to hear "of course I'm a materialist; the mind certainly arises from the brain". The very presence of the word "arises" should be a tip-off here. One tends not to Say "learning arises from the brain", for instance—and if one did, it would be in a temporal sense of "arises". Rather, one would more naturally say that learning is a process in the brain. The very fact that the mind needs to arise from the brain indicates that there is something further going on, over and above the physical facts..... Although it is a variety of dualism, there is nothing antiscientfic or supernatural about this view. The best way to think about it is as follows. Physics postulates a number of fundamental features of the world: space-time, mass-energy, charge, spin, and so on. It also posits a number of fundamental laws in virtue of which these fundamental features are related. ***Fundamental features cannot be explained in terms of more basic features, and fundamental laws cannot be explained in terms of more basic laws; they must simply be taken as primitive****." [26]*

After listening for years to various complaints about the obscurity of philosophy texts, the reader can forgive us if we succumbed to the subtle pleasure of subjecting him to the reading of pages like these that have nothing but envy to what Kant or Hegel may have written. The use of the category of “primitive” can instead raise eyebrows, considering the easy irony that the "Philosophy of Mind" has always reserved to Descartes' response to Princess Elizabeth of Bohemia.[27]

More seriously, it should make us reflect on the fact that any method of seeking truth based on the cause/effect principle must inevitably, sooner or later, sink into the admission of one or more "primitive" elements that are not further questionable. If one defines the True as that which explains the cause or causes of something, the only alternative to Skepticism is one or more "primitive" elements. Again, in Philosophy already Aristotle had understood it with his immovable "first engine".

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[26] Ibid, p. 110-111

[27] *Let's cite for example Jaegwon Kim: " Descartes’s declaration that the idea of a union is a “primitive” and hence not in need of an explanation is unlikely to impress someone seeking an understanding of mental causation; it is liable to strike his critics simply as a dodge—a refusal to acknowledge a deep difficulty confronting his approach.”*

Be that as it may, the principle of the "irreducibility" of consciousness has now been enunciated: consciousness is something that is there, that is not material and therefore that materialism cannot not explain. It must simply be accepted as a "primitive" characteristic of the world, not further explainable. Chalmers, thus also responding to the objections of John Searle (the Chinese Room), separates the mental into two distinct spheres: on the one hand the operational intelligence and on the other the experience of consciousness. The first does not pose any problems for Chalmers, who fully accepts the logical possibility of zombies[28]; logical and rational reasoning do not pose any problems, and can be explained by evolution and functionality, as a tool aimed at solving specific problems. There is no mystery here and science has already understood everything in this area; "*weak*" Artificial Intelligence knows no obstacles. This separation has profoundly influenced the following works of Artificial Intelligence: on the one hand it has allowed many to argue that "intelligence is not consciousness", so a thinking machine should not be conceived as a copy of a thinking human being; on the other it has paved the way for the work of *Artificial Consciousness*, to which we will return in a forthcoming work.

Chalmers' solution, in short, seems to restore order in a discipline that seemed to be engloped into debates that were too complex (some would say "metaphysical") and too similar to those of the boring and inconclusive Philosophy. But the real reason for Chalmers' success lies in the fact that his "dualism of property", precisely because it is a form of dualism, recovers one of the essential philosophical elements of Artificial Intelligence, one of those elements that make us say that Artificial Intelligence is "continuation of philosophy by other means". The question "can a machine think?" not only recognizes thought as something not reducible to functional; it recognizes its existence, and above all affirms its independence from the material substrate

[28] Zombies have become philosophical arguments after having been Hollywood characters, this is something we leave to the judgement of the reader. In a nutshell, a physical world completely and absolutely equal to ours is imagined, and then the question is whether in that world consciousness would necessarily or not emerge. Chalmers' "zombie" copy would do exactly the same actions, movements etc. as the original, but the question remains whether it is also necessary to accept Chalmers' conscious being in such a world. If a zombie world is ***logically*** possible then consciousness is necessarily something non-material and dualism must somehow be accepted. It is the position of Chalmers. His opponents argue instead that equal physical conditions must correspond to equal effects, so the world of zombies ***is not logically*** possible, in such a world consciousness would inevitably "arise".
This debate about zombies once again shows the lack of philosophical depth of the "*Philosophy of Mind*", often replaced by decidedly folkloristic Kantian-like antinomies. The two positions in fact suffer from a basic impossibility that lies in the very construction of the problem: a world physically equal in all respect to ours cannot be given, because there is already ours, and two physical elements cannot occupy the same space. Before we even say whether this world is logically possible or not, it must be said that it is unimaginable, which is tantamount to saying that the debate itself is not logically possible.

that hosts it. Not much attention is paid at this point, but the statement that thought (whether defined as functional, intentional or otherwise, but always in the form of an algorithm) is independent of the material basis on which it runs (silicon, neurons, etc.) is a statement of principle opposed to trivial materialism. If the appearance of the mental, its manifestation, does not depend on the material support, it is not clear how Being can be identified only with such material support. Chalmers' passage, the solution that he calls the "principle of organizational invariance", is therefore to be appreciated for its basic consistency, consistency that - as further proof of what we support - in his eyes also justifies the theoretical possibility of "strong" Artificial Intelligence:

"*I have already done most of the work required for this defense of strong AI, in arguing for the principle of organizational invariance in Chapter 7. If that argument is correct, it establishes that any system with the right sort of functional organization is conscious, no matter what it is made out of. Know we already know that being made of silicon, say, is no bar to the possession of consciousness."* [29]

Chalmers' operation is perfectly framed in Kuhnian terms:

a) it isolates a fact that does not fit into the dominant paradigm: *consciousness as a "residue" that emerges from the physical*
b) this fact is relegated to an inaccessible but after all harmless space: *the physical world – or zombies – and their logical possibility*
c) it gives back to researchers their confidence in the paradigm: *the possibility of a strong Artificial Intelligence*

But as readers of Thomas Kuhn know, this operation is not a paradigm revolution, indeed it has all the characteristics of restoration. Chalmers' passionate heretic accents do not change the fact that his solution not only does not solve the problem but amplifies it. It is in our next essay that we will see in detail the consequences of this operation, both in its philosophical side (quantum solution and neuroscience) and in the technical one (the Artificial Consciousness).

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