LEIBNIZ ON MEMORY AND REASON

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Abstract. *This paper is intended to give an account of the problem of memory as presented in the philosophy of G. W. Leibniz. Leibniz's understanding of memory is here analyzed with respect to the problem of knowledge, that is, to the way in which memory can have an impact on workings of reason. The analysis is followed by a comparison of Leibniz's and Descartes's accounts of memory, with a focus on the scope in which Leibniz was influenced by Descartes. I conclude that for Leibniz, as opposed to Descartes, memory is a necessary and integral part of knowledge, and therefore of the methodology of sciences as well. In this respect, the analysis also presents Leibniz's understanding of two possible formalizations of memory: one given with the art of memory, and the other being the part of the philosophical language. In both cases memory is considered close to logic and connected with it. I argue that the second formalization, the one given in philosophical language, is more useful for the interpretation of how Leibniz understands memory, while the project of formal and symbolic language is a kind of precondition for the formal account of process of thinking in general – in terms of validating knowledge as certain and reliable, as well as in terms of acquiring new knowledge. Such findings, in turn, prove that the problem of memory in Leibniz's philosophy is primarily to be seen as a problem of methodology and epistemology. In other words, they prove that other aspects of Leibniz's concept of memory, such as metaphysical or theological ones, are to be interpreted on the basis of methodological meaning of this concept.*

Key words: *G. W. Leibniz, memory, reason, logic, the art of memory, knowledge*.

1. INTRODUCTION

The problem of memory in modern philosophy is one of the most intriguing. Modern philosophers investigate the subject of knowledge and its relationship with reality, and therefore they are interested in knowledge faculties of the subject, i.e. in the way in which knowledge works. Although memory is, without a doubt, an aspect of subjective

consciousness and plays a significant role in the process of self-consciousness as its constitutive condition, it was rarely precisely analyzed and almost never understood as one of the main subjective faculties. For modern philosophers, the problem of memory takes a back seat when compared to more focused concerns, such as sensitivity and reason.

However, even in such a context, the problem of memory is one of the most important ones in this context, because it is memory that constitutes the connection between our present and our past thoughts and gives us the possibility to reach beyond our current state of consciousness. As such, it was especially addressed in the philosophy of Leibniz, whose account of memory combines both rationalist and empiricist impulses, and in part depends on the traditional understanding of memory, starting from St Augustine to the Renaissance projects of the art of memory. All those influences converge in the philosophy of Leibniz, resulting in an outstanding theory of memory, both in terms of memory as a faculty of human thought and in terms of methodology of its employment. In the following text I will try to present this precarious and provocative understanding of memory.

2. MEMORY AND RATIONAL KNOWLEDGE

In the philosophy of Leibniz, the problem of memory finds its prominent place in the context of knowledge, and especially in the context of rational and argumentative knowledge. Although this statement could, at first glance, seem strange, given that Leibniz is a rationalist and that he considers reason to be the fundamental human capacity in terms of gaining valid and certain knowledge, it is in fact this statement that points towards the manner of Leibniz's understanding of reason and its operations. That is to say that Leibniz's accounts of the problem of memory are intended to make reason, as the proper ground of knowledge, more comprehensible and more justifiable.

Let us start with an example. Namely, if we are to make a deduction, this means that we are to connect at least two premises to reach the conclusion. Now, this is obvious if we think of deduction in terms of scholastic philosophy: in such a context the main question would be how are we to find the proper formal connection between two premises – seen as mainly linguistic in character – to get to the valid conclusion. However, for Leibniz this is not merely a question of the proper terminological form of the statement, of the proposition, but the question of ideas: premises are actually ideas in the mind, and their connection should, therefore, also be in the mind. Therefore, if we are to make the connection between two premises, two ideas, this means that we should make the transition from one idea (premise) to another one. However, such a transition is possible only through mediation of memory: in order to connect two ideas, one has to be aware of both of them at the same time, that is, one has to be aware of the transition from one idea to the other. Such awareness for Leibniz, of course, is a function of reason, for it is reason as such that is the only human faculty able to make deductions. Although reason deals with deduction, it is memory that makes it possible in the first place – reason could not do what it is meant to do if there were no memory to allow for the transition from one idea to another to happen.

Now, if we accept such findings, this means that memory is one of the most important problems of Leibniz's philosophy, given that it allows for reason to be active. In fact, while the concept of memory is essentially referring to connections of ideas, its function in Leibniz's thought goes beyond the functioning of reason: it can show us the very nature of connections in Leibniz's world, for this world is essentially made of various

connections. The most important one is, of course, the one Leibniz calls *the pre-established harmony*, which is a concept of Leibniz's metaphysics and which accounts for the way in which the metaphysical structure of the world is organized. That is to say that memory is also an important concept of Leibniz's metaphysics, because it deals with these metaphysical connections via ideas; in this paper we will address this aspect of memory only in part. Although the concept of memory in the philosophy of Leibniz has its metaphysical meaning and function, its proper position is in the account of knowledge and the powers of the soul, of the mind. The concept of memory refers to the possibility of having connections between ideas, and such connections between ideas make the very fabric of our mind, at least in terms of what we can see as the mind if we reflect upon it. Therefore, we will now consider this primary meaning and function of memory.

It is a commonplace for modern philosophy after Descartes to consider ideas as the proper and primary objects of thought and reflection. Modern philosophy starts with ideas, because it is doubtful if our thoughts are adequate to reality and to objects of reality we think they refer to. As Descartes has shown, it is even doubtful if there is any rational ground on which we could claim that such reality exists, for we can clearly and distinctly know only that there is *res extensa* and that mathematics is a reliable way for describing it (Wilson 1978, 147-148). However, our ideas of objects and reality that are different from our mind present us with content which is not reliable in terms of clarity and distinctiveness, and therefore they impose on us a view on reality which is not to be entirely trusted (Cottingham 2008, 103-104). This is, by no means, a form of skepticism, and modern philosophers – apart from Hume perhaps – only wish to give a precise account of what can be known and claimed with certainty, without a doubt, that is, how we are to understand and use our mind in proper ways to get to solid facts and truths. In this respect their first task is to map the domain of mind in order to understand its limits and the way of its functioning, and such a task must start with ideas themselves, with what is – without a doubt – given to the mind to reflect upon in the first place. Leibniz shares such convictions.

However, if we are to understand our ideas, we should also understand the way they are interconnected. The philosophy of Descartes or Locke, for example, accounts for this in terms of description and analysis of functions of knowledge – sensitivity, reason and imagination. Such functions of knowledge are in fact functions of ideas, ways of their interplay that again result in some new ideas, which are in their character and complexity different from the starting ones. For example, Locke claims that abstract ideas occur when reason considers simple ideas and puts aside some of their specific content (Priselac 2017, 69). However, such a description of knowledge in terms of its powers and faculties – sensitivity, reason and imagination – is often presented in an almost architectonic manner, in a sort of hierarchy which is quite static in its character.

This means that these functions of mind are merely partly presented as functions, that they are more or less presented as a sort of structural inventory of the mind. The reason for that is the very starting point of such investigations we previously mentioned: because mind, when it reflects upon itself, can only find itself *in ideas* and *as ideas*, if it wants to describe the functions that allow for such ideas to be, it must do so relying on ideas. That is to say, a reflecting mind cannot see the reason or sensitivity as such – it can only see their results, i.e. various ideas. Therefore, if we want to give an account of reason or sensitivity as such, we must reverse the natural process, start with effects and proceed to the causes – in Locke's case, for example, we are to start with the idea of sensation and

proceed to sensitivity or start with an abstract idea and proceed to reason. The resulting account of knowledge and ideas is therefore static in its character, because it starts from one exemplary idea, and not from their interplay. Even in cases where there is a mention of a combination of two or more ideas in one complex idea, it is nevertheless static in its character, because the interplay of ideas is not the problem we are dealing with and from which we are starting with our investigation – again, in such a case we are starting from *one* specific idea, the complex one (Priselac 2017, 60).

However, such interplay of ideas is given to the reflecting mind in the same manner in which the ideas themselves are given to it. Namely, if the mind reflects upon itself, it is given to itself *in ideas* and *as ideas*, but *not as one idea*. That is to say that it is given to itself *as a stream of ideas* – as a transition from one idea to another, as a continuity or succession of ideas. In consequence, this means that the stream of ideas is immediately given for the reflecting mind, that it is not result of some process of thinking as reason or sensitivity are. Therefore, it should also be accounted for; as we have already seen, Leibniz addresses this problem in terms of memory.

It is memory that allows for reason to be active in terms of reasoning, deduction in the previously mentioned example. Therefore, Leibniz says: 'there is no knowledge or reasoning without characters, because all reasoning or demonstration takes place through a memory of premises' (Leibniz 2012c, 160). Namely, if we are not able to remember premises, to keep them in front of our mind's eye, we are not able to see if there is something that they have in common, and therefore we are not able to reach the conclusion. In other words, if there were no memory, there would also be no reason at all, as reason is not some object in our mind or some part of our body (brain), but the very capacity of reasoning and deducing the truths.

In this respect Leibniz is under the influence of Descartes. Namely, Descartes also considers memory in a similar way, although memory is not one of his main preoccupations. Early in his thought, in *Rules for the Direction of the Mind* he writes: 'Hence we are distinguishing mental intuition from certain deduction on the grounds that we are aware of a movement or a sort of sequence in the latter but not in the former, and also because immediate self-evidence is not required for deduction, as it is for intuition; deduction in a sense gets its certainty from memory' (Descartes 1985, 15). Deduction and intuition are for Descartes two main functions of reason, two ways in which it operates; intuition implies that reason grasps some truth immediately, which also means clearly and distinctly, and deduction does not imply such immediate grasping but, just the opposite, the transition from one premise to the other – form one idea to the other (Flage 1999, 27-28). Intuition is for Descartes the source of true and certain knowledge, but it is not given to a human being at every instance: while we humans are not gods, our knowledge is not pure intuition, although we can have some intuitive ideas – such is *Cogito sum*. However, because we are not gods and while our ideas are not always clear and distinct ideas, in order to make our knowledge as good as possible we must rely on deduction, and that means on memory.

Of course, in such use of deduction Descartes will accentuate the role of reason and not the role of memory, but he will, as we have seen, acknowledge that memory is here the ground on which deduction always stands and must be standing. This can clearly be seen in Descartes's reason for introducing deduction apart from intuition in the first place: 'But this distinction had to be made, since very many facts which are not self-evident are known with certainty, provided they are inferred from true and known principles through a continuous and uninterrupted movement of thought in which each individual proposition is clearly intuited. This is similar to the way in which we know that

the last link in a long chain is connected to the first: even if we cannot take in at one glance all the intermediate links on which the connection depends, we can have knowledge of the connection provided we survey the links one after the other, and keep in mind that each link from first to last is attached to its neighbour (Descartes 1985, 15). That is to say that, although our knowledge is not purely intuitive, it can nevertheless in many cases be certain, provided that it is controlled and governed methodologically. In this context this means that such knowledge should be as intuitive as possible – that every link in the 'chain' of ideas should be intuitively grasped and that every transition from one idea to its 'neighbour' should also be intuitively grasped. In fact, it is this transition from one idea to another one that is most important here, while deduction is in fact constituted from such a transition of ideas.

However, Descartes does not rely on memory as such. Although he is aware that it is memory that makes deduction possible, as it is active in this process of thinking, he considers it unreliable and demands for its proper methodological use. Therefore, he will ask for a method that would exclude memory from deduction as much as possible, a method that would not allow for memory to play its role in full. Descartes says that 'a continuous movement of thought is needed to make good any weakness of memory' (Descartes 1985, 25), and that transitions of thought from one idea to another should be practiced by means of imagination, so that we could be 'simultaneously intuiting one relation and passing on to the next, until I have learnt to pass from the first to the last so swiftly that memory is left with practically no role to play, and I seem to intuit the whole thing at once' (Descartes 1985, 25). That is to say that memory is to be replaced with imagination that should bring the process of deduction close to intuition. However, Descartes seems to forget that this process of imagination, in order to enable such swift passing of thought from one idea to another, also has to rely on memory. It is unclear how memory should be canceled in such a methodological use of imagination, but it seems certain that it should be canceled, or at least transformed, so that we could pass from uncertain to certain knowledge.

Leibniz's account of memory is a Cartesian one in this respect as well, for he also tries to make methodological use of memory as a ground for reasoning and deduction. As Descartes, he finds memory in the fact of a simultaneous stream of ideas, as a necessary part of consciousness, which must, however, be sharply distinguished from reason as such: 'Memory provides a kind of *consecutiveness* to souls which simulates reason but which must be distinguished from it' (Leibniz 2012d, 645). It is important here to notice that such a difference between memory and reason is more important for Leibniz than for Descartes, given that the philosophy of Leibniz is metaphysically different from Descartes's. Namely, the difference between these two philosophers appears according to their metaphysical teachings, but its main impact is to be seen in their accounts of ideas.

For Leibniz, ideas are to be understood as perceptions: the concept of perception belongs primarily to Leibniz's metaphysics, and it refers to the monads. In Descartes, ideas are metaphysically *modi* of *res cogitans*, and they are therefore substantially different from the material objects, which are *modi* of *res extensa*. This means that, for Descartes, ideas of sensation are always uncertain and unclear, while ideas of pure reasoning, which do not rely on contents of sense perception, can be clear and certain. Also, this means that, for Descartes, there cannot be any confusion with regard to the difference between reason and memory, because memory encompasses both ideas of senses and ideas of reasoning. Such an understanding of reason and reasoning is essentially rationalistic: as we have seen, Descartes would very much like to exclude memory from the process of reasoning and

deduction in general, and to acquire pure rational and certain knowledge as a result. However, although a rationalist, Leibniz does not follow Descartes in this respect; as we will see, this will also change his understanding of reason and deduction.

In the first place, Leibniz, as we have seen, demands sharp differentiation between reason and memory, and he says that *memory simulates reason*. That is to say that the functioning of memory is, at least in part, similar to the one of reason; it is, therefore, important not to confuse one with the other. We have already mentioned that ideas in our mind are metaphysically perceptions of monads, whether they are ideas of senses or the ones that belong to the reason. The difference between those two kinds of ideas is in Leibniz accounted for in terms of their clarity, which refers back to their metaphysical grounds: namely, an idea is a way in which we humans are aware of perceptions of our monads (Jolley 2005, 69). The question of clarity of ideas is, therefore, the question of the way and the degree in which we are aware of our monads.

Namely, the main monad of a human being, our soul, is constituted of such perceptions that give rise to apperception – to us being aware of ourselves, to us being able to have ideas. In case of human beings, such a monad, apart from apperception, also has to have memory (Mates 1986, 198). However, to be aware of ourselves means not only to be aware of our soul, but also to be aware of our body. To be aware of our body, in turn, means to have an idea of us having a body: we have such an idea on the grounds that we, as human beings, are not constituted merely out of one monad, but out of the complex multitude of monads (Jolly 2005, 101); the one that makes our soul is the governing one. Nevertheless, the soul is the sole monad that has the ability for apperception, and therefore all ideas we are aware of are ideas and perceptions of the soul. Their content can be referring to the perceptions of the monad of soul as such, in which case we have 'ideas of reason', or to the other monads, in which case we have 'ideas of senses' (with the exception of God, who is also a monad, but who cannot be grasped through ideas of senses). Therefore, the idea of our body is an idea of soul, but its content is perceptions of our other monads: it is, in consequence, an idea of senses.

In turn, this means that human beings possess a multitude of more or less clear ideas – more clear ideas being the ideas of reason and the less clear ones being the ideas of senses (clear ideas as such are ideas that belong to God). This means that there is continuity between all ideas, that they are not essentially different – they are different only with regard to the intensity of their clarity. In consequence, this could also mean that we could wrongly take one idea for another, that is, that we could take memory to be reason, which is unacceptable for Leibniz. In order to exclude such cases, Leibniz also considers memory in context of the problem of attaining certain and valid knowledge, that is, in the context of making methodology for sciences out of similarity between the workings of reason and memory. This peculiar sense of memory we will address in the next chapter.

3. MEMORY AND LOGIC

To make use of the differentiation between reason and memory, Leibniz, just like Descartes, speaks of memory in terms of methodology. Namely, Leibniz also wants to reveal the function of memory in the process of knowledge, especially rational one, but he will not try to exclude memory from reasoning in the manner of Descartes. On the contrary, he will propose formal ways for its proper usage, which will, in turn, lead him to a most peculiar connection between memory and logic.

Namely, in *A New Method for Learning and Teaching Jurisprudence* Leibniz says that: 'Habits proper to man are either of *memory*, of *invention*, or of *judgment*. Hence there is a threefold doctrine of these habits - *mnemonics*, *topics*, and *analytics*' (Leibniz 2012b, 88). As we can see, memory is here closely connected with judgment, and the science of memory with the science of judgment. We should pay attention here to the fact that two of these 'doctrines', sciences, are obviously Aristotelian ones; it is *mnemonics* that is Leibniz's addition to Aristotle. Also, it should be noted that these are not three separate sciences, but one *threefold* doctrine: each of them gives an account of one of the human 'habits', but they are all interconnected because human knowledge consist of all three of them. Therefore, Leibniz continues: 'For propositions, which are of course distinctive for men only, can be memorized, made, or judged' (Leibniz 2012b, 88).

Once again, Leibniz is here in line with Aristotle and Scholastics, while he obviously speaks of *propositions*, and not of *ideas*. Contrary to Descartes, who already in *Rules* abandons logic (of Scholastics and Aristotle) as unfruitful and uncertain, and to Arnauld and Nicolle, who had reinterpreted Aristotelian logic in terms of ideas, making it more the problem of inner structure and the workings of the mind than the problem of language and inferences, Leibniz, in his usual manner, acknowledges the traditional perspective and starts with propositions – and not with ideas, or judgments, which would imply a position similar to the logic of Port Royal. Nevertheless, he starts with propositions, but reveals them from the perspective of the modern philosophy mind: although propositions are utterances, essentially linguistic in their character, they are, as we have seen, subjected not only to reason as such (judgment), but to all three indicated faculties of the human mind. That is to say that traditional logic - represented in terms of analytics and topics – is to be enlarged with mnemonics: the art of memory is now to be considered as close to logic, even as a part of it (Rossi 2006, 190).

The art of memory is by no means an invention of Leibniz; it is well known that the problem of memory was, especially during the Renaissance, seen as necessary and desirable part of the new approach to understanding of the (natural) world. In the case of Leibniz, an account of the art of memory is to be understood as relying on works of Giordano Bruno: Bruno searched for a kind of universal system of memory, based upon the images that are supposed to be directly connected to reality. Leibniz also proposes mnemonics as a science or art of memory which should present us with a universal memory system (Yates 2013, 380). However, contrary to Bruno, mnemonics is here seen as an addition to the traditional logic: 'Topics and analytics, moreover, are to be combined in the single term logic, so that the parts of didactics are mnemonics and logic. Methodology may well be added to these. Mnemonics establishes the matter, methodology the form, and logic the application of form to matter' (Leibniz 2012b, 88). As we can see, the science of memory is to be connected with logic, and, in turn, logic as *the application of form on matter* presupposes mnemonics and cannot be conceived without it.

Here we have a clear example of Leibniz's manner of approaching the matter: although he is interested in logic in a somewhat traditional sense, he is also a true modern philosopher, who works with ideas and tries to account for the functions of the mind, as well as for their results such as various sciences, in terms of ideas. That is to say that the above mentioned connection between mnemonics and logic, where logic presupposes mnemonics, means that any logical account of language and propositions has to rely on some account of consciousness and ideas. These are not – and this clearly presents Leibniz's inclination towards Scholastic tradition – the proper subject of logic as such; in

this respect Leibniz is discarding the project of Port Royal. Nevertheless, they are a kind of basis for logical operations of mind and therefore for logic as such; consciousness and ideas have to be understood as subjects of science that are close and similar to logic. Finally, given that logic is primarily concerned with deductions and inferences, it is a question of memory – a question of our awareness of the transition from one idea to another – that should be the main subject of such science.

Leibniz's attempt to invent universal calculus is very much determined by such an understanding of memory and logic. Namely, Leibniz intended to extend Aristotelian logic and to improve it, while he was not convinced that all arguments could have syllogistic form: such new logic he named *universal calculus* (Lenzen 2004, 5; Kneale 1971, 322). Universal calculus, which Leibniz most surprisingly combines with the *characteristica universalis*, the philosophical language, was supposed to be an apparatus that could be put to use universally, in all sciences. Philosophical language was conceived as a formal and symbolic language, such that could express concepts from all sciences – both mathematics and metaphysics, for example. On the other hand, universal calculus combined with such language was understood as a kind of algorithm that was supposed to enable us to combine words of formal and symbolic language into equally formal and symbolic propositions and arguments. Relying on this idea of combining various formal concepts, starting with his *De Arte Combinatioria*, Leibniz even tried to work out *ars inveniendi* – topics – the logic of invention: in his later life he understood this *ars combinatoria* as capable of dealing with concepts, and not only with mathematical symbols (Kneale 1971, 325-326; Rossi 2006, 179).

As such, the combination of universal calculus and philosophical language was supposed to help all sciences – and all men – to be as clear and as certain as possible. In this respect Leibniz's project is similar to Descartes's *mathesis universalis*: it should, in a formal way, allow us to understand the inner workings of scientific knowledge and to show the common features of all sciences. However, Leibniz enlarged Descartes's idea by going one step beyond mathematics: he returns back to the logic Descartes abandoned, and combines new mathematical knowledge with traditional formal logic. It is widely accepted that Leibniz's project had some success in mathematics, allowing for new notations and new kinds of calculus, but that he did not succeed in general (Yates 2013, 384).

However, Leibniz's *characteristica universalis*, as the basis for both analytics and topics, is a specific formal language, and not just a method of sciences. Leibniz is aware of the difference between grasping a clear idea and its verbal articulation. Namely, if we are interested in sciences, we also have to be interested in their language, because sciences are a matter of community and not just of an individual. As individuals, in our mind we can have clear ideas and certain knowledge, but to have science we must also verbally articulate such ideas in order to share them with other scientists. If this is the case, then the concepts of science and the way they relate to one another have to be precise and to be methodologically controlled, or else different men could understand them differently and as a consequence have different ideas than they should have.

However, the function of *characteristica universalis* in terms of forging and developing sciences is not primarily focused on the scientific community and the public character of science. It also refers to the very possibility of science with regard to the process of gaining knowledge that science presupposes. This is, in fact, a matter of memory, while science cannot be conceived as science of only one idea, however clear or certain such idea may be – it has to be a matter of interconnection of various ideas, of

various truths, and, of course, of the accounts and arguments that those truths indeed are truths. Here we are in the position to ask for the methodological use of memory once again, as it turns out that memory, as a precondition for the reason to be active, is also a precondition for any scientific knowledge and for any science. Therefore, memory also must be controlled, but it could only be controlled formally – in terms of formal consideration of memory – while memory in its workings is encapsulated in individual minds. The art of memory should, accordingly, enable us to bridge the gap between the individual mind and scientific knowledge: instead of canceling memory as a kind of subjective faculty that makes our knowledge doubtful, as Descartes did, Leibniz will try to reverse its Cartesian methodological treatment acknowledging that memory is a necessary condition of rational knowledge.

Like Descartes, Leibniz is trying to avoid the well-known unreliable nature of memory through its methodological control. However, he does so by linking memory with the workings of reason, i.e. with logic: their main connection is given with the philosophical language, *characteristica universalis*, and Leibniz thinks that such a language will help us control memory and he is convinced that, once it was learned, such language will never be forgotten (Rossi 2006, 181). This artificial language is, therefore, to fulfill the purpose of making memory reliable in the process of knowledge: it is intended to formalize the workings of memory by connecting them with formal and symbolic signs, characters, and with equally formal ways of their combinations. Because such language is an important part of making our reasoning as clear and as certain as possible, the role of memory in Leibniz's understanding of knowledge also is heavily stressed here.

Here we have a reversal of Descartes: although the art of memory, in Leibniz's works, will mostly be presented in form of various mnemonic techniques, in which he relies on tradition, it is *characteristica universalis* that really points to the way in which Leibniz understands memory. Namely, if mnemonics is a science similar to and close to logic, one would hope for it to present us with some kind of formal treatment of memory, similar to the one that logic presents with respect to the workings of reason. However, Leibniz is not only trying to formalize the workings of memory, while such formalization would have no desired impact on the way it is functioning in our mind. He turns to one possible usage of memory, in such a that he will not try to exclude it from the process of reasoning, but to make memory the cornerstone of fully reliable knowledge. With respect to memory as such, he will, therefore, speak of various mnemonic techniques: these are, of course, a kind of formalization, while they present us with forms of memory by putting aside any of its possible content. However, with respect to the process of knowledge, Leibniz will try to develop a kind of formal treatment not just of reason as such or of memory as such, but of their very connection, which is given in advance. In other words, he will try to formalize the very interconnectedness of reason and memory, exemplified in the fact that reason cannot act without memory to make it possible for us to see the transition from one idea to another.

Such formalization of interconnectedness of memory and reason in the process of reasoning and deduction is, yet again, given in a somewhat different manner than one would normally expect with regard to tradition. Firstly, it is not given in the form of the traditional art of memory, although Leibniz, as we have seen, deals with this science as well: Leibniz is here actually enlarging modern projects of *logica memorativa*, which regarded memory as a faculty that could keep the sciences and scientific knowledge in a methodologically fashioned order (Rossi 2006, 171). Secondly, it is not given in the form of

a syllogism or in the form of its pre-established (valid) figures, i.e. in the form of Scholastic logic. On the contrary, it is given as a formalization of *the process of thinking*, that is, in a manner of formalizing the process of reasoning. Such formalization is to be the main subject of *characteristica universalis*, while it is not only a formal vocabulary, but a formal language – language that can continuously give rise to new formal propositions, arguments and so on. Such language is, therefore, intended to formally describe the process of thinking, not just its elements and the rules of their valid combinations. Additionally, as we have seen, such language could, for Leibniz, even work in the context of acquiring new (formal) truths, and therefore it is a kind of precondition for *ars inveniendi*.

Therefore, the formalization of memory in terms of *characteristica universalis* is also understood here as a question of practical impact on the workings of memory. As we have seen, such formal language should be a remedy for the weakness of memory – but it should not be its cancellation. That is to say that, for Leibniz, memory has to be accepted as a necessary part of the knowledge process, one that cannot be directly formalized: it could only be formalized in terms of its consequences, both desirable and undesirable. *Characteristica universalis* is intended to be the solution of the problem of memory in both of these instances: it should help us avoid the problems that could arise from memory being unreliable, but it also should help us make use of the fact that we are beings of memory in order to get to reliable knowledge. In this second aspect, *characteristica universalis* finds its possible inventive role; memory is, therefore, equally applicable when it comes to the facts we already had the chance to deal with, as well as when it comes to the discovery of new truths. In this respect Leibniz's understanding of memory is completely different from that of Descartes.

4. CONCLUDING REMARKS

The problem of memory in the philosophy of Leibniz, as we have previously described it, is to be understood as one aspect of a more important modern problem of knowledge. This problem is subdivided into several parts: firstly, we have the problem of gaining knowledge in the first place; secondly, the problem of knowing if our knowledge is certain and reliable; and finally, the problem of sciences, i.e. of ordered and public knowledge everyone could rely on. To be able to deal with such a broad field of mutually interconnected problems, modern philosophers tried to find one common perspective that should equally give answers to all of them, which in turn orientated them towards the problems of methodology and the formalization of knowledge. For Leibniz, as we have seen, memory has its prominent role exactly here, in such a methodological and formalized account of knowledge, and therefore we can conclude that the problem of memory is in fact one of the most important problems for Leibniz.

The role of memory in Leibniz's philosophy, however, is rather different than in the thought of Descartes. Namely, Descartes' understanding of mind presents it as completely transparent and open for self-consciousness: unlike Leibniz, who acknowledges minute perceptions, the mind for Descartes is completely *given for* self-consciousness and *found in* consciousness. Because of that, when it comes to the content of our thoughts, in Descartes' opinion we could make mistakes only while our memory is not perfect and while it can distort the original idea the mind previously had (Simmons 2001, 71).

For Leibniz, memory is not primarily seen as the weakness of our thinking, but as its constitutive part. Given that for Leibniz ideas are metaphysically perceptions of monads, and that they can be more or less clear, his account of consciousness is much more flexible than Descartes'. Our human minds, as he claims, are aware of both sense-ideas and the rational ones; most of the time, he argues, we are like empiricists or like animals, dealing only with unclear ideas. So he says: 'Men act like beasts insofar as the sequences of their perceptions are based only on the principle of memory, like empirical physicians who have a simple practice without a theory' (Leibniz 2012d, 645). Memory is, therefore, understood as the principle of this non-rational part of our ideas: it is memory that we must turn to if we want to understand the manner in which such ideas are mutually interconnected. In this aspect, memory, for Leibniz, is similar to reason: both reason and memory are in the function of connecting two or more ideas. Memory will do so in an unclear manner, leaving us with the impression that it can deceive us; reason will connect ideas clearly and distinctly, leading us to proper knowledge, but in doing so it must rely on memory. Therefore, memory cannot be understood only as an obstacle for acquiring certain knowledge, but it has to be accepted as a necessary part of it.

Leibniz's attempts to work out implications of such understanding of memory led him to the unusual close connection between memory and logic, that is, between memory and scientific knowledge in general. The way he approached the matter, as we have seen, had its predecessors: from the traditional *ars memoriae* to the modern *logica memorativa*, modern age philosophy clearly understood that memory should be a part of formalized accounts of the structure and workings of knowledge. However, in the age that considered logic (of syllogism) as problematic, unreliable and non-inventive formalization of knowledge and accepted mathematics as another formal science that could take the role of logics in this respect, it was Leibniz who showed that these two perspectives could in fact be fruitfully and meaningfully connected. His accounts of memory are, of course, products of reason, but this reason is, in the manner of modern ages, aware of its own abilities and weaknesses. Therefore, memory is now considered as a faculty of the human mind that is to support the workings of reason.

In addition, it should be noted that the problem of memory, due to Leibniz's metaphysical teachings, is also very important when it comes to the question of how are we as humans able to understand the world we live in in the first place, specifically, how are we able to understand it metaphysically. That is to say that memory plays an important role in Leibniz's metaphysics and especially in the context of the question how metaphysics is even possible. Leibniz also makes use of memory when it comes to the problem of his more theological teachings, that is, to the problem of immortality of the human soul. These aspects of Leibniz's understanding of memory could not be precisely analyzed in this paper; however, if they are to be considered, it is our opinion that they should be analyzed with respect to the more methodological and epistemological aspects of this human faculty, such as those given in previous discussions.

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LAJBNIC O MEMORIJI I RAZUMU

U ovom radu bavimo se problemom memorije, kakav nalazimo u filozofiji G. V. Lajbnica. Lajbnicovo razumevanje memorije ovde analiziramo s obzirom na problem saznanja, odnosno s obzirom na način na koji memorija može uticati na operacije razuma. Analiza poredi Lajbnicovo i Dekartovo razumevanje memorije: u radu ispitujemo u kojoj je meri Lajbnic bio pod Dekartovim uticajem kada je reč o memoriji. Analiza rezultuje zaključkom da je memorija za Lajbnica, nasuprot Dekartu, nužan i integralni deo saznanja, a samim tim i metodologije nauka. Imajući to u vidu, analiza takođe ukazuje na Lajbnicovo razumevanje dve moguće formalizacije memorije: jednu predstavlja veština memorije (ars memoriae), a druga predstavlja deo filozofskog jezika. U oba slučaja Lajbnic memoriju razume kao blisku logici i sa njom povezanu. U radu zastupamo stav da je druga formalizacija, ona koja je data sa filozofskim jezikom, pogodnija za tumačenje načina na koji Lajbnic razume memoriju zbog toga što je formalni i simbolički jezik neka vrsta preduslova za formalni pristup načinu na koji se odvija mišljenje uopšte – kako u pogledu legitimacije znanja kao izvesnog i pouzdanog, tako i u pogledu iznalaženja novih znanja. Konačno, ovakvi rezultati pokazuju da problem memorije u Lajbnicovoj filozofiji treba razumeti prvenstveno kao problem metodološkog i epistemološkog karaktera. Drugim rečima, oni pokazuju da druge aspekte Lajbnicovog pojma memorije, kao što su metafizički i teološki, treba tumačiti s obzirom na metodološki smisao ovog pojma.

Ključne reči: *G. V. Lajbnic, memorija, razum, logika, ars memoriae, znanje.*