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"One or Many Ontologies? Badiou's Arguments for His Thesis 'Mathematics is Ontology'."

This is not a story of *hubris*, of a philosopher seeking to make his name by announcing a provocative thesis "mathematics is ontology" and then, decades later, fighting to prevent his name from being unmade by commentators who cannot quite bring themselves to accept that identity as definitive. This is an enquiry into an argumentative strategy which leads to a crucial question: which initial decisions on ontology lead to there being one or many ontologies?

Part of the appeal and strength of Badiou's philosophy lies in complex way he sets up the tasks of a set-theory based ontology in *Being and Event*, and then of a category-theory based phenomenology in *Logics of Worlds*. It is the number of argumentative steps and choices made in these preambles – many of which are reinforced in the recently published seminars – that turn Badiou's philosophy into fertile ground not just for contesting interpretations but for the genesis of other philosophies. Indeed, it is the case that Badiou's philosophy not only spawns orthodoxies and imitations, like those of Derrida and Deleuze, but also heterodoxies and rival philosophies. But the challenge for any departure from a putative Badiousian orthodoxy is to retain both the audacity and systematicity of Badiou's work. Can we, in turn, take steps in a new conceptual construction, and then trace the consequences of each of these steps, in a manner constrained by a previously-existing and consistent discourse, such as ZFC set-theory? Such a task goes beyond the question of making or unmaking, repeating or forgetting, proper names.

In this preliminary enquiry, let us explore Badiou's initial decisions on ontology.

The argument that mathematics is ontology

In the first meditation of *Being and Event*, Badiou sets out its inaugural thesis: "Mathematics is ontology – the science of being qua being".[1] One page later he

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clarifies, "Mathematics writes that which of being itself, is pronounceable in the field of a pure Theory of the multiple".[2] In Meditation One he sets out requirements for ontology and then in Meditation Three he proceeds to identify a particular kind of mathematics that satisfies those requirements.[3] But this is too simple: there is a puzzle here: what comes first – the argument that determines the requirements for ontology, or the identification of set theory as ontology? One cannot argue that a particular discourse is uniquely suitable for the task of ontology without pronouncing as to the nature of being and thus engaging, at least in a preliminary manner, in ontology yourself. Is there not a problem of circularity here?

On the one hand, there are these strong readings of canonical texts in the history of metaphysics that are supposed to set up the choice of set theory as ontol-

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[2]   *Ibid.*, p. 5.

[3]   *Ibid.*, p. 29. In a broad outline this passage appears deceptively simple; however, there are several difficulties that confront the interpreter who pays attention to the details. For instance, there has been much debate over the concepts of inconsistent multiplicity and consistent multiplicity: do they form Badiou's version of Heidegger's ontological difference (Hallward, Nancy, Pluth, Feltham vs Brassier); does Badiou have or even need an adequate account of the consistent multiplicity of 'non-ontological situations' (Feltham, Besana, Hallward); what does it mean to claim that the count-as-one has no agent (Desanti, Feltham and Clemens)? What is the status of the claim that there must be a redoubled count-as-one establishing the state of a situation, because being is not presented as chaos, or what is the status of the claim that this second count-as-one has to include the name of the void, which errs in presentation, for otherwise there would be chaos? There are various ways of resolving these difficulties, but in order to develop a coherent interpretation of the argument 'mathematics is ontology' it seems to me there is a more general puzzle that takes priority, and that is the puzzle of what comes first, the determination of the criteria for ontology or the identification of mathematics and, in particular, ZFC set theory as ontology. See Ray Brassier, "L'Anti-phènomene – présentation et disparaître", in *Ecrits autour de la pensée d'Alain Badiou*, ed. B. Besana and O. Feltham, Harmattan, Paris 2007, pp. 55–64 ; Bruno Besana, "Quel multiple ?" and "Replique ; l'événement de l'être", *Ibid.*, pp. 23–40, pp. 125–30 ; J-T. Desanti, "Some Remarks on the Intrinsic Ontology of Alain Badiou" in *Think Again: Alain Badiou and the Future of Philosophy*, ed. P. Hallward, Continuum, London 2004, pp. 59–66; O. Feltham & J. Clemens, "An Introduction to Alain Badiou's philosophy", in A. Badiou, *Infinite Thought: Truth and the Return of Philosophy*, ed. and trans. O. Feltham & J. Clemens, Continuum, London 2003, pp. 1–38; Peter Hallward, *Badiou: a Subject to Truth*, University of Minnesota Press, Minneapolis 2003; Jean-Luc Nancy, "Philosophy without conditions", in *Think Again: Alain Badiou and the Future of Philosophy*, ed. P. Hallward, pp. 39–49; Ed Pluth, *Badiou: a Philosophy of the New*, Polity Press, London 2010.

ogy, yet at the same time the strong theses and leaps in these readings seem to be either anchored or driven by the prior choice of set theory as ontology. Sam Gillespie wrote "Given that being qua being is given to us exclusively through ontology, it follows that it is very difficult to summon a mathematical ontology to a tribunal of ontology which would tell us whether or not it is a legitimate ontology. Ontology is in no way a set of descriptions of being that preexists its own operations".[4]

There are two solutions to this general puzzle. They break the circularity by positing a basic order.

— One can argue that it is the philosophical arguments that come first, namely a kind of history of being to rival that of Heidegger, and the election of set-theory comes second. Let's call this the 'philosophy solution', or rather, the 'argument from philosophy'.
— Or one can argue that what comes first is the naming of Cantorian set-theory as a truth-procedure within the field of science, which subsequently conditions philosophy and generates this sub-discipline of 'metaontology'. Let's call this the 'argument from the condition'.

The challenge for these two solutions, the criteria for us choosing one over the other, will be whether it succeeds in chasing down and eliminating the occasional appearance of arbitrariness in the argument that explains why mathematics is ontology.[5]

Let's first examine the 'argument from philosophy'.

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[4]   Sam Gillespie, "L'être multiple présenté, représenté, rendu vrai", in *Ecrits autour de la pensée d'Alain Badiou*, ed. B. Besana & O. Feltham, p. 73.
[5]   Or do we accept that philosophy is a not an enterprise uniquely motivated by conceptual construction and argumentation; rather, Alain Badiou was seeking to give his own name to being qua being via the law of the father as Quentin Meillassoux provocatively suggests in his essay "Décision et indécidabilité de l'événement" in *Autour de* Logiques des Mondes, ed. O. Feltham, D. Rabouin and L. Lincoln (eds.), Editions des Archives Contemporains, Paris 2011, pp. 135–6.

The argument from philosophy

The initial philosophical argument in *Being and Event* results in the following requirement: being must be thought as inconsistent multiplicity. This claim is set up in four steps:

1) The One is not: The starting point, anchored in the history of philosophy, is the thesis that the One is not, explored by Plato in the last four hypotheses of the *Parmenides*.
2) There is inconsistent multiplicity: Parmenides' exploration of the hypothesis "If the One is not, nothing is" leads to the concept of *plethora*, of a multiple that disseminates itself internally without limit and thus without ever encountering some ultimate elements or atoms: this is what Badiou calls 'inconsistent multiplicity'.
3) There is a count-for-one: Nevertheless, Badiou argues, there is some One-ness, an effect of unity and so there must be an operation of unification that distributes inconsistent multiplicity (before) and consistent multiplicity (after its effect). A consistent multiplicity is unified.
4) The nothing is: within consistent multiplicity, inconsistent multiplicity is nothing and as such it subsists in structured presentations as the void. What is 'void' within a structured presentation is both the operation of its count-for-one and the material from which all structure is composed (inconsistent multiplicity).

Badiou then adds a further, separate, requirement for ontology: ontology must be compatible with contemporary praxes of the subject.

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The strategy of this argument is to claim that a philosophical confrontation with the impasses of the history of ontology entails these four theses on the one and multiplicity. It is these claims which set up the requirements for ontology. After an examination of various kinds of discourse, it turns out that the only discourse capable of exploring and unfolding the implications of these theses is a particular kind of set theory. We find this 'argument from philosophy' in Meditations 1, 2 and 6 of *Being and Event*, developing readings of Heidegger, Plato and Aristotle, and we find it massively in the Seminar from 1983 to 1986. There are two versions of this argument, which we shall call the *via negativa*, and the historial.

On the one hand, Badiou will engage in a negative demonstration – the *via negativa* – arguing that ontologies committed to the being of the One end in ruins. For instance, in the *Short Treatise of Transitory Ontology*, he rapidly pulls apart Aristotle's necessary supposition of a global unity, a prime-mover in order to resolve difficulties in the theory of substance as an impossible union of matter and form.[6] In *Being and Event* he claims that ontology repeatedly falls into an abyss or a labyrinth when it tries to resolve the relationship between the discrete and the continuum, and also when it tries to resolve the relationships between the one and the multiple, or parts and the whole.[7] This negative demonstration is a little like Kant's proof of the systematicity of transcendental philosophy through its resolution of the antinomies of pure reason, antinomies that ruin all other philosophies. The simplest form for this demonstration would be an argument from the absurd where an initial premise ineluctably leads to a contradiction and hence one is obliged to jettison the initial premise (namely the being of the One).

The problem, of course, is that despite the variety and breadth of Badiou's examples of paradox and contradiction in the history of ontology, strictly speaking the demonstration can never be exhaustive because the history of philosophy is still open. Someone – perhaps they are reading this article right now! – might well come along and write a coherent ontology on the basis of the premise that being is One. It is difficult to demonstrate impossibility outside the confines of a simple formal system, in which one options for argument are exhaustible.

Hence Badiou's frequent recourse to another version of the argument from philosophy, the *historial*. For instance, he claims that the being of the One is the fundamental commitment of all onto-theology, adopting Heidegger's term for his purposes. However, the orientation of thinking that Badiou is carving out holds itself contemporary to – or tributary of – Nietzsche's declaration that 'God is dead', a declaration that mortifies all Gods, those of metaphysics, religion and poetry alike.[8] There is no going back on Nietzsche's epochal declaration. Hence the entire project of onto-theology is closed, and ontology must begin on anoth-

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6   Alain Badiou, *Court traité d'ontologie transitoire*, Editions du Seuil, Paris 1998, p. 15 ; Alain Badiou, *Briefings on Existence: A Short Treatise on Transitory Ontology*, trans. N. Madarasz, State University of New York Press, Albany 2006.

7   Badiou, *Being and Event*, pp. 5, 81, 281.

8   See the "Prologue: God is Dead" in Alain Badiou, *Briefings on Existence*, pp. 21–32. See also Quentin Mellassoux's excellent pun, mentioned above, on the proper name 'A bas l'Un-

er basis than the being of the One. Again in the Seminar, and in other texts, one finds such claims: the thesis "every situation is infinite" is pinned to a reading of Pascal, but it is also situated as a defining thesis of modernity, a thesis that opens up modernity, a historical decision. Badiou often adopts this *historial* version of the argument from philosophy when he is interpreting and critiquing Heidegger's history of being: it is as though he is setting up, by means of his own interpretations of canonical philosophical texts, a rival history of being.

Here you can see the historial strategy runs into another problem, one of circularity. If being has its own history – which produces these theses 'the One is not', 'every situation is infinite' – then what is the original language or discourse in which that history is disclosed? We haven't yet arrived at set-theory, we are still identifying the preliminary theses which will subsequently justify the election of set theory as ontology.

So both the *via negativa* and the historial versions of the argument from philosophy run into problems. I contend that it is these problems that generate the occasional appearance of a prevalence of *choice* or of *decision* in Badiou's construction of his interpretations of philosophy. This is not a matter of failing to convince specialists of the cogency of Badiou's interpretation – specialists are never convinced, even by each other – but of the overly apparent tactical choices in his readings.

Badiou, of course, is well aware of the problem of circularity in the justification of an inaugural decision as to the nature of ontology and philosophy. It forms one of the central topics of his analysis of the poem of Parmenides in the eponymous seminar of 1985-86.[9] In the seminar he appears to borrow an idea from Guy Lardreau concerning the foundation of philosophy, which is to argue that the inaugural decision as to the nature of philosophy is actually taken from the

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Dieu' in "Décision et indécidabilité de l'événement", in *Autour de* Logiques des Mondes, p. 136.

[9] Badiou writes, "If philosophy decided itself from this point and this point alone – thinking at the same time the way of being and the way of nothingness, and instituting a regime of decision –, and if this point was the absolute origin of the existence of philosophy's discursive apparatus, then one must declare, as I do, that philosophy had been decided well before." See Alain Badiou, *Le séminaire: Parménide, L'être I – Figure ontologique*, Fayard, Paris 2014, p. 54.

standpoint of another discourse.[10] Badiou then claims that 'philosophy is under a supplementary condition', and insists on the *heterogeneity* of this condition and its *encounter* with philosophy as productive of decisions. This recalls the supplementary fifth thesis stipulating the requirements for ontology that we mentioned above and then left aside: that ontology must be compatible with contemporary praxes of the subject. Let's retain these two terms 'heterogeneity' and 'encounter' – they will guide our conclusion. In his seminar *Parmenides* Badiou thus adopts the argument from the priority of the condition as the solution to the problem of circularity, the problem that affects inaugural decisions that open up a philosophy such as the thesis "mathematics is ontology". Let's turn to this argument from the priority of conditions.

Argument from the priority of conditions

The argument from the priority of conditions for the thesis 'mathematics is ontology' runs as follows. Philosophy only occurs historically in the form of a 'com-possibilization', that is to say, a naming and theorizing of truth-procedures occurring in four different conditions of art, science, politics and love. A philosophy develops a coherent system of reference by constructing its own names for these generic truth procedures, procedures that trace out the consequences of anomalous events occurring in each of these extra-philosophical fields. For instance, *Being and Event* is an attempt to philosophically name what occurs in the condition of science as a truth procedure faithful to the "Cantor-event", but it also names what occurs in poetry in Mallarmé's fidelity to the 'crisis in verse', there are brief references to Engels and Mao in the political thinking of the state, and there is an engagement with psychoanalysis as intervention in the condition of love via the exegesis of Lacan's concept of the subject.

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As such, it is the philosopher's initial fidelity to the Cantor-event that decides that Zermelo-Fraenkel set theory with the Axiom of Choice will determine the nature of ontology, and hence ground these philosophical theses such as "there is no being of the One". First comes fidelity to the condition, then philosophy. Set theory itself is ontology, and its philosophical naming and theorization is called "metaontology". Alberto Toscano and Ray Brassier explored this strategy in a 2004 article where they claimed that "mathematics is ontology" was

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[10]   *Ibid.*, p. 62.

Badiou's own intervention, his own fidelity to the Cantor-event.[11] It is Badiou's fidelity to Cantorian set-theory that determined his understanding of ontology, and his subsequent disqualification of various philosophical ontologies.

At this point another suspicion of insufficient justification emerges. In the development of the argument of *Being and Event* it turns out that it is not so much mathematics in general but specifically ZFC set theory that is ontology. Commentators have asked why one would choose this particular variant of set theory (although Badiou does give a number of cogent reasons during the construction of *Being and Event*). Others have asked why choose set theory as a metonymy for mathematics and not another sub-discipline of maths, given that the entirety of mathematics is ontology.

This second appearance of insufficient justification is addressed in section four of this article. For the moment let's note the advantage or virtue of the argument from conditions: it leads to a philosophical exploration of the singularity of set-theory, which allows the identification of three peculiar characteristics that are grasped as demonstrating its vocation for ontology.

The first characteristic of Zermelo-Fraenkel set theory is that it has no defined object. There is no explicit definition of a set. As such the theory has no stipulated object. Rather the theory employs one primitive relationship between multiples; that of belonging, and this relationship may be used in the ways specified by the axioms. Various kinds of set then emerge from that manipulation. The most striking demonstration of this emergence without definition occurs in the explanation of the axiom of the union set.[12] This axiom states that for every set there exists the set of the elements of the elements of that set. This immediately cancels out any substantial distinction between 'sets' and 'elements', which are clumsy terms from natural language. Indeed there is only one kind of variable in this form of set theory. Every element of a set is itself a set composed of elements which are themselves sets and so on. Set theory can thus consistently write the decomposition of multiples as more multiples at other levels. Through the axiom of the power-set, it can also write the composition, the putting together of

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11   Ray Brassier and Alberto Toscano, "Postface: Aleatory Rationalism", in Alain Badiou, *Theoretical Writings*, Continuum, London 2005, p. 255.
12   Badiou, *Being and Event*, pp. 63–64.

larger multiples through the assemblage of all of the sub-groups of elements of an initial set. So on the basis of an initial multiplicity one can generate other multiplicities through analysis or synthesis, below it and above it so to speak. The series of sets generated continues to such a point that Badiou states with glee: set theory's "proliferation of infinities" achieves "the complete ruin of any being of the One".[13]

It is not a foundational definition but the axioms that structure and render consistent the situation that is ZFC set theory. This is an exemplary case for pragmatism: *use defines being*; that is to say, what counts as being, as multiples of multiples, is only ever whatever is encountered through the facility of writing and manipulating sets and whatever might block that facility, such as Russell's paradox. As such, there is no unifying or totalizing speculative gaze at being; it is neither seen nor grasped but encountered bit by bit in the scriptural construction of different kinds of sets, in a kind of constrained unfolding of multiples of multiples.[14] Hence being-qua-being is not an external object, but insists in a writing.

The second peculiar characteristic of set-theory that Badiou seizes upon is that, in Lacanian terminology, it encounters the 'real' in its symptoms. In non-Lacanian terms, set theory has discovered a number of paradoxes and problems that stymied its efforts at formalization. It is Cantor, for instance, and not Badiou who originally develops the concept of an "inconsistent multiplicity", precisely in reaction to the discovery of sets that could not be totalized without contradiction (the set of all sets that do not belong to themselves). Amongst these paradoxes and problems Badiou briefly mentions the controversy around the Axiom of Choice, he devotes several pages to Russell's paradox, but the entire last third of the book is devoted to the problem of the continuum and its implications. In the Introduction he announces, "What seemed to me to constitute the essence of the famous "problem of the continuum" was that in it one touched upon an obstacle intrinsic to mathematical thought, in which the very impossibility which founds its domain is said".[15] Indeed, in Meditation 27 he declares that the

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[13] Badiou, *Being and Event*, p. 273.

[14] See my claim in "Translator's Preface", in *Ibid.*, p. xxiv.

[15] *Ibid.*, p. 5.

measure of the excess of the cardinality of an infinite set's powerset over the cardinality of that infinite set, constitutes the "impasse of being".[16]

The third peculiar characteristic of set theory as a kind of discourse is that it historically took decisions on these symptoms. That is to say, mathematicians found resolutions to these paradoxes which in turn opened up new and further domains of formalization. For instance, Zermelo's Axiom of Separation allowed his version of set theory to avoid Russell's Paradox (Med.3).[17] In Badiou's exegesis, set theory encountered the ontological paradox of the relationship between the continuum and the discrete in its discovery of the undecidability of the excess of the cardinality of a powerset over the cardinality of its original set if the latter is infinite. However, in Paul Cohen's invention of the procedure of forcing a way is found in each individual procedure to decide on that undecidable excess. Badiou calls these resolutions of paradoxes or circumventions of impasses in formalisation "decisions on being". He claims that in a belated echo of Parmenides they show how "the same, is, both thinking and being".[18]

At this point of our exploration we can detect two metaontological consequences of these 'decisions on being' carried out by set theory. The first concerns the ontological or set-theoretical inscription of the 'generic' multiplicity of truth procedures, and the second the possibility of an alternative 'history of being'.

The first consequence of these 'decisions on being' concerns their multiple occurrence within praxes that follow events, that is to say, within what Badiou calls 'generic truth procedures'. For instance, when it comes to the set-theoretical continuum problem, or, in his metaontological terminology, the 'impasse of being', he claims that there are four types of decision on that impasse which constitute the four grand orientations of thought: the transcendental, the grammarian-constructivist, the indiscernible-generic, and the praxical.

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[16] *Ibid.*, p. 281.

[17] Note that Badiou has been fascinated with these decisions at the points of impossibility within formal systems since his early essay "Subversion Infinitésimale", in *Concept and Form, volume I: Key Texts from the 'Cahiers pour l'Analyse'*, ed. Peter Hallward and Knox Peden, Verso, London 2012.

[18] Badiou, *Briefings on Existence*, p. 52.

He then goes on to claim that Cohen's solution to the continuum problem by means of forcing and the generic subset provides an ontological schema for all generic-truth procedures. All generic truth procedures – all praxes that are faithful to an event – thus involve decisions on the impasse of being. So at this point the argument from conditions leads to a multiplication of 'decisions on being' within all those generic truth-procedures that a philosophy might recognize, and compossibilize in its attempt to be contemporary with recent events in its conditions.

Interestingly this consequence does not lead to a *reduction* of the suspicion of insufficient justification that attended the election of ZFC set theory in particular as ontology. Rather it presents an *exacerbation* of that insufficiency through its transformation into the radical contingency of events and truth-procedures. In other words, there is insufficient justification within ZFC set theory itself for the continuum hypothesis or for other hypotheses as to the cardinal quantity of the powerset of an infinite set – this is why Badiou terms them 'decisions on being'. If decisions on being occur within truth-procedures not just in the realm of mathematics but also in politics, art and love, then these moments of 'insufficient justification' multiply in such practices. However, at the same time, the insufficiency at stake in these decisions within these practices can also be understood as a form of radical contingency in line with that of the event.

The second consequence of these set-theoretical 'decisions on being' is that via their metaontological interpretation they intervene in the philosophical or historical problems of ontology. Throughout *Being and Event*, Badiou remarks that there are a series of unresolved problems in the history of ontology concerning the one and the multiple, the part and the whole, the finite and the infinite, and the relationship between the discrete and the continuum. It just so happens that Zermelo-Fraenkel set-theory provides a series of new solutions to these problems. There is thus a new 'history of being' that is generated by Badiou's argument from the condition of set theory to philosophy. Precisely, he explicitly claims 'The history of mathematics [periodized by singular praxes] is the history of being'. It is by means of this alternative mathematical history of being that Badiou will be able to rival Heidegger, and ground his claims with regard to requirements for a contemporary thinking. The argument from conditions thus joins the argument from philosophy in its commitment to a history of being, but this time the history is grounded in an alternative discourse to philosophy.

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Thus in this regard at least, the argument from conditions is superior to the argument from philosophy.

At this point let's return to this suspicion of a lack of justification over ZFC set theory alone being elected the metonymy of mathematics as ontology. It is clear that we cannot hope for any absolutely solid philosophical demonstration of the necessity of ZFC alone as ontology to the exclusion of all other mathematical and non-mathematical candidates for the discourse on being qua being. Such a demonstration is impossible because the equation 'maths is ontology' does not take place within a formal system. I return to Sam Gillespie's statement: "Given that being qua being is given to us exclusively through ontology, it follows that it is very difficult to summon a mathematical ontology to a tribunal of ontology which would tell us whether or not it is a legitimate ontology".[19] It is also evident that Badiou's metaontology is not the only possible philosophical exegesis of what is going on inside ZFC.

What is our conclusion concerning the argument from the priority of set-theory as a condition for philosophy? It grounds Badiou's alternative history of being, which is an advantage; it does not eliminate the appearance of insufficient justification in the initial election of ZFC set theory, which is a disadvantage, and as an ontology compatible with truth procedures, it multiplies 'decisions on being', which is neither an advantage or a disadvantage but opens up an enquiry into conception of action entailed by such decisions.

Let's try one more approach, the pragmatist approach: what difference does the election of set theory as ontology make to Badiou's philosophical project? What does set-theory qua ontology do? In Badiou's terminology this is the question of the status and role of 'metaontology'.

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[19] Gillespie, "L'être multiple présenté, représenté, rendu vrai", in *Ecrits autour de la pensée d'Alain Badiou*, p. 73.

The status of metaontology

The simple answer to this question is that philosophical metaontology sets out the concepts of a philosophical theory of radical transformation.[20] It allows one to state, for instance, that "the form-multiple of being is generally infinite".[21] It makes the distinction between presentation and representation, a situation and its state, it generates the concept of eventual sites and the ensuing distinction between natural and historical situations, it anchors the claims that there is no totality of Nature nor of History, etcetera.

The choice of ZFC set theory as ontology turns out to be extremely rich and productive in terms of the wealth of concepts generated for this theory of change. But this theory immediately encounters another problem, that of schematism. Badiou opens Meditation 12 on 'natural multiples' with the following claim:

> Set theory, considered as an adequate thinking of the pure multiple, or of the presentation of presentation, *formalizes* any situation whatsoever insofar as it reflects the latter's being as such; that is, the multiple of multiples that makes up any presentation. If, within this framework, one wants to formalize a particular situation, then it is best to consider a set such that its characteristics […] are comparable to that of the structured presentation – the situation – in question.[22]

Particular situations are thus 'formalized' by considering a set as the schema of a situation, hence my term 'schematism'. This passage has caused much

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[20] Badiou makes the connection between set-theory ontology and his larger project of developing a theory of radical transformation and hence, in the political sphere, of justice in the following terms in the "Introduction" to *Being and Event*: "It is the act of trusting [mathematicians] forever with the 'care of being' which separates truth from knowledge and opens it to the event. Without any other hope, but it is enough, than that of mathematically inferring justice." (*Ibid*., p. 15) Badiou also writes in the introduction "All [the thesis 'mathematics is ontology'] does is delimit the proper space of philosophy…its function is to introduce specific themes of modern philosophy, particularly – because mathematics is the guardian of being qua being – the problem of what-is-not-being-qua-being." (*Ibid*., p. 15) Note that the category of 'what-is-not-being-qua-being' refers to the event. Badiou also writes with regard to ontology, "the saying of being would hardly make any sense if one did not immediately draw from the affairs of the City and historical events whatever is necessary to provide also for the needs of 'that-which-is-not-being-qua-being'" (*Ibid*., p. 282).

[21] *Ibid*., p. 266.

[22] *Ibid*., p. 130.

consternation amongst commentators. Tzuchien Tho asked Badiou a question about this very passage in the interview after the English translation of *The Concept of Model*.[23] Schematism is already present in many of the metaontological statements in the early meditations, especially the claim that set theory is the presentation of presentation; that is to say, the presentation of the inconsistent multiplicity of all consistent multiplicities in non-ontological situations.[24]

The first problem with metaontology as a schematism – one that Ray Brassier pointed out very early on – is that it turns set-theory into a referential discourse, gives it supposed objects, those objects being the implicit structures of non-ontological situations (and so Badiou would be a kind of structuralist *après la lettre*).[25] One loses the radically immanent and scriptural quality of set-theory ontology that I referred to before.

The second problem with schematism, the one that bothers most of the Anglo-Saxon commentators though, with their heritage of empiricism, is how to actually demonstrate that a particular set schematizes a particular situation. I asked Badiou this question in the 1999 interview transcribed in *Infinite Thought*, and for him it was a non-starter, perhaps, though it is a bit of an excuse, because he is not weighed down by the tradition of empiricism.[26]

One cannot demonstrate that sets provide the schemas of all non-ontological situations without already making some prior decisions as to the adequation of other discourses to those 'given situations', and also having a translation

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[23] See Tzuchien Tho and Alain Badiou "The Concept of Model, Forty Years Later: An Interview with Alain Badiou", in Alain Badiou, *The Concept of Model: an Introduction to the Materialist Epistemology of Mathematics*, ed. and trans. L. Fraser & T. Tho, re.press, Melbourne 2007, pp. 94–5.

[24] The argument for what I call the *schematism* of set-theory ontology is inextricable from Badiou's argument for ontology being that unique situation that presents inconsistent multiplicity. On the last page of Meditation One he states: "To accede axiomatically to the presentation of their presentation, these consistent multiplicities of particular presentations, once purified of all particularity – thus seized before the count-as-one of the situation in which they are presented – must no longer possess any other consistency than that of their pure multiplicity, that is, their mode of inconsistency within situations" (*Ibid.*, p. 30).

[25] See Ray Brassier, "L'Anti-phènomene – présentation et disparaître", in *Ecrits autour de la pensée d'Alain Badiou*, pp. 55–64.

[26] Badiou, *Infinite Thought,* p. 178.

protocol between those discourses and set-theory, and accepting what is lost in those translations (anti-reductionism objections); indeed this entire objection seems to be caught up in the impossibility of reinventing Carnap's project in the *Aufbau*.

I am English, I have to some degree inherited the burden of empiricism, and so I found it difficult to ignore or dismiss this apparent problem of schematism. One solution I found is laid out in another part of Badiou's oeuvre, his first book on mathematics as a condition of philosophy, *The Concept of Model*.

My hypothesis is that metaontology is the discourse that results from the *modelling* of philosophical ontology by the syntax of ZFC set theory. I develop this argument in *Alain Badiou: Live Theory*.[27] Here I will summarize its conclusion. The operation of conditioning of philosophy involves the selection of a theoretical syntax from the language and names of a generic truth procedure – in this case, ZFC set theory. The second step is to select a semantic field – in this case, philosophy, in particular the history of ontology. A model of the theory is said to be produced if its syntax, and the operations that its syntax permits, can be reproduced without contradiction within that semantic field.

Hence, in terms of the production of metaontology, if Badiou can reproduce the syntax and operations of ZFC set theory in the semantics of the history of ontology without encountering contradiction, then he will have produced a model of ZFC set theory.[28]

The argument from the priority of conditions must therefore be understood via the operation of modelling. This hypothesis neatly resolves the problem of schematism. Badiou's metaontology does *not* provide a theoretical schema

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[27]   Oliver Feltham, *Alain Badiou: Live Theory*, Continuum, London 2008.
[28]   I understand Badiou to be using such an argument when he makes a claim like 'the whole of the thinking unfolded in *Being and Event* constitutes the demonstration that mathematics is ontology'. He made this claim orally at a seminar "Ontologie et mathématiques" at the American University of Paris on June 17th 2019. See "Ontology and Politics: an Interview with Alain Badiou", in *Alain Badiou, Infinite Thought: Truth and the Return of Philosophy*, Continuum, London 2003, where Badiou says "A large part of *L'être et l'événement* tries to explain with the means of mathematics why mathematics is ontology. As a matter of fact it is its task", p. 184.

or model of non-ontological situations. Rather these objects or names – such as 'non-ontological situation', 'natural' or 'historical situation', 'evental-site', 'state', 'impasse of being' – are all elements of a model of a theory. In pragmatic terms, Badiou's metaontology creates a new universe of objects. When I analyse a situation as a historical situation, my metaontological model enters into competition not with given concrete situations (as a vulgar empiricism would have it, somehow measuring 'theory' against 'reality'), but with established universes created by the models of other theories; that is to say, it enters into an ideological battle (the constant theatrical background of Badiou's project).

So the concept of modelling allows the dismissal of the charge of schematism, but there is one last problem. The solution from modelling does not completely eliminate the suspicion of insufficient justification. Simply put, why model ZFC set theory and not another mathematical theory?

The practice of modelling entails a plurality of models

Here the solution is evident, and it is exemplified by Badiou's own practice, turning to category theory in *Logics of Worlds* to entirely remodel the philosophical discipline of phenomenology, and back to the theory of grand cardinals to rework his system again in *The Immanence of Truths*. In other words, there is a *positive* interpretation of the initial choice of ZFC appearing undemonstrated and thus arbitrary: the practice of modelling can entail a plurality of models. In this way, the insufficient justification is transformed into the contingency of a decision. Here we can follow as our guide the many 'decisions on being' that take place in the multitude of generic truth procedures; that is to say, we *can* accept a proliferation of decisions on being, it doesn't need to make us anxious.

Yet if these decisions on being concern the modelling of ontology *itself*, then we find the way opened to not one but many ontologies! Now this would be quite another strategy to adopt on the basis of the initial argument that the being of the One must be rejected and being thought as inconsistent multiplicity. This would be an approach similar perhaps to what Jean-Toussaint Desanti calls 'extrinsic ontology', according to which, when one interprets the phrase 'being qua being', one works to embrace the maximum of senses encapsulated in being, along the lines of Aristotle's initial intuition – that being is spoken in many ways –

an intuition that Aristotle, and subsequently many philosophers after him, swiftly sets aside.[29]

There are actually a few indices or openings to this strategy of many ontologies in Badiou's own work. When he shows that one of the singular characteristics of set theory ontology is that it does not totalize being, does this not open up the possibility of other kinds of inscription of being? When he argues that ontology is not a transcendental all-englobing situation but merely one situation amongst others, could it not also be one ontology amidst others?

There are two evident objections to this strategy of multiple ontologies. First, it will end up in eclecticism: there are conferences on the ontology of this or that, the ontology of emotions, the ontology of social constructs. Second, the choice of multiple ontologies via this eclecticism finally ends up in nihilism. Barry Smith has attempted to construct a 'Basic Formal Ontology' for the benefit of engineering and medical databases not to mention, the military and intelligence communities including the FBI.[30]

One can avoid eclecticism and nihilism by dismissing the idea that every single situation comports its own set of existential commitments which constitute a specific ontology. In my own work on action I show that the ontology opens up not as another variant of the discourse of the university, but as a lived enquiry uniquely when a failure or dysfunction occurs in the reception and consequences of an action. The action itself turns out to be 'equivocal' in that it is subject to conflicting attributions of its nature – is it a just or unjust action, has Macron's government 'ensured a return of the rule of law in Notre Dame des Landes', or has he 'destroyed people's livelihood'? This equivocity expands to include the intention behind the action, its identifiable consequences and even the identity and 'kind' of the action's agent. Contestation occurs over the being of these actions, and each side in such controversy develops its own ontology of these actions. In this manner diverse ontologies multiply in so far as people – not just philosophers – explore the nature of failure and dysfunction and controversy in

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[29] Jean-Toussaint Desanti, "Some Remarks on the Intrinsic Ontology of Alain Badiou", in *Think Again: Alain Badiou and the Future of Philosophy*.

[30] See the Wikipedia article on Smith: https://en.wikipedia.org/wiki/Barry_Smith_(academic)

the occurrence of actions: I call this approach an 'anatomy of failure'.[31] I would hesitate to term this a 'democratization' of ontology as a kind of writing, because it does not concern a majority of people, nor is it based on the circulation of opinions. Anatomies of failure occur when people recognize and explore the undoing of opinions through the ambivalence and equivocity of certain actions. This process undoes received ideas and leads to the modification or displacement of dominant ideological positions in a political situation. It is democratic, however, in so far as it requires a process of deliberation between a number of actors from different social and political contexts.

The result of people carrying out anatomies of failure, and broadcasting them, is that alongside this 'stellar' set-theory ontology which schematizes the structures and inconsistent multiplicities underneath all kinds of existential commitment, we would embrace a multiplication of sub-lunar ontologies, and so account for the disjunctions and overlaps in existential commitments, such as the disjunction between Creon and Antigone. The level at which these ontologies would make a difference would be in the diagramming of conflicts over what kinds of action exist. The result of such an exercise would not simply be dialogue across conflict – one can read Rorty or Habermas for that. The result of such an exercise would be the remodelling of these conflicts *according to* these multiple ontologies. Such remodelling – and this is an argument I develop at length with regard to Hume's *History of England* – creates new durations.[32] And every new duration entails the emergence of a powerful – because new – measure of the gap between the actual and the ideal. In the gap between the actual and ideal arises the hope of justice.

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[31] See Oliver Feltham, *Anatomy of Failure: Philosophy and Political Action*, Bloomsbury, London 2013.

[32] This argument is substantiated in Oliver Feltham, *Destroy and Liberate: Political Action on the Basis of* Hume, Rowman and Littlefield, London 2019.

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