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## EPIGENETIC PARADIGM OF CRITICAL RATIONALITY IN *BEFORE TOMORROW* BY CATHERINE MALABOU

**Abstract:** Recent tendencies in theory aim at overcoming the Kantian conception of rationality, questioning identification of rationality with critique and the autonomy of thinking subject. Speculative realism attempts to eliminate the transcendental level of thinking that is constitutive for critique, by showing its inconsistency with the contingency of the world discovered through modern science. The development of neurobiology provides a perspective of reduction of the independent level of thinking to the neurobiological activity. Both demand a change in the concept of subjectivity and rationality. However, Catherine Malabou, in her book *Before Tomorrow: Epigenesis and Rationality*, claims that neither speculative realism nor neurobiology can provide a conception of “another rationality” sufficient for current demands. In counterpart to the philosophical atmosphere of the 21<sup>st</sup> century, *Before Tomorrow* urges us to construct a new paradigm of critical rationality not against Kant, but through a dialogue with his philosophy. This paper examines Malabou’s proposition of the “epigenetic paradigm of rationality”, which connects “epigenetic turn” in neurobiology with the interpretation of *Critique of Judgement*. Before presenting this paradigm, the article describes the context of the book: the importance of the transcendental for continental philosophy, the speculative realist critique of Kantian rationality and tensions between reductive neuroscience and humanities.

**Keywords:** the transcendental, speculative realism, epigenetics, neuroscience, rationality, critical theory

From the whole body of work of Catherine Malabou, *Before Tomorrow: Epigenesis and Rationality* can perhaps be viewed as one of the most ambitious endeavours. Best known for her creative continuation of Derrida’s deconstruction, materialist concept of plasticity and influential interpretations of Hegel and Heidegger, in this work Malabou proposes a new paradigm of critical rationality

through the interpretation of the philosophy of Immanuel Kant. Kant’s thought is examined not for its historical exegesis, but in order to challenge his theory with an attempt to overcome transcendental philosophy posed by, on one hand, the so-called speculative realism and modern neurobiology on the other. The leading motive consists of an elaborate discussion over the possibility of relinquishing the transcendental and the perspective of

thinking beyond the Kantian philosophy. Facing Kant with its modern critique, Malabou discusses a new outline of critical rationality at the junction between transcendental philosophy and the modern epigenetic turn in neurobiology. The technical discussion of the foundations of Kant's transcendental philosophy is the starting point for concerning the whole status of critical rationality, humanities, and philosophical discourse, because, as Malabou demonstrates, the status of the transcendental relates to autonomy, irreducibility and identity of critical thinking. In this paper, I examine Malabou's proposition of a new paradigm of rationality, with an emphasis on the possible interaction between the philosophical and neurobiological discourse. First, however, I would like to introduce the context of the book, analyzing the importance of the transcendental for continental philosophy, the speculative realist critique of Kantian rationality and tensions between reductive neuroscience and humanities.

"The transcendental" in Kant's philosophy is a system of concepts relating not to things, but our cognition of things.<sup>1</sup> The transcendental has two essential characteristics: it is a condition of possibility and it is independent from possible experience (this is what Kant

designates as *a priori*). Without going into further detail, it is vital to mention fundamental functions of the transcendental in the Kantian system. To start with, regarding Kant's project, the transcendental supports reason with its autonomous criteria that limit possible knowledge and grounds the critique of dogmatic metaphysics. Moreover, the transcendental conditions our cognitive access to the world, the fact that our perception and categories of thinking refer to objects appropriately. The agreement between the categories and the objects, which cannot be dogmatically assumed, is for Kant *a priori* condition of possible knowledge: we can deduce the condition of possibility of our knowledge from the fact of its existence. Such reasoning allows Kant, in a gesture fundamental to modern philosophy, to identify laws of nature with laws of our understanding in the popular phrase: "we can cognize of things *a priori* only what we ourselves have put into them."<sup>2</sup> These issues of transcendental philosophy, as Malabou attempts to depict in her book, relate to the status of modern critical rationality in continental philosophy. The transcendental, as the level independent of particular experience, grants reason and understanding their autonomous objective knowledge, distinct from other discourses, e.g. the scientific one. It can be also called, according to Malabou's favourite definition, formulated by Michel Foucault, an "irreducible residuum"<sup>3</sup> – subjectivity that cannot be reduced in

<sup>1</sup> It might be useful to recall Kant's definition of the transcendental from *Critique of Pure Reason*: "I call all cognition transcendental that is occupied not so much with objects but rather with our mode of cognition of objects insofar as this is to be possible *a priori*. A system of such concepts would be called transcendental philosophy." I. Kant, *Critique of Pure Reason*, transl. P. Guyer, A.W. Wood, Cambridge University Press, Cambridge 1998, p. 149.

<sup>2</sup> *Ibidem*, p. 111.

<sup>3</sup> C. Malabou, *Before Tomorrow: Epigenesis and Rationality*, transl. C. Shread, Polity Press, Cambridge 2016, p. 109.

thinking. On this basis, the transcendental grounds the identity of continental philosophy, as opposed to the analytic tradition. As Malabou observes, even if continental philosophers distance themselves from Kant, a number of concepts, such as language games, phenomenological experience or social conditions, possess a quasi-transcendental function, as an irreducible dimension conditioning every particular discourse. This refers to the second, not strictly Kantian, line of perceiving the transcendental in *Before Tomorrow*, as “a historico-critical dimension of rationality that accompanies objectivity as its necessary shadow.”<sup>4</sup>

Abandoning the transcendental is not without consequences for the critical dimension of rationality. If the transcendental is relinquished, what conditions our cognitive access to the world and nature? Does the neurobiological elimination of the “irreducible residuum” entail reduction of human subjectivity to causally determined brain activity, organized through sub-personal processes? What is the autonomy of critical rationality as opposed to scientific rationality? According to Malabou, both speculative realism and the neurobiological paradigm, representing propositions of “another rationality”, attempt to overcome the whole paradigm of critique. In the examination of this point, it might be useful to start from the speculative realist critique of transcendental foundations of modern critical philosophy.

Philosophical orientations in the second half of the 20<sup>th</sup> century, such as post-modernism, poststructuralism and criti-

cal theory (associated with the Frankfurt School) proposed a vast critique of modern reason and rationality and its crucial concepts: universality, objective reality, objectivity of science, etc. However, all of them remain within the tradition of Kantian philosophy due to their identification of rationality with critique, even if this critique undermines all positive demands of reason to objective truth and access to objective reality. In contrast to these tendencies in theory, speculative realism, associated with the names of Quentin Meillassoux, Ray Brassier, Iain Hamilton Grant and Graham Harman, attempts to rehabilitate reason and formulate post-critical rationality through confronting humanities with “the outside”, the reality independent to cognition, indifferent to ideology, culture and ethical values. This objective, absolute reality requires the development of a new relation to the world, nature and scientific discourse. Speculative realists recognize that a major part of the continental philosophy of the 20<sup>th</sup> century is influenced by Kant’s transcendental idealism, especially by its claim that we do not have access to “things in themselves”, but only to the way they appear to us. In his famous book *After Finitude*, Quentin Meillassoux argued that what is symptomatic for post-Kantian continental philosophy is that the subject and the world are necessarily correlated: there is no subjectivity without the world outside it, and there is no world without experiencing subject.<sup>5</sup> Various orientations of critical

<sup>4</sup> *Ibidem*, p. 89.

<sup>5</sup> Q. Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, transl. R. Brassier, Continuum, London 2008, p. 5.

philosophy share a conviction that objective reality is transcendently guaranteed by such an originary correlation between consciousness and the world, language and the world or thinking and being. Meillassoux, on the contrary, proposes the idea of “critique of critique”, rehabilitating the notion of a mind-independent reality that is not conditioned by any transcendental or quasi-transcendental level.

The main objection against correlationism points to its incapability to think the contingency of correlation, the fact that the correlation between subject and object is just one of events in natural history. If thought, subjectivity or even life are contingent events in the world, that probably could never happen, there is no reason to privilege them in ontology as an irreducible condition. One of the arguments supporting this thesis consists of giving examples of objects referring to the reality that cannot be coherently presumed to be correlated with possible experience. Meillassoux adopts the term of “arche-fossil” for a material trace of distant past, like a sediment from the period of accretion of the Earth, which refers to a reality where no consciousness, subjectivity or even life existed, to the time preceding the emergence of any possible correlation between the subject and the world. Events from the distant past must remain mysterious to correlationism because they cannot be understood as appearances for possible experience, due to the very fact of their occurrence before thought, subjectivity or life emerged out in natural history. That does not eliminate the possibility of acquiring knowledge about events of

the lifeless past. Science, driven by the discourse of mathematics, is perfectly capable of making statements about the world beyond correlation, without reducing it to mere appearances. As a consequence, for a correlationist, these statements must be defined as impossible or at least “not quite real” (because “true reality” can only be correlated to the subject).<sup>6</sup> All these complications convince Meillassoux to abandon the scope of Kantian philosophy, because, quite paradoxically, having assigned to it the task of grounding science, Kant’s critique is unable to comprehend the possibility of certain scientific statements and can no longer be a guide for critical rationality.

To overcome Kantian and post-Kantian philosophy, Meillassoux urges to “relinquish the transcendental”. This expression is the dominant theme of *Before Tomorrow*, where Malabou poses a question of whether continental philosophy can abandon the transcendental concepts without undermining itself. For Kant, the transcendental grounds the relation between subject and the world: the agreement between subjective categories and objects is a fundamental condition of possible knowledge, connecting laws of nature with our understanding. If the transcendental is relinquished, there is, as Meillassoux argues, no necessity in the laws of nature, but only their contingency, which means the possibility of becoming other without reason. That leads Meillassoux to a new concept of nature, which, according to Malabou, is no longer home to any subject, but rather to

<sup>6</sup> *Ibidem*, pp. 9–18.

the dispossessed, alien, indifferent world. Attempting to comprehend this world, Meillassoux tries to devise another rationality based on speculative thinking with the privileged role of mathematics and natural sciences. The main task for reason is to think “the absolute”, “the outside”, independent of experience, separated from thought or even capable of destroying it. However, Malabou is dubious whether the plural form of “sciences” actually refers to something beyond physics. Acknowledging that modern rationality must change its approach towards science, Malabou claims that Meillassoux ignores modern neurobiology which also proposes the notion of contingency and an even stronger attack on the transcendental, challenging it with a possibility of reducing the subjective phenomena to the neurobiological brain activity. If continental philosophy abandons the transcendental level of thinking, as Meillassoux does, it might undermine the ground for the critique of such neurobiological reductionism.

According to the dynamic development of modern neurobiology, scientists and theoreticians announce “the consciousness revolution”, which confronts us with a new, naturalistic and reductive understanding of subjective phenomena as self, consciousness, thinking or voluntary acts through the computational processes in a brain. Furthermore, a development in neurotechnology that occurs in parallel to progress in empirical knowledge (new medicaments, virtual reality, methods of detailed observation of brain activity) brings forth ethical and political dilemmas. Humanities react to

this revolution with scepticism and suspicion, which reflects the tensions between continental philosophy and science in the 20<sup>th</sup> century, including the critique of scientific practice in Frankfurt School or “science wars” between postmodern intellectuals and scientist philosophers. Although the critique of scientific discourse from continental philosophy operated on a wide spectrum of issues, the transcendental, as a guarantee of autonomy and irreducibility of thought, holds special significance.

*The Language Game of Responsible Agency and the Problem of Free Will* by Jürgen Habermas might serve as a useful example of the fundamental role of the transcendental in a critique of the neurobiological paradigm from continental philosophy. The text is the response to the “Brain and Mind” manifesto by a German neuroscientist, who argues in a reductive tone that our conception of free will and agency will be overthrown by development in neuroscience. As Habermas remarks, this approach entails the elimination of responsibility, acting subject and agency in general:

In the manifesto [...] the neuroscientists take the position that all mental acts and experiences are not merely instantiated by brain processes but rather are causally determined by brain states alone. If neurological research today already holds the key, as is claimed, to soon explaining any given motivation or deliberation exclusively on the basis of the nomologically determined interaction of neuronal processes, then we would have to view free will as a fiction. For, from this perspective, we must no longer presuppose that we could have acted differently, nor that it was up to us to act

one way rather than another. Indeed, within neurological descriptions, the reference to 'us,' as agents, no longer makes any sense.<sup>7</sup>

In his response to the neurobiological perspective, Habermas does not want to advocate for a dualism between the mind and the world. Instead, he gives a purely transcendental argumentation, claiming that there exist limits of objectification: the epistemic subject, scientist as a subject of knowledge, cannot be eliminated since there is no way to practice science as a "view from nowhere". One cannot reduce subjectivity to brain activity without reducing science itself. Additionally, for Habermas, reductive neuroscience also does not commit to the project of enlightenment, because it destroys the reference to the subject that would lose its naivety and change his understanding about itself. Here, the transcendental serves as a level of condition of the experience that imposes a limit on the experimental objectification. However, as Thomas Metzinger points out, the development of the neurobiological paradigm might actually change the conditions of knowledge or even the whole understanding of what it means to know, expanding the process of disenchantment to the conscious self and redefining conditions of knowledge in neurobiological terms. Metzinger named such probably approach "Enlightenment 2.0".<sup>8</sup> The

conclusion I would like to draw from the above discussion is that towards the relation between humanities or critical theory and science, we face two unsatisfactory perspectives: reductionist, which eliminates self-reference of the subject, and conservative, which cannot respond to problems caused by consciousness revolution, and might also change our understanding of thinking. The virtue of Catherine Malabou's books lies in framing a "third way" between philosophical conservatism and scientific reductionism, connecting neurobiology with the philosophical discourse on subjectivity.

In one of the most engaging parts of *Before Tomorrow*, Malabou attempts to demonstrate how a recent development of epigenetics, the scientific discipline that analyzes factors responsible for the expression of genes, changes the whole approach to the evolution of the brain, no longer perceived as a complex machine. Epigenetics refers to mechanisms of expression and transcription of the genetic code, structuring the activation and silencing of the genes. The development of this discipline questions the belief that evolution is only determined by DNA and adaptive selection. Epigenetics introduces additional factors responsible for the activation of code and, what is perhaps most astonishing, these factors might be inheritable. Based on this, Malabou remarks that we can argue that individual experience is more important for evolution than it was previously assumed.

<sup>7</sup> J. Habermas, *The Language Game of Responsible Agency and the Problem of Free Will: How Can Epistemic Dualism Be Reconciled with Ontological Monism?*, "Philosophical Explorations" 2007, vol. 10(1), pp. 13–50.

<sup>8</sup> *Enlightenment 2.0: Interview with Thomas Metzinger, Collapse: Collapse: Philosophical Research and Development Issue # 5: The Co-*

*pernican Imperative*, ed. D. Veal, Urbanomic, Falmouth 2012.



Malabou offers a metaphor that renders useful for understanding this change in genetics. For a long time, genetics was dominated by the notion of DNA as a code or a program which constitutes the living being. The brain is a mere actualization of what has already been determined by the code. Epigenetics perceives DNA rather as a book, open to various interpretations caused by external and environmental factors. The relation between genetic code and epigenetic factors is reciprocal: a living being can influence the mechanism of activation of the code that determines it. Although epigenetics is a constantly growing scientific discipline, Malabou predicts that many conditions, taken as determined by genes, are far more open for changes and modifications. Therefore it matters what social and political environment the brain develops in. Malabou sees the epigenetic paradigm as containing the possibility that a reductionist perspective might not deprive the subject of its spontaneity excluded by a strict deterministic approach to the concept of gene and, perhaps, even offer a new understanding of the relation between the biological and the social.

Speculative realism and the neurobiological paradigm, as presented above, are ambitious attempts to overcome the Kantian tradition of conceiving rationality as a critique, questioning the notion of the necessary, invariant transcendental level, independent from experience. However, as one would expect, for Malabou, neither speculative realism nor the neurobiological paradigm appear as alternatives sufficient for the demands of modern rationality. Although Meillassoux's critique of transcendental philoso-

phy seems to be convincing, Malabou doubts if speculative realism can be a real alternative. Meillassoux claims that laws of nature are contingent, but at the same time he cannot give an explanation for their empirical stability, the simple fact that the world does not change dramatically. Malabou expresses the objection that the absolute contingency does not seem to be supported by any empirical phenomena. Moreover, contingency actually changes nothing, because it makes no difference to the world conceived as undetermined by our categories of cognition, except for the sheer statement of its instability. Furthermore, in neurobiology, as Malabou claims, it is possible to find a far more interesting notion of contingency through the "epigenetic structure of the real", where the categories of subjectivity are understood as a result of the contingent, evolutionary history of a brain. If the modern development of neuroscience is, as Malabou claims, one of the most important challenges for modern rationality, Meillassoux cannot propose "another" rationality sufficient for current demands, since he shares its silence and indifference to biology with the philosophical tradition.

Regarding the neurobiological paradigm, Malabou expresses similar objections to Jürgen Habermas. Neurobiology is unable to comprehend self-reference of the subject and its ability to self-determine, and it does not provide a narrative of the subject getting conscious of its brain, eliminating the dimension of change of subject knowledge and self-understanding. Furthermore, it does not leave the opportunity to understand the brain not only as a biological, but also

a political and ideological entity. In a short book *What Should We Do with Our Brain*, Malabou argues that precisely for this reason, scientific revolutions, despite their radicalism, actually, change nothing:

But really, what's the point of having an all-new brain if we don't have an all new identity, if synaptic change changes nothing? And what do we get from all these discourses, from all these descriptions of neuronal man, from all these scientific revolutions, if not the absence of revolution in our lives, the absence of revolution in ourselves? What new horizons do the new brains, the new theoreticians of the brain, open up?<sup>9</sup>

This not so recent book continues to strike by its attempt to connect empirical researches in neurobiology with Malabou's famous concept of plasticity: the capacity to receive a form and to give a form, to be formable and formative at the same time. Neurobiology, for Malabou, proves that a brain has history, its organization is formed not only by the genetic code, but also environmental factors and individual experience. But neurobiology alone cannot conceive how a brain is formed by political organization, ethical choices, etc. Plasticity allows us to perceive a brain not only as a neurobiological, but also a historical, ideological and political entity. Although this method of creating a theory already might be seen as a new paradigm, the problem of the transcendental remains to be solved. Quite surprisingly, in counterpart to the philosophical atmosphere

of the 21<sup>st</sup> century, in *Before Tomorrow* Malabou urges us to construct a new paradigm of rationality not against Kant, but through a dialogue with his philosophy:

What I am saying is that *the relinquishing of Kant must be negotiated with him, not against him*. Indeed, as I shall attempt to show, in Kant himself we find, at the heart of the *Critique*, the orchestration of an encounter between the transcendental and that which resists it. This encounter is not about the divide between the transcendental and the empirical; instead it is the confrontation of the transcendental and that which organizes itself without it [...] Once again, we have no choice but to acknowledge that neither fundamental ontology, nor biological reductionism, nor "speculative realism" manages to successfully answer the current demand for a rigorous post-critical philosophical rationality. This post-critical crisis of reason must therefore be brought back to the dialogue with Kant, and, in return, we must force Kantian thought to speak about its own founding validity, to measure the force of its "before" in terms of the demands of its tomorrows.<sup>10</sup>

In an attempt to force Kant to speak for himself after more than 200 years, Malabou examines the historical discussion of paragraph 27 from *Critique of Pure Reason*, where the concept of "epigenesis of pure reason" is introduced by Kant to explain the origin of the relations between categories and objects. "Epigenesis" is a metaphor used by Kant to suggest that reason with its *a priori* categories and agreement between categories and objects is neither innate nor acquired through experience but rather "develops like a living individual". Pure reason does not develop through experience, but it

<sup>9</sup> C. Malabou, *What Should We Do with Our Brain*, transl. S. Rand, Fordham University Press, New York 2008, p. 66.

<sup>10</sup> *Eadem*, *Before Tomorrow...*, p. 15.



also does not have performed, strict, necessary limits with which each individual is born. This would mean that Kantian reason combines the autonomy of thinking guaranteed by the transcendental and the idea of creative development, which can now be observed in the neurobiological paradigm. Interpreting Kant through this phrase could be a chance for a new understanding of critical rationality. But how can the development of *a priori* categories or the agreement between them and objects be comprehended coherently? For Malabou, the idea of pure development, at first glance, appears to be contradictory. If *a priori* is the product of a dynamic, creative and self-forming relation, how can it be pure, necessary, and not derived from experience?

Various philosophical orientations are discussed in the book, from preformationist interpretations of Kant, through approaches linking Kantianism to the theory of evolution, to Foucault, Heidegger and Meillassoux. The long discussion of the transcendental leads to an unsatisfactory opposition. To defend the necessity and autonomy of the transcendental, categories of reason have to be presented as innate (at least in part). To claim that reason develops as a living being, it is necessary to replace the transcendental with the contingent, evolutionary agreement between categories and objects, their “gradual harmonization” in the process of biological evolution. In many passages of the book, Malabou reminds us that the first possibility is clearly rejected by Kant, because treating categories of reason as innate deprives reason of spontaneity of the understanding. From “epigenesis of pure

reason” one has to choose between a creative, epigenetic development of reason understood as a brain and pure, autonomous reason with its innate *a priori* categories, unless, as Malabou demonstrates, Kant is interpreted through the retroactive effect that *Critique of Judgement* has on the *Critique of Pure Reason*. In the movement between the First and Third critique, Malabou sees the possibility for a new, epigenetic paradigm of rationality, where the autonomy of the transcendental meets contingency and facticity of life.

In her reading, Malabou interprets *Critique of Judgement* as an encounter between the reason and a living being, between the transcendental and the nature that resists it. The problem pure reason has with self-forming life is that it cannot be understood simply as an object of possible experience. Nature addresses the question of independence of order or organization in relation to reason and demands a change in the system of categories. To integrate the phenomenon of life into his critical enterprise, Kant is forced to introduce “purposiveness” as a new transcendental principle, which entails the modification of two categories of the system: causality and necessity.

In *Critique of Pure Reason*, causality is conceived in a strictly mechanistic manner (as a chain of causes, where one thing causes the other). However, in *Critique of Judgement*, where Kant considers beauty and life, it is claimed that a living being cannot be understood as a mechanism, for the reason that it forms itself and maintains its own existence. A living being is not mechanistically determined by its parts. It is rather an

idea concerning a whole that determines a combination of parts, as in the case of an artefact, for example, a watch. The becoming of a watch is, for Kant, caused not by specific parts of a watch, but by the idea of a whole watch. In this case, the concept of an object should be understood as its cause. For this reason, Kant identifies purposiveness with the causality of a concept. What separates a living being from an artefact is that parts are correlated with a whole in a reciprocal relation, simultaneously determining each other. In Kant's words: "a thing exists as a natural end *if it is* (though in a double sense) *both cause and effect of itself*."<sup>11</sup> Kant gives a simple example of a house to illustrate this reciprocal causality: "a house is certainly the cause of the money that is received as rent, but yet, conversely, the representation of this possible income was the cause of the building the house."<sup>12</sup> All parts of an organism determine each other, and are related to an idea of a whole, precisely through this causal structure. Kant gives an example of a tree, to show that in many of its functions, a living being is both cause and effect of itself. A tree as a whole depends on the growth of its parts, but at the same time all parts mutually maintain themselves in existence, and an idea of a whole organizes the growth of new parts and reproduction of itself. Because reciprocal causation between a whole and parts is structured as a positive feedback loop (a whole causes organized growth, and parts grow to

a whole), Kant ascribes self-propagating, formative power to organized, living beings. Kant used the term "teleological" to name the form of judgement that treats things not as objects, but as purposes and ends.

In *Critique of Judgement*, purposiveness involves contingency, a concept absent in *Critique of Pure Reason*. Organization of a living being cannot be conceived as necessary, because nature, without contradiction, could be organized otherwise. Because life organizes itself in a spontaneous, contingent way, purposiveness is understood as the "lawfulness of a contingent". In her interpretation, Malabou argues that Meillassoux is inaccurate about contingency in Kant's philosophy because he focuses only on *Critique of Pure Reason*. However, in *Critique of Judgement*, meaning, particular laws of nature, and even the transcendental structure are understood by Kant as contingent. According to Malabou, this contingency does not exclude the necessity of *a priori*, but necessity and contingency are entwined together. The necessity of the condition of our knowledge is itself grounded in the spontaneity of nature. Although multiple natural laws are contingent, their unity is necessary for our knowledge of (one) nature. This analysis leads to a conclusion that the concept of the transcendental is not invariable itself, because one can observe a change in the transcendental structure between the first and the third critique.

Therefore, Malabou deems Kant, rather than Meillassoux, the one who can lead our understanding of the modern, biological notion of contingency. As Malabou claims, "long before his twen-

<sup>11</sup> I. Kant, *Critique of Judgement*, transl. W.S. Pluhar, Hackett Publishing Company, Cambridge 1987, p. 199.

<sup>12</sup> *Ibidem*.

ty-first century readers, Kant completely exposed the transcendental to the factuality of life<sup>13</sup> and “discovered the power that certain appearances have to decorrelate thought.”<sup>14</sup> Moreover, reason can discover itself as a fact in nature: “reason not only sees itself in the mirror of the living being, it also sees its own life: it sees itself living.”<sup>15</sup> This by no means entails the reduction of reason to its neurobiological activity but also does not lead to a distinction between two separate levels of reason that are independent of each other: transcendental and neurobiological. *Critique of Judgements* presents how the autonomic, transcendental structure interacts with the image of itself as a living being: there is a “return effect” that life has on thought.

Malabou’s whole interpretation is based on the perception that Kantian “epigenesis of pure reason” coincides with the recent development of epigenetics. Both Kant and the epigenetic paradigm understand a living being as formative and formable at the same time, developing through improvisation that generates order, escaping the notion of an organism as a strictly determined mechanism. Moreover, for Malabou it is Kant who allows us to comprehend the revolution of epigenetics. By ascribing “formative power” to it, through circular causality – where it’s not only parts that determine a whole being, but also a whole, which reciprocally determines its own parts in a living organism, Kant constructs a notion of life that is simul-

taneously its own cause and effect. Furthermore, introducing a circular form of time, “epigenesis” describes the development of the transcendental structure.

Malabou characterizes epigenesis in a broad sense as the economy of a relation between code, interpretation, and transformation. Genesis is an evolution from the origin to the present state. Epigenesis, by contrast, connects the dual dimension of regression and progression, and develops in a circularity of time. New parts combine and redefine what is pre-existing but this arrival of new parts is teleologically determined by the pre-existing whole. Epigenesis “takes place at the moving contact point between origin and the present state of affairs, until their difference disappears right into their contact – tensed origin, retrospective present, future in the making.”<sup>16</sup> The transcendental that is *a priori* condition of experience, can develop through thinking in compliance with the experience it conditions. This transcendental circularity of time is what Malabou tries to extract from the development of the Kantian system.

Let me conclude by suggesting the possible consequences that a new approach might have for critical rationality. First of all, Malabou offers a third way between transcendental autonomy and neurobiological reductionism. It is possible to perceive the brain not only as causally determined by particular neurobiological processes, but also these very processes as organized according to the idea of a whole brain and its purpose: reason and thinking. Thinking of the

<sup>13</sup> C. Malabou, *Before Tomorrow...*, p. 161.

<sup>14</sup> *Ibidem*, p. 169.

<sup>15</sup> *Ibidem*, p. 180.

<sup>16</sup> *Ibidem*, p. 157.

mind as being its own cause and effect allows to conceive an evolution of the particular brain or even historical evolution of the brain in terms of creative, contingent processes, where individual experience is not without relevance. Rather than to conceive nature as devoid of subjectivity, as in speculative realism, Malabou proposes to use Kantian forms of teleological judgement to comprehend subjectivity as part of nature.

However, what is essential to the new paradigm of rationality is the effectuation of the object on thinking, a change of thinking caused by an object that is thought, as in the case of the Third Critique, where the transcendental is forced to change itself as an attempt to comprehend a living being. If modern neurobiology provides thinking with its own image, the very process of thinking and reasoning as a material, biological process, the new paradigm of rationality will not consist of separating rationality for its image, but rather of an interaction with it through reciprocal causality. Although the thinking subject might be forced to change its understanding of itself through an encounter with neuroscience, it is the autonomy of the subjectivity of thinking that conditions the possibility of this change.

Therefore, Malabou claims that we should not relinquish the transcendental, especially its “historico-critical” dimension. Malabou agrees with Kant that there are realities that exist only in thought, which also demands its own, autonomous level. This autonomy enables philosophical rationality to conceive the relation of the brain to ide-

ology, politics or culture and criticise the neurobiological discourse when it ignores these aspects. However, the future task for critical rationality is not merely negative but includes thinking according to a new neurobiological image, not as excluding autonomy, spontaneity and freedom, but, on the contrary, allowing to understand them as grounded in contingent laws of nature. Critical rationality needs to provide a narrative of subjects gaining consciousness of their brains, especially of the fact that we are causes and effects of ourselves, simultaneously formed and formative, determined by our brains and changing their structure through the way we use them.

Though the neurobiological image of thinking challenges metaphysics, it does not entail abandoning it, but, on the contrary, it relies on rethinking it. What is remarkable about Malabou’s method is her interpretative finesse, which turns old concepts of the greatest continental philosophers, such as Kant, Hegel and Heidegger, into dynamic ideas that strike with new perspectives on problems of modern thought. In *Before Tomorrow*, “spontaneity of the understanding” rendered possible through the change of the transcendental structure by the retroactive effect of the *Critique of Judgement* on *Critique of Pure Reason*, which allows to conceive a change of the self-knowledge subject through interaction with its own neurobiological image. In consequence, as Malabou claims, it is Kant who can guide us towards the exit from Kantianism.

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