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The Dialectic of Formalization

The English translation of Alain Badiou's *The Concept of Model*, published forty years after its original French release, includes an interview with the author in which Zachary Luke Fraser and Tzuchien Tho take the opportunity to systematically discuss Badiou's philosophical opus, spanning four decades, focusing on the continuities and discontinuities in his writing. Tho emphasizes the theme of formalization, which seems to have been at the centre of Badiou's philosophy since his early understanding of formalization and mathematics as a process without a subject, an idea that he analyses in *The Concept of the Model* (1969) and the two acclaimed articles "Infinitesimal Subversion" (1968) and "Mark and Lack" (1969).¹ Tho locates the theme of formalization in Badiou's later works as well: in *The Century*, in which Badiou writes about the philosophical duty to think formalized in-humanism, and in *Logic of Worlds*, where we find the concept of *subjective formalism* or the "subject-form." The theme of formalization, therefore, holds a central place in Badiou's work. It connects his early work with his mature work and also represents a recurring theme, through which we can follow the changes in the most significant concepts of Badiou's philosophy. Badiou strongly advocates for the relevance of mathematical formalization, but it is evident from his answers in this interview that the theme of formalization has a wider reach: art, politics, science (mathematics), and love, understood by Badiou as truth procedures, can also be thought of as some sort of formalizations. Badiou's doctrine of truths relies on the idea that truths are eventual by nature and that in the realization of a truth the subject participates as its agent. In the aforementioned interview, the scheme event – truth – subject, typical of Badiou's mature work, is reformulated as event – new formalization – subject as an effect of formalization.

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¹ Cf. Alain Badiou, Zachary Luck Fraser, and Tzuchien Tho, "The Concept of Model, Forty Years Later: An Interview with Alain Badiou", trans. Z. L. Fraser and T. Tho, in A. Badiou, *The Concept of Model*, Melbourne, re.press, 2007, p. 87.

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If formalization can take the place that, within Badiou's philosophy, is usually reserved for truths, then the concept of formalization must be considered from a wider perspective than the one offered by mathematical and logical discourse. Badiou assures us that the dialectic of formalization can indeed be found at work in truth procedures. Referring to his early concept of model, he claims that what was at stake at the time was "the *dialectic of formalization*," which is to say "a *dialectic of the truth procedure as such*."² The dialectic of formalization therefore presents the dialectical procedure of the realization of a new, true form in the world. This realization is based on subjective activity, whereas the body of the subject-form is seen as the bearer of true formalization.

Dialectic versus formalization

We have to point out that the dialectic of formalization combines two problematic concepts of Badiou's philosophy: the concept of dialectic and the concept of formalization. These two concepts are problematic because it seems that Badiou did not define them completely and thoroughly. Namely, Badiou does not have a systematic "theory" of formalization but only offers the reader scattered, fragmentary comments that resemble impromptu allusions rather than a clearly elaborated position. Regarding the concept of formalization, we are, therefore, faced with a lack of a clear conceptual definition. On the other hand, the concept of the dialectic may be too burdened with complex theoretical (Marxist and Maoist) history, which Badiou followed mostly in his younger years. In another interview, Badiou explained his ambivalent position:

You could almost say that my entire enterprise is one giant confrontation [*démêlé*] with the dialectic. That is why sometimes I declare myself a dialectician and write in defense of the great dialecticians (but I mean the French dialecticians, which is not exactly the same as the Hegelian dialectic), while at other times I declare myself an antidialectician. You are absolutely right to perceive a certain confusion in this whole business.³

² *Ibid.*, p. 91, italics added.

³ Alain Badiou, Peter Hallward, and Bruno Bosteels, "Beyond Formalization: An Interview", trans. B. Bosteels and A. Toscano, in B. Bosteels, *Badiou and Politics*, Durham and London, Duke University Press, 2011, p. 331.

We dare say that this “confusion” is not an inconsistency in Badiou’s philosophy, but rather an uneasiness of a structural nature. Formalization and dialectic have had a conflicted relationship in a long line of philosophies long before that of Badiou. Hegel’s philosophy provides a good example of this conflict; it finds mathematical formalization to be lacking in speculation exactly because it is an anti-dialectical method. A well-known critique of mathematical formalization can be found in Hegel’s “Preface” of *The Phenomenology of Spirit*, where Hegel condemns mathematics for not proceeding dialectically and thus coming up with fixed, dead, lifeless propositions and results. Mathematics presents results without the movement that led to these results: the mathematical process does not manifest itself in the result as its inner moment.

If we accept Hegel’s position on the anti-dialectical method of formalization, then our insistence on Badiou’s “dialectic of formalization” is conceptually unacceptable, if not even contradictory. The question is also to what extent Badiou himself stands behind his own formulation, because the only time he mentions it, as far as we know, is in this one interview. Could it be that it was all just a witty provocative remark?

If we turn to Badiou’s interpreters, we can notice that they do not consider the dialectic of formalization to be a solid concept that would allow us to seriously analyse Badiou’s philosophy. It seems that most of them prefer to hold both concepts – dialectic and formalization – at the utmost distance from each other. A symptomatic case of this is Paul Livingston’s interpretation, which is focused on the political effects of a specific mathematical formalization, and yet he does not include nor debate the concept of dialectic in his book, aptly titled *The Politics of Logic: Badiou, Wittgenstein, and the Consequences of Formalism*.⁴ Coming from the opposite direction is Bruno Bosteels’s interpretation, which lowers the conceptual value of mathematical formalization and emphasizes the importance of dialectic within Badiou’s philosophy. Thus, Bosteels declares his understanding of Badiou with metaphorical, yet explicit words: “For the purpose of what follows, this means above all to size up the iceberg of emancipatory politics that

⁴ Paul Livingston, *The Politics of Logic: Badiou, Wittgenstein, and the Consequences of Formalism*, London and New York, Routledge, 2012.

is all but hidden – if it has not already suffered a complete meltdown as a result of global warming – below the arctic waters of mathematical formalization.”⁵

We can conclude that there is an evidently disproportionate relation between formalization and dialectic, which leads to an obvious and mutual non-relationship. We could say that *an emphasis on formalization leads to the disappearance of dialectic, and an emphasis on dialectic leads to the diminishing of the role of formalization.*

If we take a moment longer to discuss Bosteels’s interpretation, it becomes apparent that Bosteels openly addresses the importance of mathematical formalization for the interpretation of Badiou’s philosophy and the actual role that mathematics plays therein. Given that he considers mathematics to be an ontology and by its logical extension a phenomenology, Badiou’s explanation of being and the world heavily relies on mathematical methods and formalisms, which he, according to Bosteels, excessively applies also to the conceptualization of categories such as truth, subject, and change. Bosteels uses Sam Gillespie’s reading of Badiou as an example of the excessive use of mathematics. Gillespie, on the other hand, criticizes Bosteels’s (and also Žižek’s and Critchley’s) non-mathematical interpretation of the concept of generic multiplicity, which according to Gillespie cannot be understood without adequate use of mathematics.⁶ Bosteels replies that despite Badiou’s application of the mathematical concepts of “the generic” and “forcing” to the concept of truth, both concepts work in a completely different way in a philosophical discourse than in mathematics. Mathematics operates only in an ontological situation and its domain is very limited outside of ontology, especially when dealing with the relation between philosophy and politics:

Not only are we placed in a non-ontological domain where the equation “mathematics = ontology” no longer really applies, but to understand this other domain, we should always come back to the principle that “ontology ≠ politics” since politics, like the events that punctuate the historicity of mathematics as a truth proce-

⁵ Bruno Bosteels, *Badiou and Politics*, Durham and London, Duke University Press, 2011, p. 43.

⁶ Cf. Sam Gillespie, *The Mathematics of Novelty: Badiou’s Minimalist Metaphysics*, Melbourne, re.press, 2008, p. 72, and Bosteels’ extended response in Bosteels, *Badiou and Politics*, pp. 33–34.

ture, involves that which is not being qua being. In other words, there is no such thing as a political ontology.⁷

Even though all mathematical concepts have a meta-mathematical or meta-ontological status in philosophy, it is politics, as per Bosteels, that overdetermines the meta-ontological use of mathematics. The latter is true especially because being-qua-being becomes visible only after contingent events and subjective interventions. In this respect, the order of meditations in *Being and Event* should be reversed, says Bosteels: Badiou should first introduce the theory of event, the truth, and the subject, and then the theory of being-qua-being, since the inconsistency of the situation becomes apparent only after subjective action.

According to Bosteels, the suturing of philosophy with the mathematical procedure can be easily noticed in the symptomatic disappearance of the concept of dialectic. Badiou's return to mathematics at the end of the 1980s, following his research on the political (this research is usually placed in Badiou's Maoist phase in secondary literature), is so important for some interpreters that they call it Badiou's *mathematical turn*.⁸ Bosteels objects to this interpretation and does not find any definitive confirmation of a mathematical turn.⁹ He insists on the continuation of the theme of dialectical materialism, which ties together Badiou's early texts with his later ones, including *Logic of Worlds*. According to Bosteels, "mathematical interpretations" are guilty of a violent takeover of Badiou's philosophy by means of an anti-dialectical mathematical method. "Mathematics, briefly put, is thought to have replaced dialectics in the more recent and more widely read works by Badiou."¹⁰ For Bosteels, this is highly misleading and may lead to a wrong interpretation of the complicated relation between being and event. Only the dialectical modus of thought can disable the illegitimate division between being and event. The word "and" in Badiou's magnum opus *Being and Event* should be complemented by a string of intermediary elements, developed especially in *Logic of Worlds* (the typology of change, the concept

⁷ Bosteels, *Badiou and Politics*, p. 40.

⁸ Cf. Peter Hallward, *Badiou: A Subject to Truth*, London, University of Minnesota Press, 2003, p. 49; Burhanuddin Baki, *Badiou's Being and Event and the Mathematics of Set Theory*, London, Bloomsbury, 2015, pp. 19 and 250; Jason Barker, *Alain Badiou: A Critical Introduction*, London, Pluto, 2002, p. 40.

⁹ Cf. Bosteels, *Badiou and Politics*, pp. 157 and 183.

¹⁰ *Ibid.*, p. 8.

of the body, etc.), according to Bosteels. These mediations between being and event remain invisible if the concept of dialectic is pushed aside.

We agree with some of the points Bosteels makes. Mathematical turn may indeed be too strong a term and thus creates an unduly and unnecessary divide between some parts of Badiou's philosophy. We also welcome and acknowledge Bosteels's work as pioneering; he is among the first interpreters of Badiou's work who conducted a systematic analysis of the concept of dialectic from the perspective of the connection between Badiou's mature work and his early writing. Thus, we agree with Bosteels that the theoretical set of Badiou's major works should consist not only of *Being and Event* and *Logic of Worlds*, but also *Theory of the Subject*, which is mostly neglected by Badiou's interpreters. But still, we would like to point out that Bosteels's approach is not without risk. His focus is specifically on the political procedure of truth. Yet, it is an open question whether this focus means that Bosteels only confines himself to this area in his analysis or whether this "limitation" actually favours and gives a conceptual privilege to politics ahead of the other three truth procedures (especially the scientific-mathematical).

In Bosteels's interpretation, we can notice that there is not only a methodological clash between the two methods, dialectic and formalization, but that there is also a tension between the two truth procedures – the mathematical and the political. As two independent truth procedures, mathematics and politics are two philosophical conditions (besides love and art) that participate in the process of conditioning philosophy. It is exactly in this place of conditioning that it seems as if in some interpretations one condition has a larger conditioning value for Badiou's philosophy than the other three. It should be noted, however, that Badiou's definition of "conditioned philosophy" forbids that an excessive conditioning value is assigned to any of the individual conditions, since the whole idea of philosophy under conditions arises from the principle of the equality of all four conditions. If it so happens that a certain truth procedure is neglected due to some other overly dominant truth procedure, the conditioning mechanism breaks and philosophy becomes sutured to one of the conditions. Truth procedures are the conditions of philosophy *only when* they equally, simultaneously, and systematically participate in a philosophical configuration.

Badiou's concept of philosophy under conditions comes from the idea that philosophy is not the source of all thought and that there are historical events that are thinkable through some *other order of thought*. This other order of thought is the truths, which are autonomous and independent of philosophy. In this sense, if we return to Hegel again, it has to be said that Hegel's disdain for mathematical formalization and preference for dialectical speculative thought is not the only thing that Badiou's philosophy goes against.¹¹ Badiou's issue with Hegel lies mostly in Hegel's speculative gesture, which Badiou describes as a *romantic speculative gesture*. This romantic gesture implies that mathematics and philosophy are kept in a *strong non-relation*. The premise of romanticism is that mathematics is not a thought.¹² Romanticism sees mathematics as *an adversary*, due to the use of certain concepts in mathematics, such as the concept of infinity, which is also used in philosophy. Philosophy and mathematics therefore are not sufficiently and clearly demarcated, which means they have to be separated in some other way, for instance by philosophy declaring that it holds the power and the advantage of philosophical conceptual thought over the conceptual uselessness of mathematical technicalism.

We can clearly see this in Badiou's comparison of Plato's unromantic orientation with Hegel's romantic orientation. Just like Hegel, Plato sets dialectic over mathematics. But he does not place mathematics on the level of non-thinking. He only distinguishes mathematics and philosophy as two different types of thought: dialectic is *nous*, and mathematics is some other autonomous thought – *dianoia*. Philosophy and mathematics do not disrupt each other; they are not competitors and can co-exist next to each other. Plato therefore sees no problem in demanding knowledge of geometry from anyone who wants to pursue true matters of thought. Contrary to Plato, the romantic speculative gesture makes mathematics and philosophy compete over the same concepts. In this sense, philosophy and mathematics are rivals: if infinity is a true concept, then for Hegel it is a philosophical concept, while the mathematical notion of the infinite is just “a futile and crude approximation.”¹³

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¹¹ If we understand formalization (as per Badiou) as the power of the realization of form as such, it could even be proven that a similar idea of the form-realization power of logic was in some way already present in Hegel's concept of the science of logic, which realizes the form of the form (namely, the absolute idea) itself.

¹² Cf. Alain Badiou, *Conditions*, trans. S. Corcoran, London, Continuum, 2008, p. 95.

¹³ *Ibid.*, p. 109.

By claiming exclusive rights over thinking with true concepts, romantic philosophy degrades discourses like mathematics to a level of vulgar forms of thought. This implies that philosophy is not interested in autonomous forms of thought that are independent of philosophy. Badiou's concept of conditioned philosophy, on the contrary, is based on the idea that some other thought, autonomous and independent of philosophy, is able to produce real effects, which philosophy then reflects on, observes, and by so doing also contemplates the temporal being of truths.¹⁴ This autonomous other thought draws its autonomy from nothing other than *the inner processes of its own production*.

The emphasis on the autonomy of the other order of thought is of crucial importance for our topic because it ties us to the theme of formalization. Our initial assumption is that Badiou uses formalization to describe procedures for the realization of autonomous, true, and subjective forms. This can be traced back to Badiou's early texts from the end of the 1960s. The idea of formalization, just like the concept of dialectic (according to Bosteels), thus gives us a common theme and connection between Badiou's early and mature philosophy.

Autonomous and homogenous procedures of formalization

The emphasis on the inner and homogenous procedures of truth production questions the historicist concept of dialectic. This is clearly demonstrated in the case of the political procedure of truth. In *Metapolitics*, Badiou, influenced by Sylvain Lazarus, condemns dialectic as obsolete, for it thinks politics from the outside and brings heterogenous elements into it. Bosteels notices that dialectic is the first victim of Badiou's metapolitical orientation: "Badiou does indeed seem to reject all forms of dialectical thinking as being inherently misguided – unable as they are to think politics *from within*, as would be the true task of the 'metapolitics'."¹⁵ However, this does not mean that Badiou is against dialectic per se. As Bosteels further explains, Badiou only criticizes the historicist and positivist understanding of dialectic. This kind of concept of dialectic is unsuitable for describing the concept of politics as Badiou and Lazarus understand it, because politics *thinks from within*, and we have to understand it in terms of its

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¹⁴ Cf. Jelica Šumič Riha, "Filozofija kot vzgoja z resnicami", *Filozofski vestnik*, 31 (3/2010), pp. 151–152.

¹⁵ Bosteels, *Badiou and Politics*, p. 8.

homogenous singularity without the dialectical insertion of external relations: “Against the notion of dialectical synthesis, it is necessary to invoke here Sylvain Lazarus’ thesis that a political sequence should be identified and thought on its own terms, as a homogeneous singularity, and not in terms of the heterogeneous nature of its empirical future.”¹⁶

While Hegel criticizes the *mathematical result* as dialectically unmediated, we can now see that Badiou criticizes the *dialectic of the result* because it involves heterogeneity in political sequences and thus thinks it externally and empirically. This means that Badiou is searching for a method which can think its object rationally, “internally”, and without bringing in external, heterogeneous elements; in other words, a method that examines the object with regard to the *principle of homogeneity*. If dialectic carries the burden of historicism, then it is not capable of this inner protocol of derivation, and due to this inability, we have to leave it behind. However, another concept allows Badiou to defend the demand for an internal and homogenous protocol of production. It is the concept of formalization, which we can already observe in the philosophy of the young Badiou.

Badiou’s first explicit example of an autonomous and homogenous process of production can be found in his early text “The Autonomy of the Aesthetic Process”, first published in *Cahiers Marxist-Léninistes*, 12-13 July 1966. In this essay, Badiou explicitly refers to Pierre Macherey, who, first in the article “Lenin, Critic of Tolstoy” and then in the book *A Theory of Literary Production* (1966), presents the idea of the autonomy of literary criticism. Macherey’s idea is interesting because it shows how rational-materialist thought differs from empirical thought. Rational research does not hold the object of examination to be a pre-existing immediate given that stands *outside* of the production of knowledge, but as being produced by the knowledge itself. That is why rational knowledge can change reality (contrary to empirical knowledge): because its own mechanism is transformative. It is transformative solely by producing the object of knowledge, which did not exist beforehand. As an object of criticism, an artwork *changes*, because: “The work that the author wrote is not precisely

¹⁶ Alain Badiou, *Metapolitics*, trans. J. Barker, London, Verso, 2005, p. 127.

the work (the same work) that is explicated by the critic.”¹⁷ A critic produces knowledge about the laws of the artistic process of production and these laws enforce the autonomy of the artwork in relation to the artist-creator. Macherey, for instance, turns to Lenin’s analysis of Tolstoy’s work to show how complex social ambiguities can be traced in Tolstoy’s work independently of the author’s intent, his understanding of Russian history and society, or personal ideology. For Lenin, Tolstoy’s literature is a mirror of the Russian revolution (of 1905), which remained concealed from the author’s eyes: “What is seen in the mirror of the work is not quite what Tolstoy saw, both in himself and as an ideological spokesman.”¹⁸

Following Macherey, we should attribute a certain power of transformation to the process of literary production, which can never be reduced to ideology. But Badiou wonders how great this power of transformation really is if something that enters the process remains unchanged: literary production works with “ideological generalities,” which remain untransformed by the process and function as a heterogeneity in relation to the literary economy of the work.¹⁹ Macherey keeps the ideological heterogeneity inside of the work of art and by doing so enables the work to function as a *contradictory multiplicity*. Badiou’s theory of the aesthetic modus of production, on the contrary, establishes itself by rejecting the formula of heterogeneity: “More generally, we must clearly understand that what the aesthetic practice ‘belabours’ – the generalities that it transforms – *cannot be heterogeneous elements*: the ‘raw material’ of the process of production is itself ‘already’ aesthetic.”²⁰ So the key point of disagreement between Badiou and Macherey is that the latter *keeps a moment of heterogeneity* (otherness) in the heart of the artwork, which, if we follow the former, radically *compromises the autonomy* of aesthetic production. We should therefore conclude that Badiou insists on a homogeneous and autonomous process of production within the aesthetic realm.

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¹⁷ Pierre Macherey, *A Theory of Literary Production*, trans. G. Wall, London, Routledge, 2006, p. 8.

¹⁸ *Ibid.*, p. 135.

¹⁹ Cf. Alain Badiou, “The Autonomy of the Aesthetic Process”, trans. B. Bosteels, in A. Badiou, *The Age of the Poets: And Other Writings on Twentieth-Century Poetry and Prose*, London and New York, Verso, 2014, p. 121.

²⁰ *Ibid.*, p. 125, italics added.

With the second example we move from art to science. Badiou introduces his conceptualization of science by using the same emphasis on the autonomy and homogeneity of the rational-materialist process of production. Timewise, we are still in the period of the late 1960s, when Badiou published a text entitled “The (Re)commencement of Dialectical Materialism” (1967), a review of some of Althusser’s works, the essay “Mark and Lack” (1969), and the seminar booklet *The Concept of Model* (1969). In these epistemological works, Badiou views science as a stratified, self-sufficient, impersonal, mechanical, and strictly homogenous process of production. Mathematics and logic do not bring anything into their practice that they have not produced themselves. In his critique of Jacques-Alain Miller, who understands the logic of the signifier as a more fundamental logic than the logician’s logic, Badiou responds that nothing comes into logic that has not been produced by the logical machine. All of the external elements (suture, signifier, subject) that Miller introduces into his theorization of the very foundations of logic are nothing but metaphysical inputs, according to Badiou. The science of logic is a rational apparatus, an objective formalization that functions mechanically, disciplinarily, like a Turing machine. Badiou compares it to a psychosis, but it is worth noting that what he has in mind is not some kind of a formalist delirium about reality that would actually be devoid of reality. Contemporary scientific rationality operates within a highly specialized, experimental, and “artificial” practice that does not have much in common with our “natural” perception of reality. It is based on experience, but as the French word *expérience* implies, it is an experience as much as it is an experiment.

At this point, we should mention Badiou’s debt to the French epistemologist Gaston Bachelard. One of the most important principles of Bachelard’s epistemology was that “science has no object outside its own activity.”²¹ The object of scientific practice “is therefore not an immediate given and does not pre-exist the process of its production.”²² This means that science produces its own norms and the criteria of its own existence via its own scientific practice. In contrast to positivist epistemology (such as that of Karl Popper or Thomas Kuhn), which sooner or later resorts to the problem of the foundation of objective knowledge, Bachelard establishes the objectivity of scientific knowledge without seeking

²¹ Dominique Lecourt, *Marxism and Epistemology: Bachelard, Canguilhem and Foucault*, trans. B. Brewster, London, NLB, 1975, p. 26.

²² *Ibid.*, p. 7.

any outside guarantee for it. Scientific objectivity does not need a reason and proof of its objectivity, for it is already guaranteed by the process of scientific production.

Badiou aims at this form of scientific objectivity, too. The real as a completely exterior objectivity has no value for scientific discourse; the real, which science aims at, reveals itself only when placed into the framework of a homogenous formalized production, using specialized means of scientific formalization. This is also how we should perceive the mathematical concept of model, which Badiou introduced in *The Concept of Model*. The scientific concept of model is not an ideal type or scheme of something empirical, but an independent object of mathematical formalization. The theory of model is divided into the theory of syntax and the theory of semantics, both of which are *mathematical* and treated mathematically. This is particularly hard to grasp in semantics due to its interpretative value. Within an empiricist understanding of science, semantics is considered to be a theory that interprets and brings in meanings from outside the scope of mathematics. Badiou does not accept that, because for him there is no “outside”, unless by “outside” we mean something that is already being produced *inside* of “a *mathematical envelopment*.”²³ The concept of model is strictly dependent on mathematical set theory, which does not define the set as an empirical set of objects. Instead, an “object” only exists if it belongs to a *mathematical* set (“belonging” (\in) is a sign of “existence”). Just like vacuum tubes are the means of production of physics, formalized syntax is the means of mathematical production.²⁴ The scientific object is therefore an “artificial” object that is produced in a homogenous and internal protocol of scientific formalization.

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This understanding of mathematical formalization remains the same in Badiou’s radical ontological project, in which he equates mathematics with ontology. We can read this equation as a shortened form of the following description: mathematics = a mechanized machine that writes using the axiomatic language of formalization = an experimental scientific practice that produces its own object and operates with its own material, which does not come from the empirical exterior = ontology as a science that pronounces being-qua-being. We must emphasize that *the mathematical approach to being* is something that is internal

²³ Cf. Badiou, *The Concept of Model*, p. 42.

²⁴ Cf. *ibid*, p. 43.

to mathematical production itself. There is no transcendence in mathematics that originates from the primary differentiation between “the internal” and “the external”, and between the knowing subject and the known object. In contrast, any idea that considers the subject in relation to an external object is empiricist.²⁵ This entails the “co-belonging of the known and the knowing mind” in “ontological commensurability,”²⁶ which means that thinking and being are the same. Mathematics thinks being through its own internal and homogenous axiomatic presentation of set theory, which corresponds to Badiou’s assertion that the axiomatic set is an immanent form of being-qua-being.

Nevertheless, there is a challenge to the principle of homogeneity that comes from Badiou’s philosophy itself, namely its doctrine of truth procedures as productions of the new and universal, which impose a moment of discontinuity into the continuity of a world. Given that truth procedures are based on events, which appear as eruptions of something heterogenous that cannot be situated in the order of being, Badiou asks: “Does this being of the event require a theory of the multiple, which is heterogeneous to the theory explaining Being, that is, Being *qua* Being?”²⁷ According to Badiou, Deleuze’s concept of event offers a positive answer to this question: “Thinking the event fold originally demands a double-edged manifold theory, one that pursues Bergson’s legacy.”²⁸ But, contrary to Deleuze, Badiou insists on maintaining the principle of homogeneity: “As for myself, I contend the contrary, namely, that multiplicity is axiomatically homogenous. That’s when I have to explain the being of the event both as a breach of the law according to which manifolds spread out as well as something homogenous to this law.”²⁹

Badiou resolves this ambivalence in an elegant way. He removes one of the axioms of the ZF set theory – the axiom of foundation. This axiom forbids self-belonging, which is a feature Badiou uses to describe eventual usurpation. If we remove the axiom of foundation, we can think of an event as an ontological anomaly, an instance of a set belonging to itself; this kind of presentation is not

²⁵ Cf. Alain Badiou, *Briefings on Existence: A Short Treatise on Transitory Ontology*, trans. N. Madarasz, Albany, State University of New York Press, 2006, p. 90.

²⁶ *Ibid.*

²⁷ *Ibid.*, pp. 60–61.

²⁸ *Ibid.*, p. 61.

²⁹ *Ibid.*

durable and disappears within a moment. By temporarily removing the axiom of foundation, Badiou preserves the homogeneity of being, which means that “an event is nothing but a set, a manifold,”³⁰ which is ontologically “an un-founded manifold”³¹ and not an ontologically *heterogeneous* manifold.

Up to this point, we have demonstrated Badiou’s line of thought regarding the homogenous and autonomous processes of production in the political, aesthetic, and scientific (mathematical) areas. These are the areas in which truths can arise. Truth procedures as homogenous, autonomous, rational-materialist productions could also be characterized as specific truth formalizations. Truth procedures are formalizations, because they produce new and universal forms, which cause real effects in the world. Form is not an abstraction of its material, but its realization. The concept of formalization has a direct connection with the concept of form because inventing a new formalization entails inventing a new form: “I believe that if all creative thought is in reality the invention of a new mode of formalization, then that thought is the invention of a form.”³² That creative thought is expressed through the creation of a form can be confirmed with Badiou’s statement from *The Century*: “Form is therefore an Idea as given in its material index, a singularity that can only be activated in the real grip of an act. Form is the *eidōs* – this time in a Platonic sense – of an artistic act; it must be understood *from the side of formalization*.”³³

For Badiou, form is *ἰδέα* or *eidōs* in a strong platonic meaning, which is apparent in his text “Art and Mathematics”. In this text, Badiou states: “Plato exalts mathematics from a point of view that relates it to being in itself, the form of which is what he calls the Idea. [...] Plato is the first formalist, in the very precise sense of a theory of forms.”³⁴ In the same text, Badiou introduces four tendencies of understanding mathematical and artistic forms in the history of philosophy, namely Platonic, Nietzschean, Aristotelian, and Wittgensteinian, and gives priority to a Platonic orientation. According to a Platonic orientation, mathe-

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³⁰ *Ibid.*

³¹ *Ibid.*

³² Badiou, Fraser, and Tho, “The Concept of Model, Forty Years Later: An Interview with Alain Badiou”, p. 102.

³³ Alain Badiou, *The Century*, trans. A. Toscano, Cambridge, Polity, 2007, pp. 159–160.

³⁴ Alain Badiou, “Art and Mathematics”, trans. S. Corcoran, in F. Ruda, J. Völker (eds.), *Art and Contemporaneity*, Zürich-Berlin, Diaphanes, 2015, p. 163.

mathematical formalization is paradigmatic, because it offers a starting point for the definition of form as such, as Badiou explicitly confirms in the mentioned interview with Fraser and Tho:

Thus if every creative thought is the invention of a new form, then it will also bring new possibilities of asking, in the end, “what is a form?” If this is true, then one should investigate the resources for this. As a resource, there is nothing deeper than that which the particularity of mathematics has to offer. This is what I think, I held this point of view and I hold it now. It is not that mathematics is the most important, not at all. Mathematics is very particular but in this, philosophically speaking, there is something that is specifically tied to mathematics in the very place of thought. Like Plato, who first thought this, thinking is the thinking of forms, something that he called ideas but they are also the forms. It is the same word, ἰδέα. [...] Mathematics holds something of the secret of thinking. It is that mathematics, while not the most important, is something which makes more transparent, or takes us closer to, this secret of thinking.³⁵

In this article we cannot address the connection between onto-logical (ontological-phenomenological) and generic forms of truth in any detail, because this is a subject that would demand its own space for thorough analysis. We can only suggest that the source of the generic and creative power of truth is produced in an intimate connection between the truth form and the ontological form of being, which is a “form-multiple.”³⁶ According to Badiou, truths are generic multiples, a typical form of multiples that generates the form-multiple as such, (the form of multiple *qua* multiple). The generic multiple is a typical multiple because there is no other predicate that could be applied to it except that it is a multiple: “While every truth procedure consists in infinitely deploying a purely generic multiplicity that necessarily collapses differences, this does not entail a destruction or annihilation of differences precisely because these fictitious beings, these opinions, customs, differences, are that to which universality is addressed.”³⁷ The ontologically homogenous form-multiple hence does not relativize the truth. Each truth procedure has a specific relation to “[t]he

³⁵ Badiou, Fraser, and Tho, “The Concept of Model, Forty Years Later: An Interview with Alain Badiou”, p. 102.

³⁶ Alain Badiou, *Being and Event*, trans. O. Feltham, London, Bloomsbury, 2013, p. 70.

³⁷ Jelica Šumič Riha, “Towards a Materialism of the Real: The One of the Same”, *Filozofski vestnik*, 38 (2/2017), p. 77.

power of the multiple and its empty ‘heart’.”³⁸ Each truth procedure can recall this “empty heart” of the pure multiple: art “through the *creation of sensory forms*,” politics “through the *axiomatization (or organization) of the resources of the collective*,” love through “*the systematic play, carried to infinity, of pure difference*.”³⁹

This shows the specific rational-materialist motive in Badiou’s definition of truth as a generic form of multiple. Truth procedures are not dependent on anything external because they receive their resources from their own generic form-multiple, which is a truth form of the being of a given multiple. “A truth contains the following paradox: it is at once something new, hence something rare and exceptional, yet, *touching the very being of that of which it is a truth, it is also the most stable, the closest, ontologically speaking, to the initial state of things*.”⁴⁰ When a truth appears within a given situation, it reaches for something that the situation does not recognize and acknowledge as its own. The resources of a truth are not simply the already existing resources of a given situation. If they were, then the truth would simply refer to something that is already there and would therefore be reduced to knowledge. It would therefore merely regulate and classify existence without producing anything new. When a given situation accepts something as its own, it identifies, defines, determines, and represents it. The truth of the situation proceeds the other way around and recognizes elements that the situation does not represent. But what the situation will never recognize as its own is its inconsistency, which is its own being. The truth, on the other hand, relies precisely on the being of the situation. Based on inconsistency as the being of the situation, the truth procedure creates a new consistency, an extension of the situation, and thus establishes a new formalization of the existing.

40 All four truth procedures are post-evental formalizations or form-realizations of being. Mathematical post-evental formalization formalizes being as a pure multiple without-One (inconsistency); logical-mathematical post-evental formalization formalizes being as being-there, as a multiple in a world, i.e. in a

³⁸ Alain Badiou, “Some Replies to a Demanding Friend”, trans. A. Toscano, in P. Hallward (ed.), *Think Again. Alain Badiou and the Future of Philosophy*, London, Continuum, 2004, p. 234.

³⁹ *Ibid.*

⁴⁰ Alain Badiou, *Manifesto for Philosophy*, trans. N. Madarasz, Albany, State University of New York Press, 1999, p. 36, italics added.

system of relations between multiples (consistency); political post-evental formalization formalizes being through a new form of the organization and axiomatization of the “resources of the collective” (it enforces a new consistency in the political world); artistic post-evental formalization formalizes being through the creation of sensory forms and thus enforces a new consistency in the art world; the post-evental formalization of love formalizes being and reaches infinity through the pure difference of the Two.

The dialectic of formalization

Each new formalization brings about an interruption of the *status quo* and introduces discontinuity into the existing logic of the world, which is a thought Badiou has insisted on since his early works. As a student of Althusser, Badiou primarily started from the assumption that subjectivity and truth are essentially ideological constructs, which have no place in mathematical and scientific procedures. In the 1960s, Badiou understood scientific and mathematical formalizations as automated processes (without the subject) that make cuts into ideological representation. The anti-ideological function of rational and autonomous formalizations will be preserved in his later concept of generic truth procedures. It is interesting, however, that the young Badiou sees dialectic as the operator of a cutting into the given. In *Theory of the Subject*, he offers a materialist understanding of Hegel’s dialectic not as a synthesis or alienation, but as “[a] dialectical matrix whose operator is scission, and whose theme is that there is no unity that is not split.”⁴¹ We can find a similar thought in his text from the 1980s *Can Politics Be Thought?*, in which Badiou assigns an anti-representational role to dialectic: “First of all, we will recognize dialectical thinking by its conflict with representation. Such thinking tracks down the unrepresentable point in its field, which avers that we are touching upon the real.”⁴² This means that dialectic and formalization are both capable of the same function of cutting into the ideological categories of representation. From the perspective of their anti-representational function, dialectic and formalization are finally on the same side.

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⁴¹ Alain Badiou, *Theory of the Subject*, trans. B. Bosteels, London, Continuum, 2009, p. 4.

⁴² Alain Badiou, *Can Politics Be Thought?*, trans. B. Bosteels, Durham and London, Duke University Press, 2018, p. 85.

The problem of the relation between the methods of formalization and dialectic in Badiou's philosophy is therefore not that they are so different from each other that they end up at opposite poles. On the contrary, a mutual exclusion happens because they are so close to one another. But if they have the same function, the function of the cut, is there even a need for both of them? Why this redoubling? The answer can be found by considering another property of dialectic.

While dialectic can be seen as serving sociologically-historicist ideological doctrines, mathematical formalization is a violent act of an uninterrupted interruption of the *doxa*. Formalization is therefore much more violent than dialectic. Badiou claims in *Conditions* that, despite its great value, the mathematic rupture with the *doxa* can appear forced and obscure. That kind of constrained obscurity "cannot be appropriated or elucidated from within mathematics itself."⁴³ For that reason, Socrates says in Badiou's translation of Plato's *Republic*: "however great they may be, mathematicians and scientists are not yet true dialecticians."⁴⁴ Mathematical formalization is a cutting machine, which never stops interrupting. But at the same time, due to its interrupting nature, formalization is a mode of creation that does not really create anything that would last.

The idea of continuation and duration is exactly what is crucial for Badiou: "Personally, I have always been interested in issues of duration and process, and not only starting-points."⁴⁵ Despite dialectic being the carrier of the cut, there is also something visionary and creative about dialectic, something that enables it to develop a "programme." Dialectic is a different kind of interruption, one that "*traverses* the ineluctable opacity" of mathematics.⁴⁶ This means that "every elucidation of a discontinuity serves to establish the idea of a continuity."⁴⁷ Contrary to the aggressive machine of formalization, dialectic can perform as the idea of a new continuity, duration, and vision. It is dialectic that must introduce duration into the minimal difference between the creative and the destructive force of formalization. We could say that dialectic "(dis)contin-

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⁴³ Badiou, *Conditions*, p. 103.

⁴⁴ Alain Badiou, *Plato's Republic: A Dialogue in Sixteen Chapters, with a Prologue and an Epilogue*, trans. S. Spitzer, Cambridge, Polity Press, 2012, p. 235.

⁴⁵ Alain Badiou and Nicholas Truong, *In Praise of Love*, trans. P. Bush, London, Serpent's Tail, 2012, p. 29.

⁴⁶ Badiou, *Conditions*, p. 103.

⁴⁷ *Ibid.*, p. 104.

ues the discontinuity”.⁴⁸ Therefore, we have to think dialectic in Plato’s sense *as a project and an idea* that introduces a longer span of duration into the instantaneousness of interruption.

The latter is evident in Badiou’s analysis of the 20th century. Badiou shows that there is something symptomatic in the relation between dialectic and formalization, because the vanishing of dialectical categories in the 20th century was replaced by a proliferation of the categories of formalization. The 20th century was pervaded by the passion to realize the dialectical project of the 19th century under the imperative of the “here and now”, but did so at the expense of any vision of a lasting project. An exemplary case of this violence is avant-garde art, an art form that is obsessed with new beginnings, the constant creation of new forms, and impatience that leads to the manic production of the new.⁴⁹ What is missing in such experimental formalizations is the sole power of duration or persistence in the consequences of the new.

To counter the violent power of formalization, Badiou proposes a special version of dialectical subtraction or minimal difference. The idea of subtraction, Badiou claims,

is not just an idea that comes ‘after’ antagonism and revolution. It is an idea that is *dialectically articulated with those of antagonism, the simplifying formalization, the absolute advent of the new*, etc. [...] There is something like an ideological decision involved here, one that gives priority to subtraction (or minimal difference) rather than to destruction (or antagonistic contradiction).⁵⁰

If dialectic therefore appears in the guise of subtraction, it can reverse the violent effects of impatient formalization and thus enable the creative process of the production of a new form.

Even though we have not yet reached the bottom of the complex relation between dialectic and formalization, we have reached a point where we can place

⁴⁸ I would like to thank Rok Benčin for this thought.

⁴⁹ Cf. Jan Voelker, “Obrniti in afirmirati avantgarde: nova paradigma politike”, trans. R. Benčin, *Filozofski vestnik*, 34 (3/2013), p. 166.

⁵⁰ Badiou, Hallward, and Bosteels, “Beyond Formalization: An Interview”, p. 326, italics added.

both concepts on the same page, which means that from here on we can think of them together under the banner of the *dialectic of formalization*. Simply put, the dialectic of formalization is a *procedure of the realization of any truth procedure in the world*. Each creative thought is the invention of a new formalization. Each new formalization begins with an event and is a singular establishment of its own form. The process itself is rational-materialist because the form is produced by the realization of a homogenous and autonomous truth procedure. The material or “content” of the truth production comes from within its own process, which makes truth an “inner thought”, as Lazarus calls it. Truth is, therefore, never a discovery of the hidden, analysis of the existing complicated and multi-layered reality, a revelation of the enigmatic: “the not-all multiplicity is not discovered, rather it is produced.”⁵¹ This is because, for Badiou, the truth is a rational-materialist concept, which (similar to Macherey’s concept of rational knowledge) does not have anything to do with the empirical logic of “discovery”, where something has to already exist in order for us to gain knowledge of it. The rational-materialist logic of invention, on the contrary, stems from the “non-existing”. True invention, therefore, occurs when something is found that has not previously existed, something that comes into existence during the truth production of form-realization itself. It is about the production of form that has not existed before and is only being produced and realized through the process of the production of truth. The truth forms the non-existent in the existent and thus brings something new to the world.

In the rational-materialist procedure of form-realization there is already an imprinted mechanism of transformation. Truths transform worlds already by producing their own true and universal forms that had not existed before. The dialectic of formalization highlights the thought that every creation entails a project of a certain duration in which a new consistency and a new continuity are established. The procedure of inventing a new formalization “enforces” a previously “missing” or non-existent possibility on the world. At the same time, this creative process proceeds dialectically as a visionary project and as the *affirmation of affirmation*.

To conclude: the idea of the dialectic of formalization not only leads to a better understanding of Badiou’s concept of truth as a dialectical production, and

⁵¹ Šumič Riha, “Towards a Materialism of the Real: The One of the Same”, p. 77.

consequently to a dialectical form-realization of a new form in the world, which transforms and brings radical changes to the given. It also prompts us to think Badiou's entire philosophical opus from the perspective of continuity and synthesis. As Badiou himself elucidates:

It is necessary always to begin with continuity because it is more important. The author of a work always likes to say that they have constantly evolved but I would like to pose the idea of Bergson that a philosopher only has one idea. If we suppose only one idea, it is this idea. I believe that if all creative thought is in reality the invention of a new mode of formalization, then that thought is the invention of a form. Thus, if every creative thought is the invention of a new form, then it will also bring new possibilities of asking, in the end, "what is a form?" If this is true, then one should investigate the resources for this.⁵²

We took these words as the guiding principle for this article. The idea of formalization and the question of form invite reflection on creative thought as the invention of a new form. For the mature Badiou, creative thought is autonomous thought. This should be understood in terms of the rational-materialist matrix, according to which the object of production coincides with the protocol of homogenous production. As we have shown, the beginnings of this thought are present in the original understanding of autonomous, homogenous production that the young Badiou analysed in the 1960s with regard to the aesthetic and the scientific modes of production. We can conclude that this is the same thought that can be found in Badiou's concept of truth procedures.

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⁵² Badiou, Fraser, and Tho, "The Concept of Model, Forty Years Later: An Interview with Alain Badiou", p. 102.

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