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Thinking as a Philosophical, Theological and Psychological Phenomenon

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THE TEACHER: One can grasp the essence of the nature of thinking only if we turn back from thinking.

[1, p. 31]

Abstract

The chapter presents a concise history of the comprehension of thinking through all ages of Western culture, from Greek pre-Socratics to today's radical constructivists. The analytical presentation identifies principal structures and paradigms inherent in Western thinking over thinking. The first and most long-lived of them is what I call the pre-Socratic matrix: a structure comprising two kinds of thinking, namely, "ontological thinking" (a universal collecting-and-uniting activity) and the "individual thinking" (belonging to an individual human) connected with each other in some way. The exposition represents brief descriptions of the set of principal landmarks in the history of thinking. Thinkers chosen as the landmarks are as follows: pre-Socratics (Parmenides and Heraclitus), Aristotle, Thomas Aquinas, Descartes, Hegel, Husserl, Heidegger, and Wittgenstein. Besides the landmarks, principal theories and conceptions of thinking created in the last century are described as well, such as the cultural-historical psychology of Lev Vygotsky, the conception of the action-thought by Georgy Shchedrovitsky, heterophenomenology of Daniel Dennett, and theories of enactivism and radical constructivism. The text concludes with a discussion of the present status of the problem of thinking.

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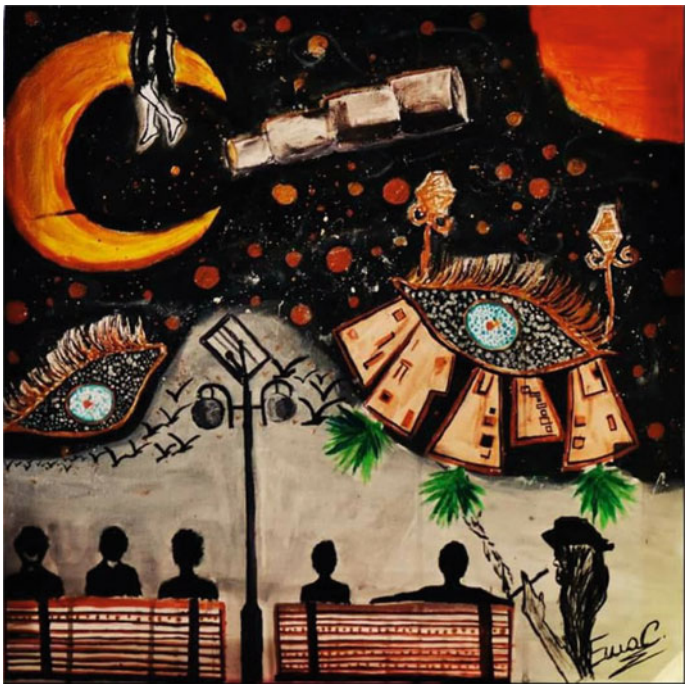

Multidimensional thinking (*Adapted with permission from the Health and Art (HEART), Universal Scientific Education and Research Network (USERN); Painting by Emanuela Ciupa*)

Keywords

Cognition · Epistemology · Mind · Ontological thinking · Pre-Socratics · Phenomenology · Radical constructivism · Thinking

QR Code

Scanning the QR code directs you to the word cloud of the chapter that is made up of the words we discussed throughout the whole book in relation to the chapter's keyword, which is intentionally not included in the word cloud. Find the keyword and put it in place in the puzzle according to the clues provided in Chap. 36. The mystery hidden in the puzzle is the quote of *THINKING: Bioengineering of Science and Art.*

Introduction: How to Approach Thinking?

According to the quoted words of the Swabian Teacher, thinking is surely one of the most controversial, elusive, and even mysterious subjects of our thinking. It would be natural to begin the systematic presentation of this subject with its formal definition. Such definitions abound in literature, but, as a rule, on closer examination, they turn out to be insufficient or incorrect or both.

For example, here is the definition found in a recent huge *Philosophical Encyclopedia*: "The thinking is the process of solving problems, which represents the transition from conditions determining the problem to the achievement of the result. The thinking involves constructive activity of restructuring the initial data, their breaking-down, synthesizing and complementing" [2, p. 626]. This formulation is not too long, but it contains multiple lacunae and implicit assumptions. What does the "problem" mean here? This term cannot be part of a definition because it needs a definition of its own. Moreover, such a definition would refer to a complicated context with many elements, which, in their turn, need to be defined. The term "process" also conceals important elements that need clarification. Is it a process in the empirical space–time? Where does it unfold? What is the substance of the process? Is it performed by some acting agent? Evidently, the context suggests implicitly that the thinking is a certain human activity, and the process in question is a mental process. But it means that, when it comes to the test, the definition implicitly involves some undefined things of both anthropological nature (human activity) and psychological nature (mental process). And these things are big and obscure: What is human? Must "mental process" be conceived as a process in the

brain or consciousness or mind or somewhere else? All these options lead to very different conceptions of thinking. As a result, we conclude that the definition discussed is strongly deficient; it is only a pseudo-definition.

Now, let us take another example from the last period of classical metaphysics. At the beginning of the 20th century, the basic reference book in general philosophy was the fundamental *Wörterbuch der philosophische Begriffe* by Rudolph Eisler. Here the definition is split into two parts: "(a) Psychologically: [the thinking is] apperceptive activity, inner action of the will, by means of which representations are decomposed into elements, compared to and connected with each other, are acknowledged as the unity and intentionally and purposely joined together. Thus, the thinking is the analytic-synthetic, comparing-connecting, selecting, distributing priorities, restrictive (*hemmende*) activity, which presupposes associations, but is not an association; it forms-up associations actively and spontaneously, creating mental combinations. (b) Logically: the formation of notions, judgments, conclusions, of which that of judgments is the principal function. The (desired) function of the thinking is the establishment of objectively valid connections in the set of possible representations and notions, the search for truth, bringing-forth of the definiteness into the indefinite, the formation and division of the content of a representation into structures, in which the reality, the being of objects comes to the (symbolic) expression…. The concrete thinking works with visible images (*Anschauungen*) and images of recollections, the abstract thinking with notions, which are decomposed and united by it, and this is impossible without language" [3, p. 213].

This definition does not contradict the previous one but is noticeably different from it. Its advantage is that it is more systematic and scrupulous so that the conceptual context is now well-defined: the thinking has two principal aspects or dimensions, namely psychological and logical, which means that it is the activity, respectively, of human consciousness and the human mind. The thinking functions are basically the same in both definitions, but in Eisler's case, they obtained a more detailed and profound description. Nevertheless, the advantages of this very careful definition make it even more visible that it is also grossly incomplete. In several points, it includes undefined but highly meaningful terms with functions of prime importance in the discourse: will, truth, language. Each of them brings the definition out to some unknown semantic space so that it becomes an open text drastically different from an accomplished definition.

One can find many more definitions in philosophical and psychological literature, and the quality of the incompleteness and the absence of semantic self-sufficiency are common to all of them. History of the problem shows clearly that any definition of the thinking includes necessarily some undefined components, and any attempt to define these components would reveal in them, in their turn, new undefined components, and so on; and this *regressus* ad infinitum makes it impossible to achieve the accomplished definition. One must conclude that the thinking belongs to a certain specific kind or class of entities that cannot be given a rigorous definition. Characteristically, Martin Heidegger's text devoted especially to the concept of thinking does not manage to get any definition and leaves the

problem open, ending with the question: *Was heisst Denken?* What is the thinking? [4, p. 17]. In logical terms, entities of this class belong not to phenomena *explanandum* but to those *explanans*. Undoubtedly, there are many particular kinds or concrete acts of thinking, which can be described and explained comprehensively, but they cannot exhaust the phenomenon of thinking as such. This makes us infer that things *explanans* possess some quality or predicate or dimension absent in things *explanandum*. In order to discover such a specific quality, we are going to begin *ab ovo*, from the most general principles, trying to see someplace, *locus* or *topos*, in their configuration, where the thinking could be located.

The very first principle that must be present in this configuration, which we shall call "the ontologic," is ***Difference***. The main reason for the primacy of the difference in the ontologic is its direct connection with what is, according to Heidegger, "fundamental question of metaphysics:" "Why are there entities (*Seiende*) rather than nothing?" [5, p. 3]. The answer to this question is exactly the difference: the existence of the difference means that there are certain things (= entities), which makes them different from each other. By definition, as things are different, entities are plural; hence, the existing reality or "present being" or the All is a plurality, the set of all entities. But, on the other hand, the All is one. By the mode of its existence, the All is given as a plurality, yes, but at the same time, it is inevitably considered as a single whole, as one; in other terms, we associate the All with the predicate of unity. As a result, the All is provided with two opposite predicates; it is both a plurality and a unity. But these two predicates are possessed by the All in two different ways. The All is a unity in a manner and, in a sense, radically different from those in which it is a plurality. In its present being, as empirical reality, the All is a plurality and nothing else, the pure plurality as such. It is a unity when it is considered by our mind that is in the representation or in the idea. It is also a certain mode of existence/being, and this mode is evidently different from a present being. We know nothing about this other mode of being, but we cannot reject it a priori as something fictitious.

This observation is an important contribution to our ontologic. It means that, besides the usual mode of existence of any entity, there is also another mode: the mode realized by the All-as-Unity. There is the "All-as-Plurality" and the "All-as-Unity," and "is" has a different meaning for them. In the first case, "is" means the existence or present being of any entity, while in the second case, it means the mode of existence of the One, the All as a single whole. And it is this mode that represents "is" pure and simple, "is" in its accomplished fullness. This pure "is" the mode of existence of the One, the All-as-Unity we shall call "***being***." Principles and notions connected with being will be called ***ontological***.

The way by which being enters our ontologic shows that it is a principle related closely to thinking. The key point in the above reasoning was the observation that the All exists as Unity "in the representation or the idea." From here, one can easily draw the conclusion that the All-as-Unity exists in the human mind, and hence it is nothing but a product of human thinking. Such a conclusion would be too hasty, however. One must slow down and look at the elements of the ontologic more closely.

What is necessary for the All, which is a plurality, to become Unity? Evidently, the All must be taken in the prism of a certain relating, collecting, connecting, and uniting activity. This activity is a new principle, which must be added to our ontologic. But we have no sufficient reasons to identify this principle with human thinking conceived as the ability of an empiric individual. On the contrary, we know that in most cases, this empiric thinking, being sound and fully-fledged by all criteria of human thinking, still is far from being able to collect and unite the All. Sure, it is a collecting and uniting activity, but in all such cases, it is simply not powerful enough. Hence it follows that at the initial stage, at least, we must distinguish between the human thinking inherent in empiric individuals and the activity shaping the All-as-Unity, which must be considered so far as an ontological principle on its own. The relationship between these two activities, respectively, empiric and ontological, is completely similar to the relationship between present being (= being of entities = being of the All-as-Plurality) and being as such; it is an exact parallel to this relationship in the predicative discourse. Based on this parallel, *the ontological activity that collects and unites the All constituting the All-as-Unity can be conceived as the thinking as such*; it can also be called the ***ontological thinking***.

Now we see why the thinking cannot be given an accomplished definition like ordinary things *explanandum*. It is its connection with being or, in other terms, the fact that the thinking is endowed with the ontological aspect or dimension. We also see the locus of the thinking in the ontologic of Difference: the thinking is closely connected with being and the empiric (human, individual) thinking. Thus, the study of the thinking as such must start with two ontological problems dealing with its relationship, respectively, with being and with the empiric thinking.

Coming to this conclusion, we notice that the treatment of the problem of the thinking in our ontologic of Difference almost copies the approach to this problem at the earliest origin of philosophy, in the thought of pre-Socratics. That approach recognized the ontological nature of the problem right from the outset. The Milesians starting with Thales, stated that the All is unity, while later pre-Socratics discovered a specific ontological status of the All-as-Unity and thematized the ontological difference between being and the entity. Parmenides focused on the connection of being and the (ontological) thinking, and Heraclitus concentrated on the relationship between the individual thinking ("logos of the soul," in his terms) and the ontological thinking (Logos as such or "Logos itself"). Subsequent philosophy followed this line, and the thinking was firmly, with rare exceptions, treated as an ontological principle. However, this situation changed in the last century: as we could see, both Eisler's definition (1910) and Lektorsky's definition (2001) do not mention the ontological dimension of thinking. What happened in the history of thinking was pushing away, forgetting, and sometimes outright denial of ontological aspects of the thinking. In the light of this, our presentation of the thinking as one of the principles in the ontologic of difference can be considered a reminder of and the introduction in the ontological context of the problem. Next, we turn to reconstruct this context in the diachrony, tracing its principal stages and conceptualizations briefly. Then we shall describe the later stages of the problem when it was gradually losing its ontological dimension.

Concise History of Thinking Over the Thinking

Indisputably, it is the pre-Socratics who opened up the Western history of thinking about the thinking. Their philosophizing was of a special type: they had no systems, theories or concepts, but possessed a specific philosophical vision, which made the ontological dimension of reality directly evident and accessible to them. Articulating their vision, they tried to describe this dimension, but their work has reached us in disjoint fragments only. Foundations of the discourse on thinking were established by ***Parmenides***. Certainly, the thinking is conceived by him as the ontological thinking, a general collecting-and-uniting element or activity, which must be there if the All is unity.[1] The central theme of his discourse of thinking is the relation between thinking and being. The only known Parmenides" work, the poem "On Nature," is written in a strong, laconic, and categoric style and the relation in question is summarized here in two brief formulas: "Thinking (*noein*) and the thought that it is (*noema*) are the same" (Fragment 8, 34); "For to be aware (*noein*) and to be are the same" (Fragment B 3). Taken together, they represent a fundamental ontological thesis known as "Parmenides" identity of being and thinking."

This formula is too simple, however. The relationship between the two principles is most intricate, and new interpretations have been produced until now. Of course, the fragment (B 3) is a direct statement of the identity, but this statement is purely declarative and enigmatic without further explanations. Such explanations are provided by (8, 34), and also by (6, 1–2) and (8, 36): "What can be spoken and thought is; for it is possible for it to be, and it is not possible for what is nothing to be" (6, 1–2); "There is not, and never shall be, anything besides what is" (8, 36). It means that the object of thought ("what can be thought") does exist, and the only existing entity is "what is" (*estin*) that is being, whence it follows that the object of thought is being. And now the (8, 34) adds the decisive final point. It refers to the crucially important difference of thinking from all other activities: the thinking does not use any tools different from itself, and the object of thought is an *intelligible* object; in other words, it is thought too. Thus, thinking and the object of thinking coincide.[2] But, as shown above, for Parmenides, the object of thought is nothing but being, and, as a consequence, we come exactly to the thesis (B 3): thinking and being are identical.

Parmenides's identity is the first cornerstone in the big Western tradition of thinking about thinking. In no way is it a solution to the problem of thinking, but it is the best way to enter this problem. It makes one ask many further questions. First of all, we see that the problem of thinking includes that of identity. Clearly, being and thinking are not the same thing in the sense of the formal tautological identity

[1] This key discovery of pre-Socratic thought, "the All is unity," is clearly stated by Parmenides, cf., e.g.: "… epei nyn estin homou pan hen syneches… now "it is," all at once, one, continuous," Fragment 8, 5–6. transl. by J. Burnet.

[2] Let us note that this conclusion is valid equally if thinking is conceived as the "ontological thinking," a generalized collecting-and-uniting activity.

A = A. It is impossible for many reasons. The first is that the poles of the identity are of different nature: thinking is a certain activity while being, as Parmenides insists, is the immobility and absolute rest. Then how must the identity be conceived? That is how another big problem of Western philosophy is opened, which has a long history. The solutions were looked for in two directions: on the one hand, alternative, non-tautological conceptions of the identity were propounded, and, on the other hand, many modifications of Parmenides's treatment of being were suggested, which complemented being with some aspects that now, after Aristotle has introduced the notion of energy, are usually called energetic and dynamical. We mention just two examples: a "weak form of identity" was suggested, according to which being and thinking are related coextensively (A.A. Long); another suggestion was to admit that being constitutes a necessary condition for thinking.

Another problem associated with Parmenides's identity is that of individual thinking. Evidently, it cannot be identical to being, so what is it? Just something seeming and illusionary, from the domain of opinions, *doxai*? What is its relation to true, ontological thinking? Parmenides's poem does not answer these questions.[3] But they belong to central themes of ***Heraclitus***, another great pre-Socratic thinker.

Due to the striking contrast between both ideas and styles of the two thinkers, their teachings are traditionally considered as opposite to each other in the history of philosophy. Now such a view is rejected; according to a recent capital study, "With both Heraclitus and Parmenides corresponding to the "One" and the becoming to the multiple conceived as the set of all pairs of the opposites. And… in both cases, the One is conceived as an intelligible truth, while the multiple as an illusion caused by the delusion of sensory perceptions. The only difference is that in Parmenides, the ontological Absolute is unchangeable and immobile, while in Heraclitus it is full of energy, motion and the incessant cyclic change" [6, p. 53]. One must add that Heraclitus's discourse is also full of metaphors and allegories, enigmas, and parables, so those special hermeneutics are needed for extracting his philosophical positions out of this striking and completely unsystematic abundance. Taking this into account, we restrict ourselves only to main subjects concerning our theme, namely the thinking. All this theme is organized around one key principle, the ***Logos***.

It is impossible to translate this Heraclitus's "groundword" (Heidegger's term) with any single term. Both in Heraclitus's discourse and in the common Ancient Greek usage, it is an extremely polysemantic word. According to Heidegger, it is a word of "boundless scope of meaning," and in Heraclitus's universe, it is an all-embracing and ubiquitous element. In the rich ensemble of its meanings, we find nearly all other "groundwords" or ontological principles: Heraclitus's Logos represents the cosmos and being, the All and the One; at the same time, it keeps its usual meanings such as word, speech, measure, or volume, etc. As for its relation to the thinking, it can be reconstructed via its connection with the key thesis "The All

[3] Although it mentions human thinking briefly: according to the Fragment 16, "thought … does come to men", and, coming to men, it keeps the principal property (8, 34) of the ontological thinking, "that which thinks is the same [as thought]"; at the same time, it is close to the sensation.

is unity": as we can see, this statement implies the presence of the ontological thinking, which is exactly the activity that represents the All as unity. Such a connection is firmly established, in particular, by one of the most important Heraclitus's fragments: "*ouk emou alla tou logou akousantas homologein sophon estin hen panta einai* – It is wise to hearken, not to me, but to the Word, and to confess that all things are one."[4] According to this fragment, if we have enough wisdom to hear the Logos, we spot the All in the Logos and find that the All is one or unity. In other words, it is the Logos that makes the All unity, which means that Logos is involved in a collecting-and-uniting activity, and hence represents what we call ontological thinking. Since it also represents being, we deduce that in Heraclitus's philosophy, the Parmenides's identity of being and thinking is implicitly present. Taking into account that Heraclitus's Logos is "full of motion and change," we also conclude that being of Heraclitus, contrary to that of Parmenides, is a dynamic principle.

It is time now to recall that our notion of ontological thinking is a general ontological principle or "groundword," which significantly differs from the usual conception of human thinking. The latter is very close to such concepts as (human) mind and reason, but it was noticed by scholars that Heraclitus avoids identifying his Logos with these concepts: "Nowhere in Heraclitus' texts the term logos means "reason": it is a later, basically Hellenistic meaning of the word" [6, p. 104]. However, there is another ontological principle in Heraclitus's discourse that is closely related to human individual thinking. It is the "***logos of soul.***" The soul (*psyche*, *anima*) in ancient philosophy is the essential quality of living, animated beings, and the specific distinguishing feature of the soul of a human is that it is endowed with logos. But the "logos of soul," which belongs to the human, is in no way identical to the logos as such or Logos. What is it then?

In Heraclitus's context, it is the principal predicate of the human soul often translated as its "measure," like in the key fragment 67/45: "*psyches peirata ion ouk an exeuroio, pasan epiporeuomenos hodon houto bathyn logon echei* – You will not find the boundaries of soul by traveling in any direction, so deep is the measure (logos) of it." Other fragments say that the logos of soul is endowed with the power of the unbounded expansion (cf. The fragment 112/115 from the Dubia: "*psyches esti logos eauton auxon* – To the soul belongs the self-multiplying logos."). But the real nature of this logos (sometimes called "small" or "human," in contradistinction to the logos as such or Logos) and the most essential of its properties we discover focusing on its relation to the Logos. This relation is not presented explicitly, and its reconstruction is one of the central problems in Heraclitus's studies. The necessity and importance of the relation can be seen by simple reasoning. Heraclitus states that it is good and desirable for the soul to be dry and [5]not humid. But the dryness is the effect of heat and hence also of fire, while the fire is Heraclitus's groundword closely connected with the Logos (they both rule the Cosmos and are identified with Zeus, etc.). Hence it follows that the "wisest and best" soul and its logos are

[4] Fragment 26 (by Markovich)/50 (by Diels-Kranz), the translation of John Burnet.
[5] cf. 68/118: "auge xere psyche sophotate kai ariste – The dry soul is the wisest and best".

connected with the Logos, and the character of this connection is such that the soul and its logos are accessible to the effect of the Logos.

Much more can be said about this connection if we look more closely at the key fragment 26/50. It describes a "wise" position of the human, which allows him to discover the truth that "all things are one." This position is to "hearken the Word (*Logos*)," which means getting in touch with the Logos and following and obeying its call. Such hearing and obeying collaboration of the human, the soul, and the soul's logos with the Logos are expressed by the verb *homologein* that means literally "to speak the same." Thus, we can conclude that the position described grasps the very nature of the logos of soul: its mission is to hear the Logos and speak the same or, in other words, to establish the relationship with the Logos and act in accordance with the latter, in the same way. Essentially, it is the same conclusion that Heidegger has drawn in his scrupulous analysis of the relation between the two Heraclitus's logoses: "The 50th fragment speaks about the homological relation of the human "logos" to the "Logos" itself… Human association with the Logos is *homologein*" [7, pp. 362, 428].

Coming back to the problem of thinking, we find that Heraclitus contributes some important content to the Greek treatment of this problem. In his philosophy, there are two different principles, the Logos (= the logos as such) and the logos of soul (= the small logos = the human logos), the first of which can be associated with the ontological thinking, in our terms, and the second one with the human individual thinking. One can also reconstruct from this philosophy what is the relationship between the two principles: the logos of soul (respectively, the human thinking) must actualize its relation to the Logos (respectively, the ontological thinking) and act in the same way as the latter. In other words, human thinking must participate in ontological thinking, and such participation is its only constitutive activity, a kind of its definition. Thus, the nature of human thinking is relational; one can say that this thinking is nothing but human's relation and orientation to the Logos. The constitutive relation to the ontological thinking is very individual: Heraclitus's view of the human is aristocratic. He holds that most humans are those who "don't understand," "humid souls" that cannot actualize their relation to the Logos. This relation is also dynamic: its actualization is a process in which the participation of the human logos in the Logos becomes more and more complete.

Summing up, we see that the pre-Socratics possessed and cultivated a generalized vision of the thinking, which did not restrict it to the activity of individual humans. Such a vision has let them develop a certain approach to the problem of thinking based on distinguishing between two different kinds of thinking, the generalized collecting-and-uniting activity, by virtue of which the All is One (we call it the ontological thinking), and the individual (human, empiric) thinking. This distinguishing was inherited by the subsequent philosophical tradition, and for many centuries the relationship between the two kinds of thinking became the main subject of the problem of thinking. This relation evolved in the course of history in a very definite way. The origin of the tradition was Parmenides's philosophy with its radical ontologism, and here the ontological thinking had the absolute priority, while the individual thinking was hardly visible, having an insignificant and rather

indefinite role and status. However, Heraclitus paid to the individual thinking (the logos of the soul) more attention, and due to this, the relationship in question was presented more clearly and precisely. Looking at the pre-Socratics à vol d'oiseau, we conclude that they have created the configuration of ontological principles that can be considered a paradigm or matrix for treating the problem of thinking. Western philosophy inherited this matrix and was guided by it during a very long period up to the end of classical metaphysics. The matrix represents basically the set of two kinds of thinking, the ontological and the individual, and the connecting principle of the participation of the latter in the former (the Heraclitean principle *homologein*).

The most general sense of this pre-Socratic matrix is the discovery that the thinking represents the unique ability to actualize a certain meta-empirical or "ontological" dimension of reality (in Heidegger's terms, to actualize the ontological difference between empirical entities and being). This surprising discovery, like Pandora's box, opens a vast set of fundamental questions and problems. The first and central of them is the mode of existence in this new dimension. *What is intelligible reality?* A priori plenty of options are possible here, from the Parmenidean standpoint, according to which the ontological dimension of being is the only true reality that is, to the predominant position of modern postclassical philosophy, according to which the dimension in question is not a self-consistent reality, but only an epiphenomenon of the activity of the human brain.

The story of the problem of thinking unfolds in the space between these two extreme poles. The general trend of the philosophical development was the gradual reduction of the distance and the difference between the two kinds of thinking. This process was one of many parts and aspects of the global cultural development that proceeded, in a grossly averaging view, in the direction of the emancipation and secularization of the human mind, the affirmation of its self-consistency and self-sufficiency. One of the first steps in this direction was the interpretation mentioned above of the Logos as the reason that took root in Late Antiquity and ascribed to the Logos closer ties with human rational thinking. In the final stages, during the crisis and the rejection of classical metaphysics, the ontological thinking was more and more drawn in the individual thinking, and eventually, in modern theories like analytical philosophy and cognitive science, it disappeared completely, with some of its dimensions and functions canceled and others transferred into the individual thinking. In terms of the opposition of principles of the transcendent and the immanent, such course of things can be qualified as the ***process of immanentization***. In what follows, we present the principal landmarks of this process.

For many centuries the word "philosopher," when mentioned without a concrete name, meant ***Aristotle***. And for a good reason: the entire conceptual framework of European philosophy has been created by him. The problem of thinking is no exception: in his all-embracing system, this problem is one of the central themes, and it is elaborated in great detail. Although he usually criticizes his predecessors (in particular, Parmenides), but *grosso modo*, his conception of thinking preserves the pre-Socratic matrix: it can be considered as a structure that includes two opposite poles corresponding to the ontological and the individual thinking added

with the set of connections between these poles, and also some intermediate or hybrid types. The Aristotelian discourse of thinking (*dianoia, noesis*) develops chiefly as the discourse of mind (*nous*, also translated as thought) since "The motion of mind is thinking" (De Anima, 407a 20, transl. by J.A. Smith).

Let us first describe the ontological pole. Aristotle's thought is predominantly rationalistic, and his discussion of ontological subjects is usually rather cautious and laconic. There are few texts devoted to these subjects, and the principal of those that consider mind and thinking, are *Metaphysica*, Book XII (esp. Chapters 7–9), and *De Anima*, Book III, Ch.5. Here, we find that there is one exceptional kind of mind in the rich spectrum of its varieties, which is surely of ontological nature. In *De Anima*, it is called the active mind and characterized as follows: "One sort of mind (*nous*) exists by producing all things… like light… This mind is separate, unaffected, and unmixed, being in its essence actuality… this alone is deathless and everlasting… whereas the passive mind is perishable. And without this, nothing thinks" (De an. 430a 14,16–17, 23–25). Aristotle's thought usually tends to represent reality in the hierarchical paradigm, and he asserts that this sort of mind is the highest of all. In *Metaphysica* XII, this sort is presented in a more detailed way. It has two most important distinctions:

i. it is of divine nature; and
ii. the only object of its thinking is itself.

The closest connection of (the highest) mind/thought (*nous*) and God is stated repeatedly. Cf., e.g., "Thought is held to be the most divine of things observed by us" (Met. 1074b 16, the translation by W.D. Ross); "It [the highest mind/thought] thinks of that which is most divine (*theon)* and precious, and it does not change" (Met. 1074b 26), etc. Taken together, these two statements say that the highest thought and its object are both divine. Like in *De Anima* III.5, Aristotle states the active nature of the highest mind/thought again, stressing that it is not potency but the very act of thinking, actuality. And it is exactly its full actuality that makes it divine or even directly God: "The actuality of thought is life, and God is that actuality" (Met. 1072b 27). In most cases, Aristotle's discourse is vague on the subject of whether something called divine belongs actually in God or it is only a certain entity or a constituent in the human soul partaking of God. However, the last assertion is unambiguous, and it brings us the right to the conclusion that *the highest mind and God are the same*.

This ontological identity is considerably enriched when we take into account principal predicates of both its sides. For the highest mind, it is the property ii above, which lets us get deeper into the nature and structure of this sort of mind. According to Aristotle, "thinking in itself deals with that which is best in itself, and that which is the thinking in the fullest sense with that which is the best in the fullest sense. And thought thinks on itself because it shares the nature of the object of thought… so that thought and object of thought are the same" (Met. 1072b 18–22). Since the best in the fullest sense is divine, this characteristic of the mechanism of the highest mind shows the divine nature of the latter, and the further description

reveals that this nature is eventually nothing but the thinking on thinking or (self-) contemplation (*theoria*): "The possession [of the object of thought] is the divine element which thought seems to contain … It must be of itself that the divine thought thinks (since it is the most excellent of things), and its thinking is a thinking on thinking … The act of contemplation is what is most pleasant and best" (Met. 1072b 23; 1074b 34; 1072b 24).

On the other hand, God is characterized as the first or unmoved mover *to proton kinoyn*, another fundamental principle of Aristotle's system. It is introduced and discussed in detail in his theory of motion presented in *Physica*, Books VII and VIII, while in *Metaphysica* XII, he establishes its connection with–in fact, its identity too–God. "There is something which moves while itself unmoved, existing actually… being eternal, substance (*ousia*) and actuality… The first mover, then, exists of necessity, and in so far as it exists by necessity, its mode of being is good, and it is in this sense a first principle … On such a principle, then, depend the heavens and the world of nature. And it is a life such as the best… it is ever in this state, which we cannot be" (Met. 1072b 7, 1072a 25, 1072b 10–11, 1072b 14–15). Evidently, this description corresponds fully to God.

Summing up, we find that principal Aristotelian positions concerning ontological thinking can be brought together in the form of an ontological identity:

$$\begin{aligned}\textbf{The highest mind/thought} &= \textbf{The thinking on thinking}\,(\textbf{contemplation})\\ &= \textbf{The unmoved mover} = \textbf{God}\end{aligned}$$

The question arises unavoidably about the relation of this identity to Parmenides's identity of thinking and being. Formally, we could say that the latter is present in Aristotle's ontology, at least, implicitly: indeed, if one more ontological identity, that of God and being, holds (which takes place in most metaphysical systems after Aristotle), then, by virtue of transitivity, the two identities, respectively, of the (highest) mind and God, and of the God and being, imply the identity of the highest mind and being, which is at the same time the connection of thinking and being since "the motion of mind is thinking." This reasoning is too superficial, however. In contrast to Parmenides's epic discourse with the absolute primacy of being, Aristotle's big and subtle system is centered more on the principle of substance, *ousia*, and includes a sophisticated net of various kinds and sorts of being so that Stagirit never characterizes the relationship between thinking and being as a plain identity (although he accepts another basic thesis by Parmenides, that the (ontological) thinking and the object of thought are the same).

Finally, we should mention that the highest mind (and hence also other principles in the ontological identity) has an important ethical dimension: its basic predicates include happiness (*eudaimonia*) and pleasure. In Aristotle's ethics, happiness is the supreme good, and since the thinking on thinking (contemplation) is the best of all kinds of activity, he concludes that "perfect happiness is a contemplative activity" (Nic. et. 1178b 8). This is equally true for God and man. The closely connected ethical principle is pleasure, and so "the act of contemplation is

what is most pleasant and best" (Met. 1072b 24), and "its [the first mover's] actuality is also pleasure" (Met. 1072b 16). The general conclusion is that "for man … the life according to reason (*nous*) is best and pleasantest… This life is also the happiest" (Nic. et. 1178a 8).

Turning to the pole of the individual, common thinking, we find that it is not so much the opposite to ontological thinking as its dependent and imperfect form. Aristotle's thought, moderate and well-balanced, prefers subtle differentiations to sharp oppositions similar to Parmenides's oppositions of Being and Non-Being (*estin, to on* vs. *ouk on*) or truth and opinion (*aletheia* vs. *doxa*). Thus, the two kinds of mind/thought are related as the practical mind, directed to external goals, and the theoretical or contemplative mind directed exclusively to itself. The principal difference between them is that the former corresponds to the kind of mind, which is only "the faculty of thought," a potentiality, while the latter represents the mind in its actuality, *entelecheia*. "It thinks, but this depends on something else… that which is its substance is not the act of thinking, but a potency [so that] it cannot be the best substance" (Met. XII 1074b 18–20). As directed to some external goal, this kind of thinking is not self-sufficient but deficient compared to pure contemplative thinking. However, it can change and can diminish its deficiency. To some extent, the relationship between the two kinds of thinking follows the general paradigm of the Aristotelian hierarchical reality, according to which imperfect entities yearn to become more perfect. This paradigm that manifests itself in many contexts is rooted in the relationship between matter and form, which is described as follows: "There is something divine, good and desirable… there are two other principles, the one contrary to it, the other such as of its own nature to desire and yearn for it. … The form cannot desire itself, for it is not defective… The truth is that what desires the form is a matter as the female desires the male and the ugly the beautiful" (Phys. I.9 192a 16–24). Thus, we can say that common thinking is such that its own nature makes it desire and yearn for pure contemplative thinking.

Aristotle's method of analysis of thinking as well as of other phenomena is often called *hylomorphic* because it is based, as we have just seen, on general principles of matter (*hyle*) and form (*morphe)*, the relationship between which is described by the set of the four causes (material, formal, efficient, and final). Individual thinking is one of three basic faculties of the soul: nutrition, perception, and mind. The distinction of the mind is that it is connected with the body in no way: "Mind… cannot reasonably be regarded as blended with the body" (De an. III.4 429a 24). The hylomorphic reasoning produces a more precise comprehension of the key property of thinking: the thinking and its object are the same. Stagirit finds that "the same" in this formula should mean not the plain identity, A = A, but an isomorphism that is the coincidence of forms since "It is not the stone which is present in the soul, but its form" (De an. III.8 431b 29). The idea that the mind becomes isomorphic with its object implies that the mind is conceived as a unique faculty having unconstrained plasticity and an unbounded range of potentialities as soon as it is capable of acquiring any form of any object. Then, thinking is the activity that grasps structural features of objects of thought and cognition and creates isomorphisms between these objects and the potential or virtual world of our

representations. One can agree that such a conception of thinking is quite shrewd and even modern since it is open in tune with some paradigms of contemporary cognitive science.

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We have deliberately paid such great attention to the Greek origins of Western thinking. These origins have determined the treatment of the problem of mind and thinking in the West for all further history. As said above, the pre-Socratics created the general matrix for this problem, and Aristotle equipped it with a rich conceptual foundation and framework. The Greek basis proved to be so substantial and powerful that the most systematic treatment of the problem in Christian époque followed the Aristotelian model very closely, notwithstanding the religious divergence and the historical distance of about one and half millennia.

This treatment was developed by medieval ***scholastics***. However, the reappearance of Aristotelianism took place in a radically changed intellectual and spiritual context. In contrast to the Greek one, God was transcendent to the world in the Christian universe, and this new relationship gave birth to a new kind of thinking and a new discourse called theology. The relation to the transcendent God had to be articulated by new ways and means on the basis of faith, Scripture, and Tradition (expressed in Church dogmas and writings of the Church Fathers). Being the thinking and the discourse on God, theology advances to its conclusions accepting the irrational dogmatic statements unconditionally and also relying on testimonies of faith about Christian experience, the ineluctable part of which is mystical experience dealing with supernatural phenomena. Hence it follows that theology is an epistemologically mixed discourse: it combines the discussion of dogmatic problems and supernatural subjects, which cannot be investigated and comprehended exhaustively by means of rational and non-contradictory reasoning, and the discussion of other problems and subjects, which can be studied deeply enough on the logical and rational basis.

Such a double structure of the dominant discourse of the Middle Ages brings us back to the pre-Socratic matrix, although it appears now in a considerably modified form. We see that medieval thought had to cultivate two kinds of thinking, mystical and rational. As a result, there were two lines in theology, one with the prevalence of the mystical discourse and the other with the prevalence of the rational discourse. The rational line included Abelard, Anselm of Canterbury ("Father of the scholasticism"), and, last but not least, Thomas Aquinas, the greatest medieval thinker. Aquinas's theological system, equally scrupulous and all-embracing, is based throughout on Aristotelian concepts, epistemology, and logic. It adopts basic dichotomies of form and matter (as well as the general paradigm of the hylomorphism), act and potency, substance and accidents, adding to them the dichotomy of essence and existence, and it exploits the discursive technique of propositions and syllogisms, divisions and subdivisions. The treatment of thinking also has the Aristotelian basis, although changes caused by the difference of the Christian ontology are considerable.

Aquinas distinguishes three different principles or faculties belonging to the domain of thinking: mind, intellect, and reason (*mens, intellectus, ratio*). Mind is a collective notion denoting all the soul areas that are not attached to sensual reality. It embraces both intellect and will; intellect means the faculty of thought and knowledge, and ratio that of reasoning. The intellect that includes reason and is itself included in the mind is the central principle of Aquinas's conception of thinking. The dichotomy of potency and act implies the similar dichotomy of the two kinds of intellect, the passive and the active. The passive intellect, also called possibilistic or the intellect in potency, is the lower form dealing with sensual reality only and devoid of any intelligible contents, like the Aristotelian soul in its initial state described by the concept *tabula rasa*. The active intellect, also called *parvum lumen*, small light, performs several cognitive operations successively:

- first, it creates intelligible notions and the language out of sensual images;
- then it creates judgments that relate notions to each other; and
- finally, it creates nets of judgments and chains of deductive conclusions.

The goal of the cognitive process is the same as it was for Aristotle, the contemplation of God. However, both God and human's relation to Him became radically different, and so the conception of contemplation changed radically too. Because of God's transcendence, the accomplished and perfect act of contemplation demands very special prerequisites such as the afterlife or the ecstatic state. Catholicism's act is conceived as *visio beatifica,* the immediate vision of God's essence granted to the elect. Its necessary supernatural component is *lumen gloriae*, the light of glory; the illumination that produces the elevation of intellectual powers of the elect.

Theologians described many kinds and grades of thinking and cognition that must lead to the higher contemplative state. Most versions of the cognitive and spiritual process represent it as a kind of a ladder with steps by which the intellect ascends from sensual phenomena to intelligible and then to the divine. Aquinas relies on the scheme of the six steps or the six types of contemplation propounded by Richard of St.-Victor (d. 1173) but presents his own interpretation of these steps. This interpretation gives pride of place to intellectual activities, developing subtle classifications of intelligible objects and stressing the role of such practices as lecture, listening to sacred texts, and meditation. An important detail of this ascending process is that on its lower steps, at least, dealing with sensual phenomena, the Aristotelian isomorphism between thought and its object (*adaequatio intellectus et rei*) holds. Moreover, as a separate and inaccessible top of the ladder of human thinking, Thomas placed God conceived as the absolute mind, fully actualized and alien to all potentiality, that is, the pure act, *Actus purus*.

The opposite line in theology that did not accept the Thomist primacy of reason and knowledge included chiefly thinkers from the Franciscan order who disagreed with Aquinas's disagreements with St. Augustin's teaching and insisted on sticking to the primacy of love and will. The most significant contributions of this line to the problem of thinking belong to Bonaventure (1221–1274) and Duns Scotus (1264–

1308), called respectively *Doctor seraphicus* and *Doctor subtilis*. In comparison with Aquinas, they pay more attention to mystical, ascetical, and liturgical aspects of theology and spiritual life; in particular, they reject his presentation of the highest grade of contemplation as a purely intellectual vision: for Bonaventure, it is the communion with God, and for Duns Scotus, it is the act of love for God. Duns Scotus created a big and minutely elaborated system, which represented a full-bodied counterpart to Aquinas's system, also built on the Aristotelian basis, but having different positions on the majority of principal subjects. In particular, he presented a different description of the basic structure *intellectus possibilis–intellectus agens*, interpreting the latter as a natural light that helps the former produce *species intelligibilis*, intelligible objects of the universal meaning. Using this notion, he developed the conception of cognition as the union of two cognitive activities, the intuitive that gains the knowledge about the existence of things only, and the abstractive that gains the knowledge of the essence of things. This conception proved to be valuable for future epistemology.

In spite of polemics between Thomists and Scotists as well as other hot disputes in the scholastic milieu, medieval scholastics can be considered as a single whole characterized by some important universal features. Both Aquinas and Scotus held that the Revelation does not contradict reason. Not all scholastic thinkers would accept the famous maxim *philosophia est ancilla theologiae* (belonging to Peter Damian, XI century), but all of them believed that philosophy is not a self-sufficient discourse capable of providing an accomplished system of knowledge embracing both sensual and intelligible reality (Duns Scotus, the acutest philosophical mind of scholastics, even presented a detailed proof of the insufficiency of philosophy), while theology with the assistance of philosophy can produce such a system. In particular, the higher, contemplative levels of thinking are definitely in the field of theology.

Thus, the thinking as it is conceived in medieval thought is essentially a *theological phenomenon*. It preserves basically the pre-Socratic matrix, i.e., a hierarchical structure that includes the higher and lower types of thinking with some dynamical connections between them. It exploits the Aristotelian form of the matrix intensely, but at the same time, it modifies it considerably and complements it with new, purely Christian types of thinking.

The next big landmark in the history of thinking is undoubtedly ***classical metaphysics***. There is no need to describe in detail its tenets since they are well-known and given in textbooks. *Grosso modo* represents the gradual but irreversible turn of the Western mind from the Christian paradigm of the dominance of God to the secular paradigm of the autonomy and self-sufficiency of the human mind. The turn has been resolutely announced by ***Descartes***, and the announcement has been made in terms related directly to the problem of thinking. The core of all Descartes's philosophy is his new and revolutionary theory of thinking. The initial basis of this theory consists of two fundamental statements called the first and the second truth:

i. I think hence I am; *Cogito ergo sum*; and
ii. Human being represents the sum of the thinking part, *res cogitans*, and the spatial or extended part, *res extensa*, which have nothing in common with each other.

The first truth is Descartes's conclusion drawn from his analysis of a certain mental experiment. It establishes that the human thinking Ego is the least and most elementary agent that undoubtedly and firmly *is*. Taken together, two Cartesian truths produce the conception that is strikingly different from all preceding theories of thinking, both Greek and Christian. I mention here just two of its principal distinctions:

- First, Descartes's model of thinking is unitary: in contrast to all past models, his *cogito*, the activity of thinking, is a unified activity that is not divided into any kinds or types or levels, which form some hierarchical structure. The notion of the *res cogitans*, the agent of this activity and the generating center of the cognitive act, was soon transformed into the concept of the (Cartesian) *subject of cognition*, which became the key concept of classical metaphysics. Descartes's description of the cognitive act based on this concept was the description from a new viewpoint, in the subjectivist perspective. It included initial stages of the radical doubt and concluding stages of correcting mistakes and distortions in the act by means of *inspection de l''esprit*. This procedure anticipates the intentional examination in Husserlian phenomenology; and
- Second, the process of thinking, i.e., cognition, must advance–again in contrast to all past models–not from sensual objects to intelligible ones, but in the opposite direction, from the first principles to the scrupulous study of empiric phenomena. Such an inversion of the process meant the diametrical change of the goal of the cognition and hence of the human destination as well: now the goal and the destination were seen not in the contemplation of and in union with God, but in the clear and distinct vision of worldly things. It was the sharp turn from God to the world, in other words, the resolute *secularization of thought*–the key component of the general secularization of European civilization.

Descartes's strategy was cautious, and he did not reject the orthodox religious ontology. Instead, he presented a new epistemology that was virtually independent of this ontology and strikingly efficient. The main accent of his thought was on the method: not so much he discussed what is thinking as demonstrated very precisely how it should work. One can say that he offered his new clear and distinct Cartesian coordinates not only to geometry but to all fields of human knowledge. This strategy proved to be overwhelmingly successful. It quickly became clear that the traditional ontology with its dependence upon theology is hardly compatible with Cartesian coordinates, and so it was gradually superseded by various secularized versions. In this process, Cartesian epistemology was quickly developing into a full episteme that was later called the classical episteme by Michel Foucault.

However, secularization was (and still is) a complicated process with many unexpected twists and turns. As said above, in the field of thinking, the general trend of this process is immanentization that is the gradual reduction of ontological and transcendent aspects of thinking. But our next landmark shows opposite features. Moreover, this landmark keeps a special place in the history of thinking: all immense ***Hegel***'s System is a theory of thinking developed in such a way that it embraces all fields of reality, turning into a true "theory of everything." Hegel liked to stress his elective affinity with Heraclitus, and, indeed, the affinity of his dialectics with Heraclitus's thought is evident and striking. But in fact, the succession of his System to Parmenides's poem is no less essential and profound. The System is a great paradox: undoubtedly, it belongs in the trend of secularization with its growing distancing and separating from religious thought and life, but at the same time, it demonstrates the unprecedented since Parmenides strict primacy of the ontological thinking over the empiric individual thinking (although Hegel's dialectical ontologism does not accept Parmenides" thesis that non-being is not absolutely).

According to Hegel's cognitive paradigm, it is not an individual human who cognizes and thinks. Thinking and cognition are the prerogative of the supreme principle of the System, the Absolute Spirit (*Geist*) that acts on all levels of both sensual and intelligible reality conceived as a *sui generis* many-level hierarchical universe. Its global structure is determined by the manifestations of the Spirit in three principal forms, respectively, the subjective (anthropology: soul and body, perception, reason), objective (law and morals, state conceived as a special kind of personality, world history) and absolute (art, religion, philosophy) spirit. On any level, in any part or cell of this universe, the Spirit puts (*setzt*) some particular kind or form of thinking. The universe is dynamic, and all forms of thinking are activities with the same universal dynamic nature that is the *dialectic*. "Dialectic represents the nature of the thinking as such… Dialectic is the moving soul of any scientific unfolding of thought" [8, §§ 11, 81]. Roughly speaking, the dialectical nature of thinking means that its structure "contains contraries within itself" so that it is based on the contradiction, and this contradiction becomes the moving force of the movement of thought, which is realized in the three stages, *thesis, antithesis and synthesis* (the Hegelian triad). These stages are identified as abstract or formal, concrete and speculative thinking, or, in other terms, as understanding (*Verstand*), judgment (*Satz*), and reason (*Vernunft*).

The ubiquitous presence of the Spirit and the thinking is the reason why Hegel's system is often qualified as the *panlogism* (in Hegelian discourse, "Logic is the science about thinking" [8, § 19]). Evidently, any panlogistic system tends to draw being in the thinking that it tends to implement Parmenides's identity in some way. Looking from this angle, we discover that the identity of thinking and being is one of the leitmotifs of Hegel's System that is found repeatedly in many themes and parts of it. Hegel states that this identity should not be postulated, as in Schelling's philosophy, but must be deduced. The relationship between thinking and being is discussed in many aspects, with careful distinguishing between abstract and concrete levels. Hegel focuses on their differences [8, § 51], stresses that their

indivisibility inherent in *Cogito ergo sum* is the most authentic knowledge [8, § 76] and comes gradually to their identity (cf. "Being is identical to thinking" [8, § 413]). Eventually, this identity obtains a very sophisticated interpretation and finds its reflections or correlates in many important moments of the System, such as the famous maxim "What is rational is real, and what is real is rational" (*Phil. der Rechts*. Vorrede), the identity of form and content, etc.

Inevitably, the all-embracing System also includes such types of thinking that correspond to the "individual thinking" in our terms. Their place in the System is, of course, in part assigned to the Subjective Spirit. As Hegel says, "The thinking, as soon as it unfolds in time and belongs to individuality, has corporal manifestations and is actualized predominantly in one's head, in the brain, and in the system of sense organs in general" [8, § 401]. Like any element of the System, these types are described thoroughly, but nevertheless, they represent just initial and imperfect forms associated with the lower stages of the dialectical process. Thus, on the whole, Hegel's conception of thinking restores the pre-Socratic matrix reproducing basic motifs of both Heraclitus's and Parmenides's thoughts. In the further life of philosophy, Hegel's influence was strong and lasting, but his conception of thinking was not too popular. One can see two main reasons for that. First, it was too complicated: overburdened with nets of notions, multiple classifications, and minute details and hence too difficult to be widely used. Second, its absolute primacy of ontological thinking contradicted the principal philosophical trends of its time. One can say it was too Parmenidean to be modern. In both these points, Descartes's system, though it was much older, had an advantage over Hegel's one, and, as a consequence, in the overcoming of classical metaphysics, which soon became the main task of philosophy, its role was more significant. We are going to see this right now, discussing our next landmark.

The overcoming of metaphysics and the transformation of philosophy into the postclassical paradigm obtained the firm base in the phenomenology of ***Husserl***. The problem of thinking is at the center of phenomenology. One can say that Husserl's theory was essentially a new interpretation of thinking and hence a new philosophical method based on the principle of *intentionality*. Intentionality is a property of human consciousness, which is, according to Husserl (and F. Brentano before him), its main and constitutive predicate. It means basically that the consciousness has necessarily some object to which it is directed, and it has the ability to concentrate on this object closely, fixedly, and intently. When the consciousness exercises this ability, it becomes the intentional consciousness, its object becomes the intentional object, and the concentration on it is the intentional act. The core of Husserl's theory of thinking is the detailed analytic description of this act.

The crucially important preparatory stage is the *phenomenological reduction*: the consciousness must reduce the sphere of its experience, restricting it to the experience related directly to the chosen object. It is done by means of a special operation of excluding or "bracketing" all irrelevant contents, called *epoche* (the abstention from the judgment, Greek). This usual description of the reduction is too superficial; however, in fact, the consciousness does not cut off the experience of the outer world, outer but draws it into its inner world. The act itself represents the

usual advancement from the sensual to the intelligible but performed in the specific, intentional perspective. As a result of the reduction, the consciousness changes its naïve "natural" attitude to the "phenomenological" attitude. It is divided by Husserl into three phases:

i. hyletic, dealing with the "matter" of the act, its sensual data;
ii. noetic, when the *noesis*, the intellectual grasping of the object is performed; and
iii. noematic, on which the *noema*, the noetically processed object, is contemplated.

The final result of the act, the noema, is one of the most complicated Husserl's notions that can be briefly defined as the experiential object, which is placed into the world of the subject of the experience (the reduction) and then is endowed with eidetic structures (structures of the meaning) induced from this world (the noesis). All phases are described in microscopic details, but this description is not subjectivist nor psychological since Husserlian phenomenology does not reconstruct subjective, but universal phenomena or, more precisely, *structures of transcendental subjectivity*. As Husserl, himself pointed out, the theory of intentionality resembles and continues Descartes's treatment of thinking. Indeed, the *epoche* can be likened to the Cartesian doubt; the famous cognitive act, in which the principle *cogito ergo sum* is discovered, can be considered as a prototype of the intentional act; and the Cartesian insistence on *clara et distincta visio* finds its parallel in the Husserlian insistence on *Evidenz*, the evidence.

The principal role in an intentional act belongs to attention and memory; hence Husserl's theory includes detailed conceptions of these activities. Husserl finds that certain varieties of attention overcome the Aristotelian opposition of the active and the passive (*to ergon–to paschein*), and such varieties are especially important for an intentional act. Indeed, this overcoming is the key predicate of intentional attitude, and corresponding kinds of attention, unnoticed by secular science, were always known and fruitfully exploited in spiritual practices. Another key feature of phenomenological attitude is that its discourse is of a new type: it is both experiential (and hence free of essentialist metaphysical concepts) and conceptual (and hence free of theoretical helplessness of bare empiricism). Thus, it is exactly what was needed as a renewal or replacement of classical metaphysics that was already strongly criticized on the verge of the twentieth century, when phenomenology appeared. For this reason, it was soon picked up by many followers, and a large phenomenological movement emerged. Phenomenology developed into a new epistemological paradigm and almost universal philosophical methodology that was in differing degrees adopted by many contemporary philosophical currents and disciplines such as existentialism, analytic philosophy, sociology, esthetics, etc., as well as theology.

With Husserlian phenomenology, European philosophy enters its postclassical period. On the whole, in this period, the further ousting and removal of the discourse of the transcendent takes place that implies the further immanentization in

the treatment of thinking. The leading trend in this treatment is the interpretation of thinking as a psychological phenomenon. Phenomenology makes a considerable contribution to this trend, and it is a paradoxical fact since one of the main principles of Husserl was the struggle against psychologism in philosophy. The solution to the paradox is simple, however. The theory of an intentional act focuses chiefly on psychological subjects such as attention, perception, temporal consciousness and experience, etc., and the conceptual framework of phenomenology abounds with psychological notions; but the use of them does not mean psychologism because in the phenomenological attitude, this framework switches from the psychological discourse to the transcendental one. But it is very easy to start exploiting this rich framework forgetting about the phenomenological reduction and treating its elements as usual psychological notions. This happened repeatedly. But there was also one important philosophical phenomenon that runs counter to the dominant trend of the psychological interpretation of thinking.

In the context of the history of thinking, the role and place of ***Heidegger***'s thought is *mutatis mutandis*, similar to those of Hegel's. We see a grandiose system that categorically asserts the primacy of ontological thinking in defiance of the dominating historical trend going in the opposite direction; in both cases, this revenge is not complete and not long, despite the strong influence of the system as a whole. The form in which this primacy is stated by Heidegger is as extreme as it was in Parmenides: it is the thinking as such that is ontological, and any different form of thinking can only be deficient or illusory "simply put, thinking is thinking of being" [9, p. 316]. Moreover, any forms, which we have at our disposal, are not yet genuine thinking. Thus, we do not know what it is but can only ask about it so that the proper discourse of thinking is not its description or its study, but only the asking of the question: *Was heisst Denken?*

Nevertheless, principal predicates of (genuine) thinking can be pointed out. First of all, Heidegger discusses in detail the fundamental relationship between thinking and being (in one of his principal books, "Introduction to metaphysics," the largest chapter is "Being and thinking."). He is convinced that pre-Socratics had a unique ontological vision that gave them open access to the truth, and so, predictably, he takes Parmenides's side and shows that this relationship is an identity. But he presents his own interpretation of this identity based on a new in-depth analysis of the problem. Taking Parmenides and Heraclitus as his guides, he decides that being and thinking correspond to pre-Socratic groundwords *physis* and *logos*, and "being in the sense of *physis* is the power that emerges," while "the basic meaning of *logos* is the collection, to collect" [5, pp. 106, 105] (cf. our characteristic of the ontological thinking as a collecting-and-uniting activity).

He argues then that the identity is directly connected with the "ontological difference," that is, the difference of being and the entity, *das Seiende*. He characterizes this difference as a dynamic relationship that is, in fact, the unfolding of the unity and the difference: a specific dynamic formation that he calls *die Zwiefalt*, which means the fold or the doubling. The new concept of the fold with its dynamic nature helps very aptly elucidate and articulate the real heart of Parmenides's identity, which is the identity itself, *to auto*, the "enigmatic word" (Heidegger).

What is enigmatic is the seemingly incompatible nature of the poles of the identity. Indeed, thinking is always conceived intuitively as a certain activity while being as a kind of unchangeable state. As Heidegger argues, the mutual belonging (*Zusammengehörigkeit*) of thinking and being can be realized only due to the fact that being is involved into the fold with the entity and Parmenides's identity must be conceived, more precisely, as the identity of the thinking and the fold. "In the enigmatic word *to auto*, the same, the disclosing accomplishment of the mutual belonging of the fold and the thinking… maintains silence" [10, p. 45].

But, on the whole, Heidegger, unlike Hegel, and like most existentialist thinkers, does not dwell on the problem of thinking too much. In his early masterwork, "Being and Time," this theme is virtually absent. In the late philosophy of the Event (*Ereignis*), it is also not discussed because its central and generating principle, the Event, is supposed to be such that it is inaccessible for any thinking, "not thinkable." An exception to the rule is "Letter on humanism," in which a concise characteristic of "thinking of being" is given. Here the connection of this thinking with the constitutive human's mission of the "ecstatic stepping-out into the clearing of being" is disclosed. "Thinking listens to the clearing of being, investing what it says into language as the place of existence… What is done by thinking is neither theoretical nor practical… Thinking surpasses all practice. Thinking towers above all action and producing… The thinking of being… surpasses all theoretical consideration because it is concerned with that in light of which the theoretical vision can only take place and unfold" [9, p. 361–362].

The forgetting of being, the refusal of human's constitutive mission has its inevitable reflection in the domain of thinking. "Being as the element of thinking is abandoned in favor of the technical interpretation of thinking" [9, p. 315]. According to Heidegger, such a technical interpretation and exploitation of thinking is exactly what takes place in science. Thus, he makes a "scandalous statement" that "science does not think," and, what is more, there is "the abyss between science and the thinking, and there is no bridge from science to the thinking, only the leap" [4, pp. 7–8]. Due to this abyss, one can say that Heidegger's conception of thinking preserves the pre-Socratic matrix, at least, in its general structure, and, paradoxically, in the Heideggerian version of the matrix, the lower pole of the imperfect thinking is represented by science, while the thinking of an uneducated peasant toiling on earth is close to the higher, ontological pole. As for full-fledged ontological thinking ("thinking of being") is a privilege of philosophy. Such absolutization of philosophy is one more common feature of Heidegger and Hegel.

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There are two outstanding thinkers, Heidegger and ***Wittgenstein***, born both in 1889, whose thought was of decisive influence on Western philosophizing since the mid-20th century. In the field of thinking, their contributions succeed each other: *grosso modo*, Heidegger's thought finishes a great époque of history of thinking, and Wittgenstein's thought opens the next period (that does not look like another great époque so far). In this period, the global trend to treat thinking as a purely immanent phenomenon achieves its final stage: the pre-Socratic matrix and the

ontological thinking are definitely left out, and conceptions of thinking become completely immanent and unitary.

Wittgenstein states directly that thinking is purely immanent: "Man's thinking goes on within the inner recesses of his mind in a seclusion compared to which any physical seclusion is a lying in full view" [11, Pt. II § 316, p. 233]. But despite this outspoken immanentism, he dissociates his position from naturalistic and materialistic conceptions of thinking. In late "Remarks on the philosophy of psychology" (1946–49), he openly rejects such conceptions. He admits that there is some "system of impulses" going from one's brain and correlating with his/her thought that was spoken or written, but such a system represents the thinking in no way. Thus, he insists that there is no process in the brain that corresponds to thinking. Contrary to all attempts to describe thinking in terms of such processes, he warns that it is "extremely dangerous" to reason on the level of physiological processes, and the conclusions of such reasoning are, generally speaking, invalid since "I don't know whether the people of my surrounding have nervous system." Eventually, he rejects any attempt to explain or define thinking. "We want to define the concept of "thinking." But then we shall be told that thinking is indefinable. There must be some indefinable things" [12, p. 236].

His study of thinking unfolds within a novel discourse of analytic philosophy, which he creates himself (alongside Russell and Moore) and which is focused chiefly and almost exclusively on logical and linguistic problems. It means that he does not attempt to grasp the nature of thinking but asks methodological questions: Can thinking be observed? "How do we investigate the nature of thinking – or even know that that is what we investigate? What am I to observe in order to know the nature of thinking?" [12, p. 49], etc. Linguistic analysis is another principal working field: "We must talk of the peculiarities of the use of the word "thinking"" [12, p. 172]. Great attention is also paid to the psychological aspects of thinking. As he says in his Cambridge lectures of 1930, emotions like hope and fear, sensations like pain, perceptions like the feeling of color are all forms of thought, and he reflects on the structuring of such thoughts and their temporal dimension. He decides that the thought is a "temporal symbolic process" that lasts as long as its expression. At the same time, he warns, we should not mix up thinking and psychological phenomena (mental processes): "True, we sometimes call accompanying a sentence by a mental process "thinking"; nonetheless, that accompaniment is not what we call a "thought"" [11, Pt. I § 332, p. 107]. He studies mechanisms of lying and pretending, of mistakes of our perceptions, analyzes many specific kinds of thinking such as "thinking without words," "thinking in a flash," "outside speaking," "calculating in one's head," etc. On the whole, his treatment of thinking is a synthetic approach; he identifies carefully logical, linguistic, and psychological dimensions of the phenomenon and then studies them both separately and in their connections and correlations using his specific technique of the "change of aspect (Aspektwechsel)," a shift or a turn of the point of view. One can see a certain parallel between this technique and Hegel's definition of the experience as the "turn of the consciousness."

The important problem of the relationship between thinking and talking–or thought, language, and speech–is discussed in-depth. Wittgenstein considers these activities as inseparable. "When I think in words, I don't have "meanings" in my mind in addition to the verbal expressions; rather, language itself is the vehicle of thought… Thinking is not an incorporeal process which lends life and sense to speaking, and which it would be possible to detach from speaking" [11, Pt. I §§ 329, 339, pp. 106, 109]. To be more precise, the relationship is not symmetrical because "talking without thought" is possible. Yes, "the purpose of language is to express thoughts" [11, Pt. I § 501, p. 139], but this purpose may not be reached in some actual speech acts. Nevertheless, the connection of thinking with language is more profound and intimate than the connection with psychological phenomena like emotions or sensations. At the same time, Wittgenstein's discussion leaves many questions open. For instance, besides verbal content, I have a stream of images flowing in my mind, and, evidently, this stream can also be accompanied by thinking. Is it true for this thinking too that it is not possible to detach it from speaking, or is it a different kind of thinking? The relationship between verbal and visual content and activities of consciousness is one of the big problems in cinematography theory. It is also investigated in today's cognitive science. The mechanisms involved in the relation *thought–word* were studied in a more detailed and multifaceted way by authors using different approaches, in the first place, by Jean Piaget (the approach of genetic epistemology) and Lev Vygotsky (the approach of cultural-historical psychology, cf. below).

Bertrand Russell, Wittgenstein's friend and great analytic philosopher, disapproved his works after "Tractatus logico-philosophicus" (1918) and said that there is nothing interesting in "Philosophical investigations," his basic late text, in which his synthetic approach to thinking and consciousness was developed. However, we see in retrospect that it is exactly this approach that is the main reason why Wittgenstein is valued today as one of the greatest modern thinkers. In his late works, the rigorous discourse and discipline of analytic philosophy outgrew its narrow limits and started working on the whole transdisciplinary field of logic, linguistic, and psychology. Subsequently, analytic philosophy expanded into a large philosophical movement that was connected closely with the "cognitive revolution" of the 1950s and had many branches, the principal of which were logical positivism and linguistic philosophy. However, regarding the problem of thinking, this movement did not advance very far beyond Wittgenstein, moving mostly along the lines he traced. The main new (but not quite new) element was the strong enhancement of reductionist and materialistic trends stimulated by vigorous development of molecular biology, neuroscience, cognitive computer models, etc.

The conceptual content of these trends is concentrated in the so-called ***mind-brain identity theory***, which puts on a table a very simple message: all states and processes of the mind, including thinking, are identical to states and processes of the brain. The theory substantiates this general thesis in great detail based on the newest data from cognitive science, but the assertion as such is by no means new. It is just another reincarnation of an old idea that repeatedly appeared in Western philosophy. Leaving aside ancient materialists, we find similar statements

of the mind-brain identity in materialists of the 17th century, in David Hume (the thinking is but "slight oscillations in the brain"), Charles Darwin (the thinking is a certain "secretion of the brain"), e.a. But today the theory appears in a much more solid form possessing both the phenomenal basis and conceptual elaboration. There are multiple versions of it, corresponding to many possible ontological and epistemological interpretations of the identity. The strongest and most radical form of reductionism is called *physicalism*. It is a materialistic conception that interprets the identity in a full ontological sense: it asserts that all the processes of mental experience are not merely correlated or connected with brain processes but are really and literally brain processes. Evidently, such an approach denies the existence of any *qualia* that is irreducible non-physical properties of mental phenomena and processes. Of all attempts to equip physicalism with a philosophical basis, the most well-founded is the conception of ***heterophenomenology*** by ***Daniel Dennett.***

Starting from Husserl's intentional phenomenology (see above), Dennett tries to transform its "phenomenological attitude," realized by an intentional subject, into a different attitude realized by an external observer. Such a transformation is the shift of the generating focus of the phenomenological description from the first to the third person, and that is why Dennett calls his theory the "phenomenology of the other." The new *hetero*phenomenological description accepts the self-report of the intentional subject and then subjects it to a diversified verification procedure based on all relevant empirical data available to the "third person," the researcher: subject's bodily responses and environment, evidence provided by neurological and psychological studies, relevant researcher's memories of his/her own experiences, etc. Epistemologically, such a description is not a true phenomenological, but a hybrid discourse combining in a forced way phenomenology and empiricism. Due to this combination, the heterophenomenological description, in contrast to the phenomenological one, does not create structures of transcendental subjectivity but bears a directly opposite, truly anti-Husserlian fruit: the description of mental acts that are in accordance with the materialistic mind-brain identity. Nevertheless, Dennett claims justly that it is a fully-fledged cognitive paradigm that is de facto used widely in studies of human consciousness. Moreover, the usual intentional cognitive paradigm needs some modification or complement in order to take into account intersubjective aspects of the cognitive act. This problem has been recognized by Husserl himself, and as long as it is not solved, Dennett's theory can be considered a rough approximation to its solution.

The radical approach of physicalism is far from being generally accepted, however. A neighboring and more moderate reductionist position is *functionalism* that abstains from definite statements on the nature of mental states and processes and asserts only that they function identically to states and processes of the brain. Such switching from ontological to epistemological discourse prompts one to suggest that if the only thing that matters is the set of functional roles (the syntax), then, generally speaking, the isomorphism Mind–Brain might be extended to other systems, in which the same set is realized with other substrates, e.g., computers. It is the so-called idea of *multiple realizability*, and, evidently, it leads to a generalized interpretation of mind: why not call "mind" any viable realization of the syntax of

the human mind? This generalization finds its parallel in theories of autopoiesis and enactivism that develop somewhat similar generalized interpretations of cognition.

All these post-Wittgensteinian conceptions are still in the phase of active discussion and polemics. Many objections to both physicalism and functionalism were propounded, some of them in the form of thought experiments such as the Chinese room by John Searle and the Chinese nation by Ned Block. As Searle argued, mental content cannot be fully expressed in functional terms. Taking into account only functional roles of mental states, we cannot understand semantic and intentional aspects of mind and thinking [13, pp. 417–424]. The validity of his arguments can be illustrated by the words of Lev Vygotsky, whose work will further be discussed: "The meaning of the word is… nothing but a generalization" [14, pp. 297–298]: indeed, the notion of generalization refers to some meta-level and hence is a concrete example of mental content that cannot be fully expressed in functional terms. From a more general point of view, modern reductionist trends in cognitive science are criticized by Noam Chomsky, who notes that the reduction shares the role of a leading paradigm in the history of knowledge with the paradigm of the union and points out that "True reduction is not so common in the history of science, and need not be assumed automatically to be a model for what will happen in the future" [15, p. 71]. Today the paradigm of reduction is dominant, but the paradigm of union did not yet say its last word.

With regards to the problem of thinking, the Soviet psychological tradition that lasted several decades represents a kind of continental counterpart to the Anglo-American school. The comparison of them is instructive; most of their principal typological features are opposite to each other. While the Anglo-American school is strongly inclined to the primacy of logic and synchronistic methodologies of analysis and description, the Soviet tradition is based on the primacy of the historical approach and diachronic methodologies. The work of Lev Vygotsky (1896–1934) represents a real landmark in the history of our problem. Vygotsky's approach called cultural-historical psychology presents a fully-fledged theory of thinking and consciousness that includes empiric studies and uses an original "genetic" methodology relying partly on the ideas of Piaget. According to this methodology, the elaboration of general conceptions usually starts with the empiric discussion of some phenomena of children's psychology so that children's consciousness serves as a kind of a laboratory, in which basic laws and features of human consciousness can be clearly seen in their genesis.

Vygotsky's main contribution to the problem of thinking consists in new treatment and insightful, in-depth analysis of the relation thinking–word/speech presented in his last book published posthumously. He develops a conceptual framework for this analysis, arguing that "the meaning of the word" is the only possible choice for the cornerstone of this framework. "There are all reasons to be sure that the meaning of the word is not only the unity of thinking and speech, but also the unity of the generalization and the intercourse, of communication and thinking" [14, p. 17]. Beginning his analysis, he criticizes two opposite extreme positions in the problem thinking/speech: the identification of these activities, the reduction of the thinking to speech, typical, in particular, of American science, and

their separation, the independence of them stated, for example, by Bergson and the Würzburg psychological school. He finds that both fail to present a satisfactory treatment of the relationship in question, but his genetic method makes it possible for him to overcome their binary opposition. He turns to empiric studies and, based on their results, concludes: "We have obtained objective experimental proofs that the thinking of a child goes through a pre-speech stage in its development." After this stage, "at a certain moment, about the age of two, the lines of the development of thinking and speech which went separately cross each other, coincide and give birth to a completely new form of behavior very characteristic of human person" [14, p. 100, 101].

The discovery of the "pre-speech stage" and related Vygotsky's results is significant progress in the problem of thinking. He proves that thinking and speech are two different but closely intertwined processes in consciousness. He discloses intricate mechanisms of their interaction in his studies of higher psychological functions performed with the same genetic method. The main result is the detailed reconstruction of the relationship between thinking and speech as a structured and dynamic process in which the thought changes and matures. Starting stages of this process, at which the thought just goes out of its pre-speech phase and begins its way to the word, being only partly verbal or semi-verbal yet, are of special interest. Describing them, Vygotsky grasps what many scholars, poets, and artists tried to grasp, the *act of the birth of the thought*, when it just emerges as a kind of a not-yet-verbal shoot of the future thought, which will form the inseparable unity with the word. Such not-yet-verbal shoots of thoughts are an important factor in many phenomena, e.g., in creative intellectual work and spiritual practices. Some ancient schools of spiritual practice, like Eastern-Orthodox hesychasm, studied them carefully and worked out sophisticated techniques for monitoring and controlling their development (needed because the uncontrolled flow of arbitrary shoots of thoughts, *logismoi*, threats the holistic man's ascent to the goal, *telos*, of the practice).

In his own plans, Vygotsky considered the study of thinking as a preparatory task for the global problem of the comprehension of human consciousness and even human being as a whole. He introduced a general concept of "psychological system" and stated that a human's characteristic property is the ability to realize the integration and self-management of the psychological system embracing an entire human being. He was also convinced that humans must "rearrange their natural structures" in order to create a "united center" for the management of this all-embracing system. Surely, such a rearrangement must be the mission of the thinking, in the first place, and he started to develop his conception of thinking in this direction. All these ideas of his last period remained in outline, and many of them deserve further development.

In Soviet psychology and philosophy, we find several significant conceptions of thinking belonging to Evald Ilyenkov (dialectical logic of a neo-Marxist type), Sergey Rubinstein (the structural analysis of thinking as a mental process), Pyotr Galperin (the "theory of stages of the formation of mental actions"), e.a. Indisputably, the most well-known and influential of them was Georgy Shchedrovitsky

(1929–1994), the author of the conception of the action-thought and founder of the Methodological movement. The movement was a unique phenomenon in the late-soviet stagnating totalitarianism. Headed by a charismatic leader, it had dozens of centers and thousands of followers all over the USSR, of whom many hold now important positions in Russian politics and business. The main form of its activity was a business game called "Organizational action game" invented by Shchedrovitsky; regular sessions of the game attracted hundreds of participants. This game is a training in "methodology" that is interpreted by Shchedrovitsky as a universal practical-theoretical *ars magna*, both wisdom and know-how, capable of exercising the management of any problem and any situation. As he claims, "Methodology is capable of everything… Methodology undertakes the function of the elaboration of the accomplished worldview replacing philosophy… Methodological thinking is a new kind of thinking that must replace all preceding forms, in particular, scientific thinking… Methodology is ethics of the twentieth century and the next centuries" [16, pp. 552, 550, 566], etc.

Although his teaching was extremely efficient as a set of practices of all sorts, social, cultural, and intellectual, its theoretical basis is eclectic and muddled. It comprises the conception of thinking and the conception of action united in the theory of "system-action-thought methodology." Shchedrovitsky insists that the thinking and the action are two autonomous substances, which "do exist really," and the unity of them, "the world of thinking and action is the primary world, [while] the world of people or people with their psychology is the secondary world, the representation of the world of thinking and action" [16, p. 562]. Thus "we should divide the world into the world of the action-thoughts and the natural world or the world of nature. Moreover, the world of action-thoughts is the primary and principal one, while the natural world cannot have pretensions to the status of reality" [16, p. 563]. This ontology inevitably leads to the view that the human person is of no importance. "What there is, is thinking, and it does not matter on what it realizes itself. In our world, it does it accidentally on people, in another world on penguins… It makes absolutely no difference on what it realizes itself… We should consider the world of thinking and action, but not the world of people, because people are casual epiphenomena of the world of thinking and action… People are just an accidental substrate, on which thinking and action parasitize" [16, p. 561, 562, 585].

Thus, in the core of Shchedrovitsky's teaching, we find a peculiar conception of thinking that includes many seemingly incompatible standings but tries to avoid self-contradictions by means of sophisticated syllogisms. The author claims to adhere to Marxist and materialistic positions, but despite this, denies any dependence of thinking upon the sensory input: "The thinking must be considered separately, in an orthogonal way to the sensory reflection, we should understand that the thinking is formed-up without sensory forms of reflection, but not on the basis of them… Thinking is devoid of images in principle" [16, p. 579]. In our terms, this conception corresponds to ontological thinking. Being eclectic, it imbibes elements of almost all classical philosophies:

- Parmenides (the absolutization of thinking and being, the opposition of *aletheia* and *doxa*, cf.: "What exists actually is essences [that is thinking and action, in the first place], while the phenomenal world is but the world of phantoms-appearances" [16, p. 560]);
- Descartes ("When Descartes said that there are two substances, matter, and thinking, he was right. And he was right even in his dualist standing" [16, p. 562]);
- Hegel (strictly speaking, a human does not think, but the thinking, like Hegel's *Geist*, realizes itself using him as a tool or a substrate);
- Husserl (the anti-psychologism and the demand of the replacement of the natural attitude by an alternative, a bit similar to the phenomenological attitude); and
- Last but not least, modern cognitive science ideas about the possibility of realizing the mind and thinking on non-human carriers

In sum, this conception is hardly a great contribution to the history of thinking, but nevertheless, as the core of the doctrine of the Methodological movement, it played and, to some extent, continues to play a considerable role in Russian philosophy and culture of the last decades. Moreover, at least, some of its ideas, and, first of all, the basic concept of the action-thought, can be used fruitfully in other contexts. Independent of Shchedrovitsky, this concept is studied and exploited today in the works of Andrew Simsky (Okhotsimsky) (see, e.g. [17, in press]). He makes it the basis of a constructive description of both anthropological and sociocultural phenomena: using and extrapolating Nikolai Bernstein's biodynamical scheme of the multilevel hierarchical control of the inner motorics, he constructs hierarchical systems of action thoughts that function on all anthropological and social levels of reality.

Simsky's work is but one example demonstrating that the concept of action-thought has valuable potential for further development and use. In fact, both Shchedrovitsky's and Simsky's work based on this concept can be considered a Russian version of the constructivist trend that predominates today in cognitive science. The idea that thinking, mind, and cognition are not opposed to action, but, on the contrary, are connected inseparably with it, is the cornerstone of a whole group of relatively new theories that are often united under the common title of constructivism or, more precisely, radical constructivism. The message put in this name is that mental activity is considered as having the constructing nature: its elementary units are now not acts, but actions, the making of some constructions, whence it follows that the action-thought is a true constructivist concept. The most well-known in this group is the theory of autopoiesis developed by F. Varela and H. Maturana in the 1970s and the enactivism propounded by Varela, E. Thompson, e. a. in the 1990s.

In constructivist theories, all the set of basic notions related to mind and cognition obtains the cardinal reassessment and generalization. The reassessment goes back to Konrad Lorenz, the founder of ethology, whose studies of animals led him to conclude that the interaction of the living organism with its environment can be interpreted as a kind of cognitive activity or, briefly, that "*life is cognition.*"

Evidently, this thesis broke with the age-old tradition that considered cognition as a prerogative of the human mind: now the cognition was conceived as a holistic activity involving all processes of the interaction between the organism and its environment (Cf., e.g., "I shall consider human understanding in the same way as any other phylogenetically evolved function which serves the purposes of survival, that is, as a function of a natural physical system interacting with a physical external world" [18, p. 4]). It might seem that such innovation has nothing in common with the tradition, but one can easily find some intermediate viewpoint uniting both conceptions, e.g., if we define cognition as the development of the ability of the successful orientation in the world by means of constructing actions and concepts that are more and more viable. The Lorentzian reinterpretation of the cognition represented the radical generalization or extension of the old notion. The new conception of *extended cognition* triggered the active process of a similarly extended reinterpretation of all related notions such as mind and consciousness.

It turned out that there are many possible ways to shape corresponding extensions. Basically, the extensions must take into account two principal factors: the dependence on the body and the involvement of the action. The focusing on the structural coupling brain-body world resulted in the emergence of conceptions of *embodied cognition* and *embodied mind*. Here the role of the body is reconstructed in detail: it is shown that the body can function as a *constraint* on cognition, as a *distributor* for cognitive processing, or as a *regulator* of cognitive activity. In these functions, sensomotorics and inner motorics of the body are actively involved, and I should mention that the scrupulous study of them was performed in the mid-20th century in the USSR by Nikolai Bernstein (1896–1966), who used the formula "cognition through action" and was indisputably a forerunner of today's constructivism. Besides the conceptions of the embodied mind and cognition, a philosophical conception emerged based on the idea that one's mind and cognitive processing are not bound by the limits of brain and body but extend to all the world of human experience (the environment). According to this conception of the externalism or the *extended mind*, a human's mind, body, and the environment form, one interconnected system functioning on holistic principles so that all of it is mind (the extended mind), and all of it is the body (the extended corporality).

Today the constructivist and enactivist conceptions of mind and cognition exist in many competing versions, which did not yet find their definitive form. Evidently, there must be corresponding conceptions of the embodied and/or extended thinking, but now they did not yet appear. Thus, our concise history of thinking comes to its final point here. The final situation is fully in accordance with the words of Edgar Morin: "We are, perhaps, living through a great paradigm shift. … We stand on the threshold of a new beginning. We are not in the last stages of the history of thinking… We are, rather, still in its prehistory" [19, p. 98].

Conclusion

Looking back to all the long way of thinking over thinking, we see it as a double-sided process, the development of the theory of thinking and the evolution of the thinking itself. Surely, it was not a permanent progressive development; the process had both gains and losses. A special question is about the destiny of ontological thinking: modernity has decisively rejected it, but was this a gain or a loss? Today the peak of the reductionist trend is over already, and the new constructivist vision tries to construct a broader perspective taking into account not only the reductionist paradigm but also the paradigm of the union. The externalist conception of the extended mind can be viewed as a turn in the direction of the ontological thinking (and we saw really such a turn in Shchedrovitsky's work), and if it is true, all the way of the thinking will correspond to the ancient symbol of the Uroboros, the serpent swallowing its tail: the symbol of the coincidence of the beginning and the end. Connectionism, another constructivist conception, leads in the same direction. It describes mental phenomena on the basis of artificial neural networks treating the latter on the abstract level as large systems consisting of elements of two kinds, some units and some connections between them. Such an abstract view gives one the idea that connectionist architecture could have a more general interpretation. We notice that it is very close to our conception of the ontological thinking as a universal collecting-and-uniting activity; and we suggest that *thinking as such can be considered as a kind of the connectionist architecture* interpreted in the above mentioned abstract and generalized sense, as a dynamical architecture of changing constructions of connections, not necessarily attached to neural networks.

Accepting such a general interpretation of the connectionist architecture, we notice that the thinking is not the only kind available to us, humans. The other is love, and it is even more powerful: as Dante told us, *Amor muove il sole e altre stelle*. This connectionist architecture also needs its concise history, but I would not dare to write it.

> *"The thinking and speech are all entirely and indissolubly intertwined with being and non-being, and we try to disentangle ourselves out from this tangle, and this is our first and foremost problem."*
>
> [20, p. 436].

> *"Parmenides had more grounds than Nietzsche to say that he is the destiny, and the destiny of the West speaks through him."*
>
> [20, p. 435].

> *"It is not for nothing that Antiquity continues to attract us. But for Plato, on the contrary, our New-European algebra would hardly be interesting; and for Aristotle combing of immense celestial spaces without ontological perspective would be senseless."*

[21, p. 78].

"Being has lost its advantage. It is quite bad with being. … Epistemology is a result of misunderstanding… In reality, there is no theory, no contemplation, no knowledge. Plato's Sun does not shine in the sky … It exists inside nets, lamps, electron beams… It is impossible to cognize anything if you are out of nets that organize skills and manipulate them… We have only what is reduced or becomes reduced."

[22, p. 284].

"Thinking exists in Russia like travelers survive at the North Pole or like soldiers live in trenches. It is surprising that it exists nevertheless."

[23, p. 135].

Core Messages

- The chapter presents a synposis of understanding of thinking through all ages of Western culture.
- The analytical presentation identifies principal structures and paradigms inherent in Western thinking over thinking.
- The pre-Socratic matrix is a structure comprising two kinds of thinking: "ontological thinking" and "individual thinking".
- The exposition represents brief descriptions of the set of principal landmarks in the history of thinking.
- The text concludes with a discussion of the present status of the problem of thinking.

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Sergey S. Horujy b. 05.10.1941, in Skopin, USSR, graduated from the Department of Physics of the Moscow State University, got a Ph.D. and a Doctorate in theoretical and mathematical physics. He worked in the field of relativistic quantum theory (until 2006) and, in parallel, philosophy, and theology (this work was underground until the fall of the communist regime). He developed a general anthropological conception called "synergic anthropology" that includes the reconstruction of anthropology of spiritual practices (in particular, Eastern-Christian Hesychasm, Sufism, and Zen). He founded the Institute of Synergic Anthropologyin Moscow (2005) and the international anthropological journal "Diogenes' Lantern" (2015). He published about 20 books (translations in English, Chinese, and Serbian). He served as the Professor of Philosophy, Institute of Philosophy of the Russian Academy of Sciences (Moscow) and the Honorary Professor of the Russian Christian Academy for Humanities (St.-Petersburg), as well as the Member of the Accademia Sapientia et Scientia (Rome, Italy). Professor Sergey passed away in September 2020. He lives on in our memory with his great contribution to *thinking over thinking*.