



SPECULATIONS

ISSUE 1/1
DECEMBER 2015
ISSN 2327-803X

Speculations VI

speculationsjournal@gmail.com
www.speculations-journal.org

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ISBN-13: 978-0692593974
ISBN-10: 0692593977

V 1.0

 punctum books * brooklyn, ny

 2015

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Articles

Garcia's Paradox

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I. N'importe Quoi

THE MOST IMPORTANT CONCEPT in Book I of Tristan Garcia's *Forme et objet: Un traité des choses* is perhaps *without importance*, "n'importe quoi" ("anything").¹ In an ordinary, exclamative sense, the expression "c'est n'importe quoi!" may translate as "that's bullshit!" or "that's rubbish!" and so on. In this sense, "n'importe quoi" is close to "nothing." But when I say "*that's* bullshit!" something characterized as "n'importe quoi" is not *absolutely* nothing since having the property of bullshit is at least something, however much disapprobation we might bring to bear. Like Heidegger's infamous discussion of "das Nichts" ("the Nothing") Garcia's usage both deviates substantially from colloquial French and cleverly combines the quantificational sense of the phrase ("for all x") and something more denotational and name-like.

A historically attuned reader of Garcia cannot help but think back to Rudolph Carnap's attempted excoriation of Heidegger for just this same supposed sin.² According to Carnap, he treated "Nichts" as if were a name with a specific

1 Tristan Garcia, *Forme et objet: Un Traité des Choses* (Paris: Presses Universitaires de France, 2011).

2 Rudolph Carnap, "Überwindung der Metaphysik durch Logische Analyse der Sprache," in *Erkenntnis*, 2:4, (1931), 219–41.

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denotation, rather than a quantificational expression meaning “it is not the case that there exists an x such that.”

This is actually a felicitous comparison, for Graham Priest has recently demonstrated not only that Carnap was wrong about Heidegger but why it was interesting that he was wrong.³ One can, in fact, use the logic that Carnap helped create and popularize to make perfect sense of Heidegger’s argument as saying something profound about how cognizing limits of description forces one to also cognize something beyond the limits of the describable by describing that very something.⁴

Something similar can be achieved with respect to Garcia’s “n’importe quoi.” This will not only forestall potential uncharitable Carnaps amongst the readership, but also bring to the forefront central properties of the n’importe quoi. Again, like Heidegger, Garcia’s usage of the term departs substantially from the colloquial. While one might argue about how important the issue of “Nichts” really is to making sense of either the substantive disagreements between Heidegger and Carnap or to Heidegger’s *œuvre* considered

3 Graham Priest, *Beyond the Limits of Thought* (Oxford: Oxford University Press, 2002).

4 We would be remiss not to note that Garcia himself would certainly demure with respect to the relevant bit of Heideggeriana (cf. the discussion of “nothing” in Book I, Part I, Section II of *Forme et Objet*). Also consider Herman Philipse on “the problem of being” in Herman Philipse, *Heidegger’s Philosophy of Being* (Princeton: Princeton University Press, 1998). Both of these more recent charges of equivocation rest neither on the verificationism in common to phenomenologists and positivists (cf. Mark Okrent, *Heidegger’s Pragmatism: Understanding, Being, and the Critique of Metaphysics* (Ithaca: Cornell University Press, 1991) and Raphaël Millière, “La métaphysique aujourd’hui et demain,” *Atelier de métaphysique et d’ontologie contemporaines* (October 2011), <http://www.atmoc.fr/resources/La-metaphysique---Milliere.pdf>. Mark Allan Ohm’s English translation of the latter is available at http://atmoc.files.wordpress.com/2012/06/milliere_metaphysics_today_and_tomorrow1.pdf.) nor the Carnapian view that all natural language reasoning can be formalized.

in itself,⁵ “n’importe quoi” is a fundamental part of Garcia’s systematic metaphysics.

By our rough count, the phrase occurs one hundred and forty three times in *Forme et objet*, one hundred and thirty four of these in Book I. The term occurs with no preceding article: (1) as a simple predicate after some conjugation of “être” (e.g. “Que rien ne soit n’importe quoi...” (i.i.i §10, p. 30)),⁶ (2) as a subject noun phrase (e.g. “N’importe quoi peut être quelque chose...” (i.i.iii §5, p. 61)), (3) as a direct object (e.g. “Prenez - ou ne prenez pas - n’importe quoi...” (i.i.i §8, p. 29)), (4) as an adjectival quantifier (e.g. “tout tabou est donc différent des autres de telle sorte qu’un tabou n’est jamais *n’importe quel* tabou...” (i.i.i §17, p. 36)), and (5) after a preposition (e.g. “Pour accéder à n’importe quoi...” (i.i.i §11, p. 30)). Some of the above uses occur in quotation marks (e.g. “‘n’importe quoi’ n’est rien d’autre que l’expression du refus d’accorder quelque importance que ce soit à ce qu’est ceci, à ce qu’est cela, à ce que peut être tout ce qui peut être” (i.i.i §8, p. 30)). The phrase occurs with a preceding definite article (“le”): (1) as a subject (e.g. “Le « n’importe quoi » n’a pas d’intérêt...” (i.i.i §8, p. 30)), (2) after a preposition (e.g. “Si une contradiction est une porte d’accès au n’importe quoi...” (i.i.i §16, p. 36)), (3) after a partitive (e.g. “C’est le monde plat du *n’importe quoi*” (i.i.i, p. 41)),

5 For the former, cf. Michael Friedman, *A Parting of the Ways: Carnap, Cassirer, and Heidegger* (Chicago: Open Court, 2000), and Peter Gordon, *Continental Divide: Heidegger, Cassirer, Davos* (Cambridge MA: Harvard University Press, 2010). For the latter, see Graham Harman, *Tool-Being: Heidegger and the Metaphysics of Objects* (Chicago: Open Court, 2002).

6 “(i.i.i §10, p. 30)” should be read as “Book I, Part I, Chapter I, Section 10, on page 30.” With one exception, each Chapter in Book I (“Formellement”) of *Forme et objet* begins with numbered sections, followed by one to three sections of commentary. The Chapters in Book II (“Objectivement”) do not begin with numbered paragraphs, and are divided into named sections. So “(i.i.iii, p. 68)” will cite material in the post-numbered commentary, and “(ii.ii, p. 180)” will cite material in Book II, Chapter II.

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and (4) as a demonstrative (e.g. “Et c’est ce n’importe quoi qui nous intéresse ici” (i.i.i, §22, p. 39)). Some such uses occur in quotation marks (e.g. “Le refus physique ou métaphysique du « n’importe quoi »” (i.i.ii §4, p. 50)).

Garcia’s philosophical prose is in fact generally so clear that were it not for the fact that the phrase represents a central metaphysical category, there would be no special difficulty for the translator. One could just use cognates of “anything” and for determiners affix “the concept of,”⁷ and then fiddle further with the syntax of the English sentences to secure quantificational (i.e. “for all x”) readings throughout. But, as will be clear from the following discussion, this would actually radically confuse Garcia’s metaphysics, one that demands the reader give phrases with quantificational interpretations simultaneous name-like⁸ interpretations.

Another solution would be to stay closer to the French

7 Much boorishness could be avoided if something like this guideline (or for example using “humanity” instead of “the human”) concerning determiners were taken as a general rule, to be honored in the breach only when absolutely necessary. That is, if you talk about “the event” or “the other” (capitalized or not) in English conversation, it is perfectly licit for an interlocutor to badger you about which event or other you mean to reference. But this is not the case with respect to the French definite article in ordinary conversation. In this manner, retaining determiners in the English often slaps on a patina of affectation that is not there in the original.

8 We say “name-like” for two reasons: (1) Carnap’s quibble actually concerned “das Nichts” which is a determiner-noun noun phrase, but still name-like because the determiner normally functions to pick out one entity, (2) much more important, even though Garcia uses the phrase “le n’importe quoi,” it would be a category error on Garcia’s view to say there was one “n’importe quoi.” In an attempt to differentiate his position from Quine and Leibniz, Garcia explicitly states in an introductory footnote that oneness or identity is not a requirement of “n’importe quoi.” Moreover, Garcia’s view of counting has much in common with the Geach-Kraut view of indiscernibility, where identity only makes sense relative to a sortal predicate (or more metaphysically, a property of the right sort). Robert Kraut, “Indiscernibility and Ontology,” *Synthese*, 44 (1980), 113–35. But, as we note above, there is neither predicate nor propriety to do such work with “n’importe quoi.”

syntax and mark the phrase as philosophical by rendering it “Anything” with a capital “A,” in the sense that it used to be standard to translate Heideggerian “Sein” with big B “Being” in English. But translating “n’importe quoi” in this way would also lead to much confusion, for the literal combinatorial meaning of the three words actually does work for Garcia as well. As we will show, it is central to n’importe quoi that it be *absolutely undetermined*, not any kind of “what” that can be determined via predicate or property. For these reasons, in our forthcoming Edinburgh University Press translation of Garcia’s book we translate “n’importe quoi” as “no-matter-what.”

II. Surface Contradictions

In addition to issues of semantic type, a first time reader might think that Garcia is simply saying incoherent things about no-matter what. Here we will present just a few instances of the main seeming contradiction, all from Book I, Section I, Chapter I, though these claims are of necessity repeated throughout Book I by Garcia.

On the one hand, Garcia claims that something can never be n’importe quoi, that nothing can be n’importe quoi. For example:

Quelque chose n’est jamais n’importe quoi : je ne pourrais pas trouver dans le monde quelque chose qui serait n’importe quoi (i.i.i §9, p. 30).
Que rien ne soit n’importe quoi signifie qu’il n’existe pas un objet, un événement, un dieu, une idée qui serait « n’importe quoi ». (i.i.i §10, p. 30).

In our translation, we render these as:

Something is never no-matter-what. I could not find something in the world which would be no-matter-what (i.i.i §9, p. 30).

That nothing is no-matter-what means that there does not exist any object, event, god, or idea that would be ‘no-matter-what’ (i.i.i §10, p. 30).

In seeming contradiction to these assertions, we are simultaneously told both that n’importe quoi can be something

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and that *n'importe quoi* is something.

Pour autant, *n'importe quoi* n'est pas rien, bien au contraire. *N'importe quoi*, c'est-à-dire « également ceci *ou* cela *ou* tout autre chose », est quelque chose (i.i.i §13, p. 31).

This can be rendered:

Nonetheless, no-matter-what is not nothing. On the contrary, no-matter-what - that is to say, 'equally this *or* that *or* any other thing' - is something (i.i.i §13, p. 31).

But then Garcia is saying both that no-matter-what is something and that nothing is no-matter-what. And to add to one's potential soupçon, consider,

D'où nous pouvons affirmer qu'il est incompatible d'être quelque chose et d'être *n'importe quoi* : tout ce qui n'est pas *n'importe quoi* est quelque chose (i.i.i §16, p. 36),

which we translate as,

From this we can claim that it is incompatible to be something and to be no-matter-what. Everything which is not no-matter-what is something (i.i.i §16, p. 36).

Again, how can it be incompatible to be something and to be no-matter-what while at the same time being the case that no-matter-what is something?

The answer to this question requires attending to one essential facet in Garcia's theory of being, most clearly presented in Part III of Book I. Note in what follows that Garcia's notion of "comprehension" is not intrinsically epistemic nor tied to human or animal capacities. For Garcia, any object that includes another *in any way* can be said to comprehend that other object. With this proviso, we have the following:

The subject is always the part, and the predicate is the whole, the set. When I say that x is y , I mean that x belongs to y , that

x is a part of y , that x composes y , and that x takes part in y 's matter. x is y – that is, that x is comprehended by y . Since x is y , y comprehends x , y is external to x , and y is 'outside' x .

The first important consequence of the decision to interpret 'being' as the inverse of comprehending derives from the product of an 'anti-symmetric' relation. It may seem that being is the sign of a symmetric identity relation: if a is b , then b is a , and so on. No! Being is anti-symmetry *par excellence*. If a is b , then b cannot be a . Being means nothing other than this one-sidedness [*ce sens unique*] (i. iii, pp. 117-118).⁹

From this perspective, it is easy to show the seemingly contradictory claims to be consistent.

First, consider the claim that nothing is no-matter what. The most important meaning of this for Garcia is if we take "nothing" in the quantificational sense and no-matter-what as name-like (as noted, it is a consequence of his metaphysics that this is permissible). Then we are saying all things are such that they do not enter into the no-matter-what, or equivalently that all things are such that the no-matter-what does not comprehend them.

So the no-matter-what is contained in other things (in "something") but itself contains nothing, the exact inverse

9 In the French passage, Garcia actually uses the word "transitive" in the grammatical sense. But this would be unclear to an English reader as it is absolutely clear that he means "symmetric" in the mathematical sense. Given this, his "non" should be "anti-." Mathematically, the four words are the same in both languages. Again though, this also means that being is intransitive in the sense that it takes no direct object, it is unidirectional. Another crucial feature of Garcia's theory of being is that something is never (in) itself, or what Garcia calls "compactness." The relation between something and itself is anti-reflexive (e.g. $x \notin x$ or "I am not myself") and yields another seeming contradiction, this one of a Fregean "the concept horse is not a concept" type, i.e. "no-matter-what, through the milieu of something, is not no-matter-what. Something is in fact that which 'detaches' no-matter-what from no-matter-what; no-matter-what is a thing, and a thing is that which is not no-matter-what" (i.i.iii §10, 62)).

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of Garcia's "world" which is a container of every thing but which is itself not contained.¹⁰

Given that being is being comprehended, and that this is anti-symmetric, if nothing is no-matter-what, then (for Garcia) no-matter-what is not nothing. This means, quantificationally, that no-matter-what is something. Which is precisely our other claim.

Now let us recover our pre-Carnapian innocence and think of the quantificational phrase "something" as name-like. To make this maximally clear, we will follow Heidegger and talk of "the something." Then to say that no-matter-what is something is to say that no-matter-what enters into the something and that the something comprehends no-matter-what.

Again, part of Garcia's genius is that the equivocations Carnap saw in Heidegger are a consequence of Garcia's metaphysics. So let's consider the claim that no-matter-what is something with "no-matter-what" understood quantificationally. Then, to say that no-matter-what is something is to say that anything is something, or as he sometimes puts it "anything can be something," which is as succinct a statement of Garcia's radically anti-reductionist Meinongian ontological profligacy as can be made! Like Meinong, or perhaps more so, when Garcia says "anything" he really means *anything*.¹¹ For Garcia, any thing, whether existent or not, possible or not, imaginary or not, consistent or not, etc. is a thing. We discuss this further in presenting the initial paradox.

10 In "Why a Dialetheist Might Still be Moved by Russell's Paradox: Tristan Garcia on World" we demonstrate the manner in which Garcia's world is like a proper class in traditional set theory, and also show how the reasons are interestingly different. Mark Allan Ohm and Jon Cogburn, "Why a Dialetheist Might Still be Moved by Russell's Paradox: Tristan Garcia on World," in preparation.

11 However, it should be noted that Garcia distances himself from Meinong and various neo-meinongian currents. See Tristan Garcia, "Après Meinong. Un autre théorie de l'objet," *Atelier de métaphysique et d'ontologie contemporaines*, (April 2012), <http://www.atmoc.fr/resources/handout23.pdf>.

III. Garcia's Paradox

We have seen that for Garcia to be is to be comprehended, and when we put this together with his understanding of the claim that anything can be something we get the further claim that to be is to be determined. Garcia's defense of this view and drawing out of the anti-reductionist and anti-dialectical consequences in some way forms the whole 486 pages of the book, and we cannot hope to do it justice here. In particular we will not discuss two of Garcia's major accomplishments: (1) his idea that an object is neither a substance nor a bundle of properties, but rather the difference between that which the object comprehends and that which comprehends the object, and (2) the systematic deployment of this differential model combined with his concept of "intensity" to account for an astonishing variety of phenomena (e.g. time, life, animals, gender, death, art. . .) in Book II of the work.

For our present purposes we must focus on the discussion inaugurated in Book I, Part I, Chapter I, Section 15. There Garcia considers six distinct strategies that preclude no-matter-what from being something: logical, linguistic, epistemic, cultural, religious, moral/political. In each case he opposes the claim that some category does not pick out a thing by noting that within that category determinations are made. In other words, each strategy denies that something has what Garcia calls a "minimum-of-what" (i.i.i. §16, p. 36), that is, a minimum determination. Unlike no-matter-what, these things are not *absolutely* indeterminate.¹²

For example, to the logician who denies that there are true contradictions, Garcia deftly points out that we can differentiate contradictory entities; the squared circle is necessarily circular while the non-white white is not. This, then, is how

¹² As with the example of a clementine that follows, Garcia makes this point rather brilliantly elsewhere, when one tries to remove all determinations from something (in the example, a tree): Tristan Garcia, "Crossing Ways of Thinking: On Graham Harman's System and My Own," trans. Mark Allan Ohm, *Parrhesia: A Journal of Critical Philosophy*, 16 (2013), 14-25.

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he defends the claim that anything is something. Garcia argues that to attribute a determination is to talk about a thing. To be is to be determined. It is in this sense, then, that no-matter-what can be anything.

But then once one holds that to be is to be determined, Garcia's Paradox follows naturally. All one must do is consider an entity that lacks all determination, and note that lacking all determination is itself a determination. For Garcia, the no-matter-what names precisely this determination of lacking all determination. Consider a representative passage:

What do we mean by claiming that a clementine is something, that a segment, pip, orange colour, weight, unity, its falling, two, three, the word 'clementine', or its idea are something, just as me, you, an animal, or the earth? We have assumed that a clementine is not *another thing*, that it is only *something*. More precisely, we have assumed that a clementine is not no-matter-what. A clementine is *this* clementine. But this clementine is not *that* clementine. Therefore, it is a matter of something, it is a matter of no-matter-what. The word 'clementine' is neither the word 'Australia' nor an animal nor the end of a storm. When this clementine is something, it is not that clementine or something else. No-matter-what, we have said, is this *or* that *or* its opposite *or* something else. No-matter-what is something, anything.

A clementine is not this *or* that *or* its opposite *or* anything else. It *matters* that a clementine be something, that is, that it can be this or that, but that it absolutely cannot be this or that or anything else. If a clementine is no-matter-what, then it is not a matter of a clementine (i.i.iii §7, p. 61).

For a clementine to be something it must be determined in some way, but no-matter-what's only determination is that it lacks all determination.

This is clearly a *prima facie* paradoxical notion, but we can see why Garcia must embrace it. In order to articulate what is arguably the most resolutely anti-reductionist metaphysical system in the history of thought Garcia puts forward the bold Meinongian claim that anything (no-matter-what) is something. While critiquing specific forms of reductionism

inconsistent with this claim he argues that all that is necessary for being something is possessing some determination. But then what about the concept of just being anything? For this concept to be maximally inclusive it must lack any determination whatsoever. But “lacking any determination whatsoever” is itself a determination. So it would seem to both lack and possess determinations.

One might say that this no-matter-what is itself thus a contradictory entity, but Garcia's model of being provides a way out of the paradox. Let us step back and consider all of the things that lack all determinations. By describing the collection thus, we provide a determination, so everything in this “collection” is both determined and not determined. So, on the assumption that this is a contradiction we should reject,¹³ we now know that nothing is in this collection. But now we have a “thing” such that nothing is (in) this thing! Moreover, this thing is something, as it has a determination, being the collection of all things that have no determination.

In the Appendix we provide a formal derivation of this. What we hope to have done is provide a rational reconstruction of the reasons that led Garcia to characterize the no-matter-what as being something while at the same time affirming that nothing is no-matter-what. This is a novel paradox, and a somewhat novel solution. Not entirely novel, as the no-matter-what has commonalities with the empty set that forms the basis of standard set-theoretic universes in mathematics. But somewhat novel because standard set-theories either simply assert the existence of an empty set via axiom, or prove it using a restricted comprehension axiom with respect to a claim that some object is not identical to itself. In both cases the axiom of extensionality, which holds that

¹³ Since Garcia is committed to inconsistent objects (given that they possess determinations), this is a way open to him, albeit one he does not take. In fact, one of Garcia's most profound discussions (located in Book I, Part I, Chapter V (*Le Compact*)) concerns the manner in which the dialetheist must face the fact that mere inconsistency is not sufficient grounds for rejection. This is one of many places that there are fruitful grounds for dialogue between Graham Priest and Garcia.

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two sets are identical if they have the same members, is later employed to show that there is only one empty set.

The no-matter-what is distinct from the empty set in several ways. First, it is not clear that the normal derivation would work for Garcia, since in his account of beauty he allows that things can be more or less themselves. Likewise, Garcia's anti-reductionist differential model of objects is inconsistent with the axiom of extensionality, so it is not clear that one could go on to strictly establish that there is exactly one no-matter-what. As noted in footnote 8, Garcia's model of counting (in common with the Geach-Kraut view of individuation) arguably precludes providing either ordinality or cardinality to the no-matter-what.

IV. Conclusions

What have we established? The importance of no-matter-what is that it lacks all importance. No-matter-what can be bullshit, but it can also be horseshit or clownshit or Donald Rumsfeld. And while no-matter-what can be this or that or any other thing, each of them alone is not no-matter-what. We also hope to have made explicit is that, even though it may be an arduous and otherwise thankless task, *translation matters*. One's entire universe can hinge on the felicitous rendering of a phrase. We will have been successful here if our clarifications of this phrase assist the English reader approaching Garcia the first time and also to the extent that we have enlarged that readership by showing that no-matter-what, for all its necessary lack of importance, is nonetheless immensely important.

Appendix

Here is a formal proof of the existence of no-matter-what. The places analogous to Garcia's claims are: (1) the unrestricted (second order!) Comprehension Axiom which would be one way of articulating the claim that to be is to be determined,

(2) line 13 ($\forall x (x \notin a)$), which would be one formal way of expressing the claim that nothing is no-matter-what, and (3) the conclusion, line 15 ($\exists y \forall x (x \notin y)$) which would be one way of expressing the claim that no-matter-what is something. Here are the rules that might be found controversial.

Second Order Comprehension:

Where y is the only free variable in $\Phi[y]$, $\exists x \forall y (y \in x \leftrightarrow \Phi[y])$.¹⁴

Second Order Existential Introduction (\exists^2 introduction):

Where b is a term of type \circ , $\Phi[b] \vdash \exists P(P(b))$.

Second Order Existential Elimination (\exists^2 elimination):

Where b is a term of type \circ , $\exists P(P(b)) \vdash R$ when it can be shown that there is some Q that doesn't occur in P , nor in any assumptions upon which $\exists P(P(b))$ rests, such that $Q(b) \vdash R$.

We start by considering the determination of having no determinations, which we express as $\forall P \neg Px$, meaning for all determinations, x does not have that determination. Then the beginning of the proof is an instance of Second Order Comprehension applied to the determination of having no

14 Note that one obtains a similar proof using Graham Priest's stronger "Characterization Principle," some form of which Garcia is committed to. Graham Priest, *Towards Non-Being: The Logic and Metaphysics of Intentionality*, (Oxford: Oxford University Press, 2005). Instead of forming a set of things characterized by a given property, the Characterization Principle allows us to name one of the things so characterized: where y is the only free variable in $\Phi[y]$, then for some term t , $\Phi[t/y]$. Then what you get corresponds to lines 6-11 of the proof we go on to represent. There are a variety of open issues between Priest and Garcia, not least of which concern dialogue between Priest's appeal to possible worlds to save the characterization principle from slingshot type arguments (e.g. let the predicate be " $y = y$ and A " let the unused name be "fred," then you get "fred = fred and A ," which entails that A is true for any A) and Garcia's critique of possible worlds in Book I, Part II, Chapter III. Of course an unrestricted Comprehension Axiom is problematic in that it yields Russell's Paradox. See our discussion in "Why a Dialetheist Might Still be Moved by Russell's Paradox: Tristan Garcia on World," where we expound further on the potential disputes between Priest and Garcia concerning Russell's Paradox.

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determinations.

- | | | |
|-----|---|--|
| 1. | $\exists x \forall y (y \in x \leftrightarrow \forall P \neg P(y))$ | by Comprehension |
| 2. | $\forall y (y \in a \leftrightarrow \forall P \neg P(y))$ | assumption for \exists elimination
("a" is arbitrary) |
| 3. | $ [b]$ | assumption of arbitrary name "b"
for \forall introduction |
| 4. | $ b \in a \leftrightarrow \forall P \neg P(b)$ | 2 \forall elimination |
| 5. | $ b \in a$ | assumption for \neg introduction |
| 6. | $ \forall P \neg P(b)$ | 4,5 \leftrightarrow elimination |
| 7. | $ \exists P (P(b))$ | 6 \exists^2 introduction |
| 8. | $ Q(b)$ | assumption for \exists^2 elimination
("Q" is arbitrary) |
| 9. | $ \neg Q(b)$ | 6 \forall^2 elimination |
| 10. | $ \perp$ | 8,9 \neg elimination |
| 11. | $ \perp$ | 7, 8-10 \exists^2 elimination |
| 12. | $ b \notin a$ | 5-11 \neg introduction |
| 13. | $ \forall x (x \notin a)$ | 3-12 \forall introduction |
| 14. | $ \exists y \forall x (x \notin y)$ | 13 \exists introduction |
| 15. | $\exists y \forall x (x \notin y)$ | 1, 2-14 \exists elimination |

Comments: (1) From a logical perspective, two things are interesting here. First, the use of second order resources, which is not the norm in set theory. We do not know if this presents any special problems. Note that one could do the above with Comprehension restricted to subsets of other existing sets, but one would still need the second order version. Second, as noted in the body of the paper, we have not proved that there is exactly one no-matter-what. This would require an axiom of extensionality, which in this context would fit neither with (a) Garcia's central intensionalist contention that an object is not determined by that which is comprehended by the object, but rather that the object is the difference between that which it comprehends and that which comprehends it, nor (b) Garcia's semi-Geach-Kraut type theory of how counting is relativized to a sortal property.

(2) Even given this, tension with Garcia's framework might

be argued to arise from two sources: (a) in this context Garcia would have good reason to restrict the Comprehension Axiom, since an unrestricted axiom would yield sets that are members of themselves,¹⁵ and (b) the conclusion could be parsed in natural language as saying that something is such that nothing is it, which might be parsed as something is no-matter-what, which Garcia denies. We take the first to be part of a collection of important questions concerning what a Garcian philosophy of math would look like. In any case, as long as some object exists the proof would work as long as second order comprehension axiom restricted in the usual manner (only applying to subsets of already existing sets) was deemed licit. The second seems less important to us. The sentence is not in English, and in English should literally be read as, “There exists a y such that, for all x , x is not a member of y .” There seems nothing amiss about someone who accepts Garcia’s metaphysics to read this in English as “no-matter-what is something,” with no-matter-what getting a name-like reading, i.e. that which has no members is something. Consider that “ $\exists y(\text{Happy}(y))$ ” can be read as that which is happy is something. These kinds of readings seem to us to be the price one pays for taking it to be the case that to be is to be determined. Likewise, as rich and important as the general project remains, Carnap was mistaken in thinking that discourse could without loss be reduced to logical derivations. There is a price to pay here too.¹⁶

15 We begin to discuss these issues in “Why a Dialetheist Might Still be Moved by Russell’s Paradox: Tristan Garcia on World.”

16 We would like to thank Emily Beck Cogburn, Paul John Ennis, Tristan Garcia, Fabio Gironi, Graham Harman, and Dawn Suiter.

Lacking Causes: Privative Causality from Locke and Kant to Lacan and Deacon

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From Alexandre Koyré in the middle of the twentieth century to Quentin Meillassoux today, much of French epistemology and philosophy of science has relied upon a one-sided neo-rationalist appropriation of the Galilean distinction between primary and secondary qualities¹ (a neo-rationalism indefensibly ignoring Baconian empiricism, with the latter's emphasis on methodical observation and experimentation as essential to scientificity in the modern sense). The very

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- 1 Galileo Galilei, "The Assayer," *Discoveries and Opinions of Galileo*, trans. Stillman Drake, New York: Anchor, 1957, 274-278 (Alexandre Koyré, *From the Closed World to the Infinite Universe* (New York: Harper Torchbooks, 1958), 99, 278. Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. Ray Brassier (London: Continuum, 2008), 1-3, 8, 13. Adrian Johnston, "This is orthodox Marxism: The Shared Materialist *Weltanschauung* of Marx and Engels," *Quaderni materialisti*, 2013, special issue: "On Sebastiano Timpanaro" [forthcoming]. Adrian Johnston, "Turning the Sciences Inside Out: Revisiting Lacan's 'Science and Truth,'" *Concept and Form, Volume Two: Interviews and Essays on the Cahiers pour l'Analyse*, ed. Peter Hallward and Knox Peden (London: Verso, 2012), 105-122. Adrian Johnston, *Prolegomena to Any Future Materialism: Volume One, The Outcome of Contemporary French Philosophy* (Evanston: Northwestern University Press, 2013).

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phrasing of this distinction legible in Galileo Galilei's 1623 text "The Assayer" is to be found in another canonical work of the early modern period: British empiricist John Locke's hulking 1690 tome *An Essay Concerning Human Understanding*. Locke takes up the matter of primary and secondary qualities in "Chapter Eight" ("Some Further Considerations Concerning Our Simple Ideas of Sensation") of "Book Two" ("Of Ideas").²

Interestingly, Locke's handling of these different discerned qualities of perceptible bodies is immediately preceded, in the opening paragraphs of "Chapter Eight, Book Two" of *An Essay Concerning Human Understanding*, by discussion of another distinction, namely, that between two types of causes, "positive" and "privative"³ (in both the 1763 pre-critical essay "Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy" and the *Critique of Pure Reason*, Immanuel Kant later covers similar terrain with greater technical precision and exactitude⁴). As per the mind-world, subject-object model underpinning his epistemology, Locke distinguishes between two possible categories of origins or sources in the objective world for the subjective mind's ideas: presences and absences. In terms of what he dubs "simple ideas of sensation" (i.e., basic percepts of consciousness),⁵ coldness and darkness count as two straightforward illustrations of these kinds of ideas. As contents of a subject's sentient awareness, the ideas of coldness and darkness are, as are all ideas *qua* mental contents in general for Locke, effects generated in

2 John Locke, *An Essay Concerning Human Understanding, Complete and Unabridged in Two Volumes: Volume One*, ed. Alexander Campbell Fraser (New York: Dover, 1959), 168–171.

3 Locke, *An Essay Concerning Human Understanding*, 166–168.

4 Immanuel Kant, "Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy," *Theoretical Philosophy, 1755–1770*, ed. David Walford; trans. David Walford and Ralf Meerbote (Cambridge: Cambridge University Press, 2002), 217, 221, 236.

Immanuel Kant, *Critique of Pure Reason*, trans. Norman Kemp Smith (New York: Saint Martin's Press, 1965), A290/B346–A292/B349.

5 Locke, *An Essay Concerning Human Understanding*, 148–150.

the mind by the extra-mental world. However, in instances of sensory-perceptual ideational representations such as the two being considered as examples here, a question that can be asked is whether certain sorts of simple ideas of sensation actually are caused by the presence or absence of a given entity or event in mind-independent objective being. Are the ideas of coldness and darkness triggered by the presence of really-existing, non-ideational coldness and darkness (i.e., positive causes), or are they merely the mental representations of the absences of heat and light (i.e., privative causes)?

Locke tries to remain noncommittal about the ontological reality of privative causes over the short course of the six paragraphs treating them as distinct from positive causes (Kant too subsequently wavers, confessing that, “it is often difficult to decide whether certain negations of nature are merely lacks [*Mängel*] arising from the absence of a ground, or deprivations resulting from the real opposition [*Realentgegensetzung*] of two positive grounds”⁶). In this, Locke is being uncharacteristically consistent. At the outset of *An Essay Concerning Human Understanding*, he announces his intention to restrict himself exclusively to epistemology, thereby avoiding forays into the realms of ontology.⁷ But, in both Locke’s case as well as that of the Kantian transcendental idealism Locke helps to inspire, the gesture of restricting theoretical philosophy to epistemology must, in the very act of its performance, simultaneously violate this its own restriction; it must either overtly posit or covertly presuppose a corresponding ontology supporting even empiricist and/or critical theories of knowledge ostensibly agnostic about being as it is in and of itself beyond knowing.⁸

6 Immanuel Kant, “Versuch, den Begriff der negativen Grössen in die Weltweisheit einzuführen,” *Vorkritische Schriften bis 1768*, Werkausgabe, Band II, ed. Wilhelm Weischedel (Frankfurt am Main: Suhrkamp, 1968), 813. Kant, “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” 236.

7 Locke, *An Essay Concerning Human Understanding*, 25–33.

8 Adrian Johnston, “Repeating Engels: Renewing the Cause of the Materialist Wager for the Twenty-First Century,” *Theory @ Buffalo*, no. 15, special

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Without contradicting his inconsistently maintained ontological agnosticism, Locke admits the possibility in principle of objective privations (i.e., absences, lacks, etc.) being real causes of simple ideas of sensation as positive contents in the minds of subjects *qua* conscious epistemological agents.⁹ Similarly, he allows for the meaningfulness of “negative names” designating privations as themselves given facts of experience known to minded awareness.¹⁰ But, Locke quickly moves on to consideration of the distinction between primary and secondary qualities, leaving behind that between positive and privative causes in a state of uncertainty, indeterminateness, and irresolution. One of my guiding intentions in this intervention is to revive and enrich the category of privative causality for the benefit of contemporary philosophy and today’s modern sciences, which themselves are the descendants not only of Galileo, but also of Francis Bacon and the British empiricism following in his wake (including that of Locke and the David Hume who awakens Kant from his “dogmatic slumber”¹¹).

At the end of the second section of his “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” Kant, as elsewhere in this essay (and throughout his mature *oeuvre* in its entirety), evinces a modest hesitancy reflecting the cautious philosophical temperament systematically expressed in the monumental *Critique of Pure Reason*. He observes that:

The negative and positive causality of different forms of matter...seems to conceal important truths. It is to be hoped that a more fortunate posterity, on whose happy existence we direct our gaze, will one day discover the universal laws which govern these phenomena, which

issue: “animal.machine.sovereign,” 155–156.

Adrian Johnston, *Prolegomena to Any Future Materialism: Volume Two, A Weak Nature Alone* (Evanston: Northwestern University Press [forthcoming]).

9 Locke, *An Essay Concerning Human Understanding*, 167.

10 Locke, *An Essay Concerning Human Understanding*, 167–168.

11 Immanuel Kant, *Prolegomena to Any Future Metaphysics*, trans. Paul Carus; rev. James W. Ellington (Indianapolis: Hackett Publishing Company, 1977), 5.

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for the moment only appear to us under the form of a still ambiguous harmony.¹²

Pushing off against this brief passage, my leading aim in this context is to foreground and elucidate the “negative... causality of different forms of matter.” Moreover, I strive to do so differently than would Kant—and this in three respects: first, by conceiving of matter in a both realist and materialist fashion at odds with the anti-realism of transcendental idealism, with its “material” objects as mere phenomenal appearances; second, by showing how and why a sufficiently rich account of the negativities of privative causes problematizes the very notion of “universal laws” in the natural sciences as appealed to by Kant here and throughout his corpus (and this precisely insofar as these real absences aid in giving rise to subjects who themselves are not governed by the so-called “universal laws of nature”); and, three, by resolving the ambiguity of Kant’s “still ambiguous harmony” through revealing the fundamentally disharmonious structures and dynamics of material beings. Nonetheless, rather than categorically rejecting Kantian transcendentalism outright, my “transcendental materialism” refuses to write off the subjectivity of transcendental idealism as an empty illusion or ineffective epiphenomenon. Instead, inspired by F.W.J. Schelling and G.W.F. Hegel among others, I seek properly to situate such subjectivity *vis-à-vis* the meta-transcendental conditions of possibility for it as itself transcendental, pinpointing these ontological *Ur*-conditions at the levels of incarnate substantial actualities.¹³

Leaping ahead from the eighteenth century to the present, biological anthropologist Terrence Deacon’s 2012 book *Incomplete Nature: How Mind Emerged From Matter* is an ambitious

12 Kant, “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” 226.

13 Adrian Johnston, *Žižek’s Ontology: A Transcendental Materialist Theory of Subjectivity* (Evanston: Northwestern University Press, 2008), 269–287; Johnston, *The Outcome of Contemporary French Philosophy*; Johnston, *A Weak Nature Alone*.

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attempt to incorporate privations and negations into the still-current modern worldviews prevailing in the empirical and experimental sciences overall. It warrants sustained scrutiny in this setting. Even though, as the preceding remarks already indicate, Baconian-Galilean science and the British empiricism of Locke cohabitate and intermingle during early modernity, Deacon correctly asserts that modern natural science tends to ignore and/or exclude any type of negativity or privation from playing causal roles in its explanations of the physical universe. Framing his endeavor as a neither reductive nor eliminative theory of the emergence of life and mind from matter, he declares:

Each of these sorts of phenomena—a function, reference, purpose, or value—is in some way incomplete. There is something not-there there.

Without this ‘something’ missing, they would just be plain and simple physical objects or events, lacking these otherwise curious attributes.

Longing, desire, passion, appetite, mourning, loss, aspiration—all are based on an analogous intrinsic incompleteness, an integral without-ness.¹⁴

Deacon continues:

As I reflect on this odd state of things, I am struck by the fact that there is no single term that seems to refer to this elusive character of such things.

So, at the risk of initiating this discussion with a clumsy neologism, I will refer to this as an *absential* feature, to denote phenomena whose existence is determined with respect to an essential absence. This could be a state of things not yet realized, a specific separate object of a representation, a general type of property that may or may not exist, an abstract quality, an experience, and so forth—just not that which is

¹⁴ Terrence W. Deacon, *Incomplete Nature: How Mind Emerged From Matter* (New York: W.W. Norton and Company, 2012), 2-3.

actually present. This paradoxical intrinsic quality of existing with respect to something missing, separate, and possibly nonexistent is irrelevant when it comes to inanimate things, but it is a *defining property of life and mind*. A complete theory of the world that includes us, and our experiences of the world, must make sense of the way that we are shaped by and emerge from such specific absences. What is absent matters, and yet our current understanding of the physical universe suggests that it should not. A causal role for absence seems to be absent from the natural sciences.¹⁵

Deacon’s “absentialism” reasonably can be identified as a belated move in the direction of bridging the gap between, on the one hand, Bacon and Galileo (i.e., modern science as running from them, through Isaac Newton, and up to the contemporary conjuncture) and, on the other hand, Locke and Kant specifically apropos the topic of privative/negative causes. Deacon does not address Locke’s or Kant’s reflections on privative/negative causality, instead fingering Locke as guilty of contributing to the dominance of a mechanistic positivism in the natural sciences opposed by absentialism.¹⁶ Deacon’s only other reference to Locke’s philosophy is a passing mention of this empiricist’s metaphor of the *tabula rasa*.¹⁷ However, Deacon explicitly invokes Kant’s depiction of life as per the *Critique of the Power of Judgment*, indicating the indebtedness of his absential conception of organisms to Kant.¹⁸

My response to *Incomplete Nature* is mixed. Starting with what in Deacon’s book inspires enthusiasm in me, I wholeheartedly endorse his call for a new scientific *Weltanschauung* overcoming the narrowness of the worldview of modern science reigning for the past four centuries, a narrowness

15 Deacon, *Incomplete Nature*, 3.

16 Deacon, *Incomplete Nature*, 149.

17 Deacon, *Incomplete Nature*, 124.

18 Immanuel Kant, *Critique of Judgment*, trans. J.H. Bernard (New York: Hafner, 1951) §64-65.
Deacon, *Incomplete Nature*, 302.

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resulting from an almost exclusive focus on the efficient causes operative in the material domains covered by the supposedly fundamental and ultimate discipline of physics. Phenomena associated with the Aristotelian category of final causality (i.e., the teleological structures and dynamics of intentionality broadly construed as exhibited by living organisms and minded subjects) clearly provide Deacon with exemplars of the absential (non-)entities and (non-)events he strives to encompass in an expanded and transformed scientific paradigm. However, by contrast with idealist reactions against the prohibition of appeals to final causes in the natural sciences of modernity (whether along the lines of Leibnizian monadology, Husserlian phenomenology, or whatever else in these sorts of idealist molds), Deaconian absentialism admirably struggles to remain firmly materialist.

As Karl Marx brilliantly perceives in his 1845 “Theses on Feuerbach,” anti-materialist idealisms and dualisms retain their tempting allure so long as the only materialisms on offer are mechanistic or reductive, namely, explanatory schemes granting no place or role for subjects as active kinetic agents resisting the inertness of reifying objectifications.¹⁹ Epitomized in Marx’s time by the eighteenth-century French materialists, such purely “contemplative” materialisms, ceding the domains of subjectivity to idealisms/dualisms and thereby alienating everyone and everything not conforming to the rule of the mechanical and the reduced, continue to shape the scientific thinking Deacon justifiably seeks to challenge.²⁰ Moreover, like Deacon’s unwittingly Hegelian rendition, in the register of a realist naturalism, of the Kantian

19 Karl Marx, “Theses on Feuerbach”, trans. S. Ryazanskaya in *Karl Marx: Selected Writings*, ed. David McLellan (Oxford: Oxford University Press, 1977), 156.

20 Johnston, “This is orthodox Marxism”.
Adrian Johnston, “From Scientific Socialism to Socialist Science: *Natur-dialektik* Then and Now,” *Communism, A New Beginning?*, ed. Slavoj Žižek, London: Verso, 2013.)
Johnston, *The Outcome of Contemporary French Philosophy*.
Johnston, *A Weak Nature Alone*.

conceptualization of life—Hegel’s name is entirely absent in the pages of *Incomplete Nature*—my transcendental materialism is a science-informed materialist position in which the things Deacon labels “absential” are recognized as peculiar realities unto themselves instead of being sacrificed through reduction or elimination by virtue of their foreignness *vis-à-vis* the matter-in-motion of a physics of nothing more than efficient causes.²¹

Deacon arouses additional sympathy in me by adopting what could be characterized, borrowing a term from Alain Badiou, as a “subtractive” approach. With Deacon’s dual allegiances to both (quasi-)naturalist materialism as well as anti-reductivism/eliminativism, he is pushed into embracing a variant of emergentism. Given the further factor of his absentialism, this variant has to be on the strong end of the emergentist spectrum (wherein emergences mark the advents in being of real and really irreducible formations and phenomena).²² However, Deacon does not standardly represent emergences as additions of positive excesses or surpluses with respect to their preceding grounds of existence. Instead, he claims that, “Emergent properties are not something added, but rather a reflection of something restricted and hidden via ascent in scale due to constraints propagated from lower-level dynamical processes.”²³ Deacon’s focus throughout *Incomplete Nature* is on vectors of constraint generation as the keys to a non-mystical emergentism fully compatible with the scientific treatment of nature. According to Deacon, a subtractive emergentism of the absent (rather than a more traditional additive emergentism of the present) perhaps avoids the very potential for reduction or elimination in that, “Absence has no components, and so it can’t be

21 Adrian Johnston, “The Voiding of Weak Nature: The Transcendental Materialist Kernels of Hegel’s *Naturphilosophie*,” *Graduate Faculty Philosophy Journal*, 33:1 (2013), 103–157)
Johnston, *A Weak Nature Alone*.

22 Deacon, *Incomplete Nature*, 138.

23 Deacon, *Incomplete Nature*, 203.

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reduced or eliminated.”²⁴

In line with a number of other thinkers,²⁵ Deacon rightly decouples the idea of natural evolution from any notions in the vein of optimization, perfection, progress, and so on.²⁶ He proceeds to link his non-teleological, deflated conception of evolutionary sequences with his absentialist stress on lack and incompleteness—“As scientists and engineers, we tend to focus on the properties that we discern to be most relevant to our abstract sense of a given function; but life is only dependent on excluding those that are least helpful.”²⁷ The demands and pressures of natural selection require of living creatures only that they survive (not necessarily flourish, thrive, etc.) up to the point at which they manage to pass on their genetic material. This minimal evolutionary requirement of simply lasting (even if just limping along) long enough to reproduce permits sub-optimal beings far from perfection nevertheless to persist in the world (as a German saying has it, *Dumm kann ficken*).²⁸ In connection with this, Deacon’s absentialism leads him to recommend

24 Deacon, *Incomplete Nature*, 204.

25 Humberto R. Maturana and Francisco J. Varela, *The Tree of Knowledge: The Biological Roots of Human Understanding* (Boston: New Science Library, 1987) 115, 117.

Francisco J. Varela, Evan Thompson, and Eleanor Rosch, *The Embodied Mind: Cognitive Science and Human Experience* (Cambridge: MIT Press, 1991), 195–196, 205.

Keith E. Stanovich, *The Robot’s Rebellion: Finding Meaning in the Age of Darwin* (Chicago: University of Chicago Press, 2004), xii, 12–13, 15–16, 20–22, 25, 28, 53, 60, 66–67, 82–84, 122, 142, 186–187, 247.

Adrian Johnston, “The Weakness of Nature: Hegel, Freud, Lacan, and Negativity Materialized,” *Hegel and the Infinite: Religion, Politics, and Dialectic*, ed. Slavoj Žižek, Clayton Crockett, and Creston Davis (New York: Columbia University Press, 2011), 162–163, 168–169.

Adrian Johnston, “Drive Between Brain and Subject: An Immanent Critique of Lacanian Neuro-psychoanalysis,” *Southern Journal of Philosophy* (2013), special issue: “Annual Murray Spindel Conference: Freudian Future(s).”

26 Deacon, *Incomplete Nature*, 86.

27 Deacon, *Incomplete Nature*, 425.

28 Johnston, “Drive Between Brain and Subject”.

an evolutionary-theoretic shift of attention in which, for organisms, what is most vital is the evasion and fending off of the lowest (perhaps zero) degrees of (mal)adaptation and (dys)functionality (rather than a progressive approximation to attainment of some type of perfect optimization).

Particularly from a perspective informed by psychoanalysis, another appealing aspect of Deacon's stance is his emphasis on the centrality of conflict in theorizing emergences. Although I have neither the time at present nor the scientific expertise to do full justice to the details of Deaconian emergentism as meticulously spelled out in his almost six-hundred-page book, I wish to note that Deacon extensively employs throughout *Incomplete Nature* versions of a fundamental distinction between spontaneous (i.e., "orthograde") and non-spontaneous (i.e., "contragrade") dynamic tendencies of material systems (be they physical, chemical, or biological) in his account of different levels of emergent phenomena. More precisely, tensions and clashes between multiple such tendencies are said to be the triggers for sudden, abrupt jumps up emergent levels. In fact, according to Deacon, intra-orthograde conflicts immanently generate contragrade processes. Insofar as he pictures the physical universe as differentiated into a teeming plethora of uncoordinated, unorchestrated entities and systems with distinct orthograde dynamics not automatically in synch with each other—Deacon's vision of material being(s) fairly can be characterized as the Lacanian-Badiouian-Žižekian non-One/not-All of a Cartwrightian "dappled world"²⁹—Deacon renders nature "incomplete" by subtracting from it any presumptively hypothesized foundation or background consisting of harmony, integration, totalization, or wholeness.³⁰

29 Adrian Johnston, "Second Natures in Dappled Worlds: John McDowell, Nancy Cartwright, and Hegelian-Lacanian Materialism," *Umbr(a): The Worst*, ed. Matthew Rigilano and Kyle Fetter (Buffalo: Center for the Study of Psychoanalysis and Culture, State University of New York at Buffalo, 2011), 71–91.
Johnston, *A Weak Nature Alone*.

30 Deacon, *Incomplete Nature*, 223–224, 237, 275–276, 472–473, 549, 551.

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Also in connection with analysis, Jacques Lacan in particular has sustained regular recourse to absences, gaps, holes, lacks, splits, voids, and the like as integral figures within his metapsychology (in association with a plethora of concepts such as the registers of the Real and the Symbolic, desire, drive, love, foreclosure, *manque-à-être*, *l'objet petit a*, the phallus, the Other, the Woman with a definite article and a capital W, *le rapport sexuel*, and the subject itself *qua* $\$$). Therefore, Deacon's absentalist recasting of the sciences perhaps reasonably can be seen as partly answering a provocative question posed by Lacan: "What would a science be that included psychoanalysis?"³¹ In fact, I would go so far as to say that the basic soundness of Lacanian theory, at least for a materialist unwilling to disregard the sciences (such as Lacan himself), hinges on whether a relation to material being(s) and real causal efficacy can be attributed to the absent and the negative in manners coherently integrated with the natural sciences. Hence, Deacon's absentalist project should be of great interest to Lacanians. Even if they do not find his individual efforts to expand the sciences so as to include and account for absences/negativities satisfying and persuasive, they cannot afford to turn blind eyes to the issues with which he is wrestling bravely.

Before moving on to an expression of the negative side of my ambivalent response to Deacon's *Incomplete Nature*, a couple of additional merits of his position deserve recognition. These involve his fine balancing acts between, as I would phrase it, the scientific and the more-than-scientific as well as the material and the more-than-material. As regards science, Deacon does not allow his strong-emergentist anti-reductivism to lead him into a disguised, pseudo-scientific

31 Jacques Lacan, "Les quatre concepts fondamentaux de la psychanalyse: Compte rendu du séminaire 1964," *Autres écrits* [ed. Jacques-Alain Miller], Paris: Éditions du Seuil, 2001, pg. 187)

Jacques Lacan, *The Seminar of Jacques Lacan, Book XI: The Four Fundamental Concepts of Psychoanalysis, 1964* [ed. Jacques-Alain Miller; trans. Alan Sheridan (New York: W.W. Norton and Company, 1977), 7.

Johnston, "Turning the Sciences Inside Out," 105-122.

Johnston, *The Outcome of Contemporary French Philosophy*.

dualism (or, more accurately, unqualified anti-monism). He carefully maintains a dialectical interplay of continuities and discontinuities between the many distinct layers and strata of nature as these are reflected in the divisions of labor between the different branches and sub-branches of the natural sciences.³² More specifically, Deacon advocates against basing theories of life and mind on physics as the presumably rock-bottom grounding level of explanation for any and every materialism wedded to the sciences of nature³³ (similarly, he considers ventures, such as Roger Penrose's, to account for sentience and sapience through appeals to quantum physics superfluous at best³⁴). However, although Deacon conceives of both the organic and the mental as ontologically as well as epistemologically irreducible to sub-organic disciplinary dimensions, he is careful to insist that his brand of emergentism does not conjure up or entail "some disconnection from determinate physics."³⁵ That is to say, on the one hand (i.e., discontinuity *vis-à-vis* physics), living and minded beings exhibit degrees of independence from the material universe of efficient causes studied by physicists. But, on the other hand (i.e., continuity *vis-à-vis* physics) and at the same time, these beings by no means can and do drastically violate the patterns and regularities seen to hold for the physical real. Appropriating a distinction from Kant's deontological ethics, Deacon's sentient and sapient organisms always act in conformity with physics' "laws of nature," although they far

32 Deacon, *Incomplete Nature*, 155.

33 Deacon, *Incomplete Nature*, 138.

34 Deacon, *Incomplete Nature*, 289–290.

Adrian Johnston, "Naturalism or anti-naturalism? No, thanks—both are worse!": Science, Materialism, and Slavoj Žižek," *La Revue Internationale de Philosophie*, (2012) special issue: "On Slavoj Žižek," 321–346.

Adrian Johnston, "A Critique of Natural Economy: Quantum Physics with Žižek," *Žižek Now*, ed. Jamil Khader and Molly Rothenberg (Cambridge: Polity Press, 2013).

Adrian Johnston, *Adventures in Transcendental Materialism: Dialogues with Contemporary Thinkers* (Edinburgh: Edinburgh University Press, 2013).

35 Deacon, *Incomplete Nature*, 480.

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from always act according to intentions directly determined or dictated by these “laws.” I employ these scare quotes because Deacon, correctly in my estimation, believes that some patterns and regularities taken to be inviolable (i.e., to be unbreakable “laws of nature”) on the basis of one or more scientific fields of investigation do not universally hold without exception for all levels and tiers of real being.³⁶

As regards matter, Deaconian absentialism, like my transcendental materialism, envisions full-fledged subjectivity as the paradigmatic instance of an immanent natural-material genesis of a denaturalized, more-than-material transcendence-in-immanence. Deacon articulates this theme thusly:

...autonomy and agency, and their implicit teleology, and even the locus of subjectivity, can be given a concrete account. Paradoxically, however, by filling in the physical dynamics of this account, we end up with a non-material conception of organism and neurological self, and by extension, of subjective self as well: a self that is embodied by dynamical constraints.

But constraints are the present signature of what is absent. So, surprisingly, this view of self shows it to be as non-material as Descartes might have imagined, and yet as physical, extended, and relevant to the causal scheme of things as is the hole at the hub of a wheel.³⁷

The adjective “concrete” in the first sentence of this quotation signals Deacon’s intention to anchor his absentialist emergentism in empirical determinations of physical being (as per physics, chemistry, biology, etc.). By his lights, the natural sciences uncover the effective existence of multiple processes of self-limitation (i.e., the idea-motif of “constraint” so pivotal for *Incomplete Nature*) internally generated within and between emergent strata of material structures and phenomena. What is more, Deacon construes such constraints

³⁶ Deacon, *Incomplete Nature*, 237.
Johnston, “Second Natures in Dappled Worlds,” 81-86.
Johnston, *A Weak Nature Alone*.

³⁷ Deacon, *Incomplete Nature*, 484.

as paradoxical incarnations of what is absent by virtue of the dynamics of constraining, as not present due to avoidances, exclusions, suppressions, and the like. The apparent paradox, akin to the Hegelian dialectics at the heart of the conceptual figure of limit per se (here, constraint in general), is that any such incarnation is a presence of absence, a convergence of the (seeming) opposites of presence and absence (as Deacon words it above, “constraints are the present signature of what is absent”). That said, if, therefore, absences are the negatives/negations of presences *qua* material embodiments, then the constraints Deacon claims are intra-systemic self-limitations produced within and out of given configurations of material bodies are (no-)things “in matter more than matter itself” (to paraphrase Lacan).

Of course, as Deacon warns, this “non-material” (what I am labeling as “more-than-material”) quality of “dynamical constraints,” themselves internal yet irreducible to the physical mediums of their instantiations, is oddly similar to but nonetheless crucially different from the immaterial as posited in Cartesian metaphysics. And yet, the relative pertinence of Descartes to Deaconian absentialism is slightly more complicated and nuanced than Deacon’s casual reference in the preceding passage indicates. The second of Descartes’ six *Meditations on First Philosophy* arguably amounts to the most important statement of his theory of subjectivity, the stating of which is one of the essential founding moments of the modern era in its entirety. On a quite defensible interpretation, Descartes slides therein from a verb-like *Cogito* (as in “*Cogito, ergo sum*”) at the opening of the “Second Meditation” to a noun-like *res cogitans* (i.e., a thinking substance envisioned in conformity with a substance metaphysics pre-dating Cartesian modernity) later in the same chapter³⁸ (a slippage famously denounced as illegitimate by Kant in his “Paralogisms of Pure Reason,” namely, his assault on Descartes-inspired rational psychology as part of his *Critique of Pure Reason*’s “Transcendental

38 René Descartes, *Meditations on First Philosophy*, trans. Donald A. Cress (Indianapolis: Hackett, 1993), 17–24.

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Dialectic”³⁹). Put differently, Descartes’ shift to talking about a “thing that thinks” amounts to replacing a model of subjectivity as an event (or, more accurately, series of events) with one of it as an entity. In other words, Descartes begins the “Second Meditation” by alighting upon a kinetic subject (i.e., the *Cogito* as a dynamic, event, process, verb, etc.) and ends it with the fixed metaphysical objectification of a static “subject” (i.e., the *res cogitans* as an entity, noun, thing, substance, etc.). In short, the becoming of the *Cogito* is eclipsed by the being of the *res cogitans*.⁴⁰

Although Deacon is doubly distant from the substance metaphysics of Cartesian rational psychology—this metaphysics involves not only an idealist-*qua*-anti-materialist ontological dualism, but also a non-absentialist emphasis on the presence of immaterial substance(s)—he is closer to Descartes than he realizes. More precisely, Deacon’s rooting of subjects in ongoing dynamics of constraining is amenable to being depicted as a non-idealist, quasi-monist narrative concerning the material surfacing of non/more-than-material, *Cogito*-like subjectivity. Such a depiction further underscores the proximity between Deaconian absentialist emergentism and transcendental materialism.

As for the negative side of my mixed response to *Incomplete Nature*, I detect several problems with Deacon’s framework. To begin with, Deacon presents his absentialist brand of strong emergentism as adequately addressing the Chalmers-style “hard problems”⁴¹ so central for debates in Anglo-American Analytic philosophy of mind (i.e., problems about how sentience and sapience emerge from matter).⁴² However, it is far from clear to me whether and how he achieves this. Even if I am partly responsible for this lack of clarity due to my insufficient expertise in each and every branch of natural

39 Kant, *Critique of Pure Reason*, A341/B399-A405/B432.

40 Johnston, *Žižek’s Ontology*, 12–13.

41 David J. Chalmers, *The Conscious Mind: In Search of a Fundamental Theory*, (Oxford: Oxford University Press, 1997), xii–xiii.

42 Deacon, *Incomplete Nature*, 6–8.

science mobilized by Deacon, his evident failure to make a truly convincing case transparent to a scientifically literate reader is troubling. Furthermore, as someone professionally trained in philosophy, I simply do not see, anywhere in the pages of *Incomplete Nature*, direct and complete answers to questions about the transition from non-conscious bodies (whether inorganic or organic) to conscious awareness and/or self-conscious reflectivity.

Instead, what I do see—Deacon certainly deserves partial credit apropos these hard-problem questions—is a careful, painstaking cataloging of many necessary conditions at the levels of the physical, the chemical, and the biological at least making possible (even if not actual) the genesis of sentience and sapience. That is to say, *Incomplete Nature* manages, at a minimum, to get halfway to a robust, exhaustive reckoning of a non-reductive/eliminative sort with the perennial mind-body mystery. But, Deacon’s book nonetheless remains incomplete in a sense other than that signaled by its title—and this insofar as necessary and sufficient conditions are not the same things. On my reading, the in/de-completing of nature artfully and knowledgably effectuated by Deacon amounts to a gratifyingly thorough delineation of how and why the physical universe is a place capable in principle of accommodating within itself entities and events irreducible to the mechanics of the efficient causality of moving bodies alone (for example, the absential structures and dynamics associated with the cognitions, emotions, and motivations of human minds). As the epigraph to the fifth chapter (entitled “Emergence”), a translation slightly modified by Deacon taken from Ilya Prigogine and Isabelle Stengers, has it, “we need an account of the material world in which it isn’t absurd to claim that it produced us.”⁴³ And yet, explaining via necessary conditions the non-absurdity of the immanent natural and material emergence of the denaturalized and more-than-material (first and foremost, recursive and reflexive subjectivity as a

43 Deacon, *Incomplete Nature*, 143.

Ilya Prigogine and Isabelle Stengers, *La nouvelle alliance: Métamorphose de la science* (Paris: Éditions Gallimard, 1979,) 278.

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transcendence-in-immanence) is not, by itself, tantamount to plausibly explaining via sufficient conditions the actual reality of this emergence.⁴⁴

As introductory logic textbooks spell out, the difference between a necessary and a sufficient condition can be understood by contrasting two different forms of conditional claims: “ $\sim A \rightarrow \sim B$ ” (“if not-A, then not-B”) versus “ $A \rightarrow B$ ” (“if A, then B”). A necessary condition is that without which something else will not follow. In the absence of the antecedent “A” (i.e., “not-A”), a specific corresponding consequent “B” will not be the case (i.e., “not-B”)—in formal terms, “ $\sim A \rightarrow \sim B$.” By contrast, a sufficient condition is that with which something else will follow. In the presence of the antecedent “A,” a specific corresponding consequent “B” will be the case—in formal terms, “ $A \rightarrow B$.” My judgment at this juncture is that Deacon’s variant of emergentism tends to identify incompletenesses in the absence of which irreducible kinds of sentience and sapience would not be possible. Worded otherwise, if material nature were complete (i.e., not-incomplete), then more-than-material, denaturalized subjects would not and could not arise out of this world. I can render this formally by letting “C” stand for “complete nature” and “S” for “subjectivity” (the latter in the anti-reductive/eliminative sense of a strong emergentism). Deacon’s “incomplete nature” thus would be formally symbolized as “ $\sim C$.” Hence, the prior phrasing “if material nature were complete (i.e., not-incomplete), then more-than-material, denaturalized subjects would not and could not arise out of this world” can be symbolically represented as the claim “ $\sim\sim C \rightarrow \sim S$,” with the double-negation “ $\sim\sim C$ ” being equivalent to “not-incomplete nature” (i.e., complete nature as itself the negation *qua* logical opposite of Deacon’s incomplete nature). But, as readily can be apprehended here, “ $\sim\sim C \rightarrow \sim S$ ” (i.e., “if complete nature, then no subjectivity”) is not equal to “ $\sim C \rightarrow S$ ” (i.e., “if incomplete nature, then subjectivity”).

Admittedly, certain antecedents sometimes can be both necessary and sufficient conditions at one and the same time.

44 Johnston, *The Outcome of Contemporary French Philosophy*.

However, when an antecedent functions as a necessary but not sufficient condition for a given consequent, this entails that such an antecedent has two aspects: First, as indicated in the preceding paragraph, without this antecedent, the given consequent cannot be the case (again, “ $\neg A \rightarrow \neg B$ ”); Second, this antecedent, without other antecedents as auxiliary additional conditions, cannot by itself bring about the given consequent at issue being the case. As regards this second aspect, antecedents “X,” “Y,” and “Z,” for instance, might be required, taken together with “A,” so as to bring about consequent “B.” If so, then, although “A” alone is not sufficient for “B” (i.e., “ $A \rightarrow B$ ” is false), “ $(A \wedge X \wedge Y \wedge Z) \rightarrow B$ ” (“if A and X and Y and Z, then B”) can be true. In this illustration, the antecedent “A” on its own is a necessary but not sufficient condition for the consequent “B,” whereas the collective antecedent-set “ $(A \wedge X \wedge Y \wedge Z)$ ” is the sufficient condition for “B.”

From my perspective, Deacon’s absential incompletenesses of nature constitute some, but not all, of the set of antecedent conditions that, taken together, are the sufficient (over and above merely necessary) conditions for a strongly emergent and irreducible subject qualifying as self-determining, as both autonomous and free-standing. Bluntly stated, subjective freedom proper is equivalent neither to the bare absence of sub-subjective natural-causal determination (i.e., sheer indeterminism as the lone reign of arbitrariness, contingency, and so on) nor to intentional states of consciousness in either the philosophical or quotidian senses of the adjective “intentional” (i.e., whether as the capacity of sentient or sapient mindedness to be “about” other things as its referents, in the philosophical sense of the intentional as referential aboutness, or the teleological directedness of organisms animated by needs, wants, and the like toward yet-to-be-attained objects or circumstances as ends or goals, as in the quotidian sense of the intentional as teleological motivation). The absence of determinism by itself does not automatically equal the presence of freedom; at most, it amounts to there being mere randomness, which is perfectly possible in systems totally devoid of anything resembling the sorts of human selves

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and subjects Deacon wishes to embrace in his framework. Similarly, whether in the technical or everyday sense of intentionality, a creature can be intentional without thereby also being free *qua* self-determining—and this because its intentions, as either referential aboutnesses or teleological motivations, can be heteronomously determined by any number of endogenous and/or exogenous variables amenable to normal causal analyses. *Contra* Deacon, simply being able to call before conscious awareness absences (as states of affairs not present) does not, on its own, establish the efficacious existence of actual freedom as realized by the most denaturalized and self-reflexive dimensions of the subject.

Before proceeding further, I need to voice another line of criticism with respect to Deaconian absentialism. My main complaint in this critical vein is that Deacon too hastily lumps together a disparate assortment of distinct types of non-presences under the terminological big tent of “the absential.” Some of the passages from *Incomplete Nature* quoted earlier already reveal this tendency of his to run roughshod over important differences between the heterogeneous kinds of absences he thereby groups together. And, in the glossary to his book, Deacon defines the term “absential” as “The paradoxical intrinsic property of existing with respect to something missing, separate, and possibly nonexistent.”⁴⁵ Although the “missing, separate, and possibly nonexistent” share in common the trait of being non-present (i.e., not materialized in a physical and spatio-temporal *hic et nunc*), this alone does not and should not license ignoring the non-negligible features distinguishing diverse forms of non-presence from one another.

Returning once more to Kant’s philosophy will assist in beginning to elucidate this last reservation of mine as regards Deacon’s *Incomplete Nature*. Immediately before the first *Critique*’s “Transcendental Dialectic,” in the closing pages of “The Amphiboly of Concepts of Reflection,” Kant completes his “Transcendental Analytic” with an analysis of

45 Deacon, *Incomplete Nature*, 547.

four categories of “nothing” (*Nichts*). These four are: one, *ens rationis* (“Empty concept without object” [*Leerer Begriff ohne Gegenstand*]), two, *nihil privativum* (“Empty object of a concept” [*Leerer Gegenstand eines Begriffs*]), three, *ens imaginarium* (“Empty intuition without object” [*Leere Anschauung ohne Gegenstand*]), and, four, *nihil negativum* (“Empty object without concept” [*Leerer Gegenstand ohne Begriff*]).⁴⁶

Indicating how Kant defines each of these negative categories, the *ens rationis* is associated with the universal negative (“no x is Φ ” [$\forall x \sim \Lambda x$]) in logical quantification, namely, “no” or “none” in addition to the “every” or “all” of the universal affirmative (“every x is Φ ” [$\forall x \Phi x$]) as well as the “one,” “many,” and similar non-universal qualifying terms of both the affirmative and negative existential quantifiers (i.e., “some x are Φ ” [$\exists x \Phi x$] and “some x are not Φ ” [$\exists x \sim \Phi x$], with “some” here meaning “at least one”). Kant’s description signals that the *ens rationis*, as an “empty concept without object” (*leerer Begriff ohne Gegenstand*), is the concept of “nothing” in the sense of a conceptual determination precisely of the absence or lack of any corresponding object (i.e., no-thing as no object *als Gegenstand*, as no *Objekt* of spatio-temporal phenomenal experience). In this sense, the prime example of nothing *qua ens rationis* is zero in mathematics (an idea latched onto as of sweeping import by Deacon for his absentialism⁴⁷ as well as by Lacan and Jacques-Alain Miller in connection with a psychoanalytic conceptualization of subjectivity appealing to Gottlob Frege’s theory of numbers⁴⁸). With his overarching

46 Immanuel Kant, *Kritik der reinen Vernunft*, 1: *Werkausgabe, Band III*, ed. Wilhelm Weischedel (Frankfurt am Main: Suhrkamp, 1968), A290/B346-A292/B349
Kant, *Critique of Pure Reason*, A290/B346-A292/B349.

47 Deacon, *Incomplete Nature*, 8-13.

48 Lacan, *The Seminar of Jacques Lacan, Book XI*, 226.
Jacques Lacan, *Le Séminaire de Jacques Lacan, Livre XII: Problèmes cruciaux pour la psychanalyse, 1964-1965* [unpublished typescript], session of June 9th, 1965.
Jacques Lacan, *Le Séminaire de Jacques Lacan, Livre XIII: L’objet de la psychanalyse, 1965-1966* [unpublished typescript], sessions of April 20th, 1966, June 8th, 1966.

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transcendental idealism's core distinction between noumenal things-in-themselves (sought after in epistemological vain by reason [*Vernunft*]) and phenomenal objects-as-appearances (accessible from inside the "limits of possible experience" [*Erfahrung*] co-constituted by the dual action of the faculties of intuition [*Anschauung*] and the understanding [*Verstand*]), Kant subsumes his noumena, as named by and featuring in his theoretical philosophy, under the heading of the *ens rationis*. Related to this, the other three categories of nothing *als Nichts* are, for Kant, all intra-phenomenal. That is to say, the category of the *ens rationis* is able to contain within itself, when specifically determined as the concept of the noumenal, a mark or indication of what presumably lies beyond the limits of possible experience. By contrast, the remaining three types of nothingness are negations pertaining strictly to the phenomenal, namely, to configurations and contents internal and/or intrinsic to the limits of possible experience.⁴⁹

As for the second of the four categories of nothing(ness), the *nihil privativum*, this is roughly synonymous with the privative *à la* Locke. Kant defines it in a single sentence—"Reality is *something*; negation is *nothing*, namely, a concept of the absence of an object, such as shadow, cold (*nihil privativum*)."⁵⁰ As its name suggests, the *nihil privativum* is a privation relative to a positivity: Darkness is a privation of light; Coldness is a privation of heat. Thus, these sorts of negations are parasitic upon already-given experiential/phenomenal contents (light, heat, etc.).

The third negative category, the *ens imaginarium*, refers to Kant's preceding "Transcendental Aesthetic." To be specific,

Jacques Lacan, *Le Séminaire de Jacques Lacan, Livre XVI: D'un Autre à l'autre, 1968-1969*, ed. Jacques-Alain Miller (Paris: Éditions du Seuil, 2006), 48-49, 56-61.

Jacques-Alain Miller, "Suture (elements of the logic of the signifier)" trans. Jacqueline Rose, *Screen*, 18:4 (1977/1978), 24-34.

Adrian Johnston, *Time Driven: Metapsychology and the Splitting of the Drive*, Evanston: Northwestern University Press, 2005, pg. 110-117.

49 Kant, *Critique of Pure Reason*, A290-291/B347.

50 Kant, *Critique of Pure Reason*, A291/B347.

this nothingness is that of the two “pure forms of intuition,” namely, space as “outer sense” and time as “inner sense.”⁵¹ These formal features of spatio-temporal experience amount to nothing as no-thing (or, more precisely, no object *als Gegenstand oder Objekt*) because, as *apriori* and universal conditions for all intuited contents, they are distinct from any and every particular intuited content (i.e., all determinate objects of experience). Simply put, the forms of intuition are distinct from its contents. Hence, the *ens imaginarium* is identified as “empty intuition without object.”⁵²

Finally, the fourth negative category, the *nihil negativum*, is nothing other than a self-contradictory concept. Kant’s chosen example is that of “a two-sided rectilinear figure”⁵³ (a problematic example, as Lacan’s commentary on the Kantian *nihil negativum* will remark). Another illustration would be the (non-)concept of a square circle. Sticking with this second example, the *nihil negativum* is an “empty object without concept” insofar as the concept’s self-contradiction (i.e., the mutual exclusivity between the concepts of squareness and circularity) annuls it, resulting in a non-concept (one cannot conceptualize a synthesis of squareness and circularity). And, insofar as a phenomenal object of experience is, by Kantian definition, a combination of intuitions and concepts,⁵⁴ a non-concept entails a non-object, namely, nothing as no-thing *qua* the void of an inconceivable (non-) object (phenomenological confirmation of this resides in one’s inability to envision mentally, in picture thinking, a square circle as an intuitable content).

In the paragraph concluding “The Amphiboly of Concepts of Reflection” (and therewith the “Transcendental Analytic” as a whole), Kant compares and contrasts the four categories of nothing (*Nichts*) with each other. He states:

51 Kant, *Critique of Pure Reason*, A22-41/B37-58.

52 Kant, *Critique of Pure Reason*, A291/B347.

53 Kant, *Critique of Pure Reason*, A291/B348.

54 Kant, *Critique of Pure Reason*, A92-93/B124-126, A103-104, B137-138.

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We see that the *ens rationis* (1) is distinguished from the *nihil negativum* (4), in that the former is not to be counted among possibilities because it is mere fiction [*Erdichtung*] (although not self-contradictory), whereas the latter is opposed to possibility in that the concept cancels itself [*sich selbst aufhebt*]. Both, however, are empty concepts. On the other hand, the *nihil privativum* (2) and the *ens imaginarium* (3) are empty *data* for concepts [*leere Data zu Begriffen*]. If light were not given to the senses we could not represent darkness, and if extended beings were not perceived we could not represent space. Negation and the mere form of intuition, in the absence of a something real [*ohne ein Reales*], are not objects [*keine Objekte*].⁵⁵

The insurmountable difference between the first and fourth categories upon which Kant insists here already is underlined in the earlier “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” in which he says, “the *nihil negativum* cannot be expressed by zero = 0, for this involves no contradiction.”⁵⁶ In other words, the *ens rationis*, an example of which in the first *Critique* is, as seen above, the mathematical concept of zero, is not self-contradictory, unlike the *nihil negativum* (examples of which include two-sided rectilinear figures and square circles). Arguably, these first and fourth categories, although both concepts (even if one of them, the *nihil negativum*, is auto-annulling), represent two distinct varieties of “emptiness,” one consistent (the *ens rationis*) and the other inconsistent *qua* self-contradictory (the *nihil negativum*). One can, does, and must calculate with zero as part of the coherent conceptualizations of mathematics as a formal science (which, like philosophy itself, operates in the epistemological register of the synthetic *a priori*⁵⁷); Kant can and does conceptually construct the philosophical apparatus of his transcendental idealism in a systematic fashion partly

55 Kant, *Critique of Pure Reason*, A292/B348–349.

56 Kant, “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” 212.

57 Kant, *Prolegomena to Any Future Metaphysics*, 11–20.

relying upon the non-self-contradictory notion of noumena (as “thinkable but not knowable”⁵⁸ instances of the *ens rationis*). Two-sided rectilinear figures and square circles, as neither thinkable nor knowable within the parameters of Kant’s system, do not lend themselves, in Kantian eyes, to comparably productive intellectual labors (although, following Lacan’s indications, non-Euclidean geometries, imaginary numbers, and post-Newtonian physics all furnish potent refutations of critical philosophy’s pretensions to be itself, in its original eighteenth-century version, a universally valid, trans-historical epistemology).

In the second half of the preceding quoted paragraph from the first *Critique*, Kant places the second and third categories of nothing(ness), the *nihil privativum* and the *ens imaginarium* respectively, side-by-side. I already have unpacked much of what Kant conveys here in my prior glosses of these two categories. Specifically as regards the *ens imaginarium*, not only, as noted, does Kant posit a co-dependency between the percepts of intuition and the concepts of the understanding as far as experience and its objects are concerned—he also posits a co-dependency between the pure forms and the object-contents of the faculty of intuition (as testified to by the last two sentences of the concluding paragraph of “The Amphiboly of Concepts of Reflection”). Although, according to the “Transcendental Aesthetic,” space and time are ideal *apriori* conditions of possibility for experience, without real *qua* empirical experiences of determinate spatio-temporal object-contents, these pure forms of outer and inner sense would remain unexperienced and, hence, unrepresented. Therefore, according to Kant, just as there can be no experience of objects without the ideal *apriori* conditions of space and time, so too can there be no theoretical representations of space and time without experiences of spatio-temporal objects.

As for the *nihil privativum*, this second category of nothing is foreshadowed in Kant’s “Attempt to Introduce the

58 Kant, *Critique of Pure Reason*, Bxxvi-xxvii, A248-249, A284-285/B340-341.

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Concept of Negative Magnitudes Into Philosophy.” Therein, Kant proposes:

A negation, in so far as it is the consequence of a real opposition, will be designated a *deprivation* (*privatio*). But any negation, in so far as it does not arise from this type of repugnancy, will be called a *lack* (*defectus, absentia*). The latter does not require a positive ground, but merely the lack of such a ground. But the former involves a true ground of the positing and another ground which is opposed to it and which is of the same magnitude. In a body, rest is either merely a lack, that is to say, a negation of motion, in so far as no motive force is present, or alternatively, such rest is a deprivation, in so far as there is, indeed, a motive force present, though its consequence, namely the motion, is cancelled by an opposed force.⁵⁹

Of course, this 1763 essay is perhaps best known for the central distinction between “logical contradiction (*Widerspruch*)” and “real opposition (*Opposition*)” with which it opens.⁶⁰ In an anti-Hegelian gesture *avant la lettre*, the pre-critical Kant rules out the possibility of contradictions inhering within reality itself. This exclusion subsequently becomes axiomatic for the ostensible proof of the philosophical superiority of the critical epistemology of transcendental idealism via the demonstrative power of the “dialectic of pure reason” (i.e., the “Transcendental Dialectic”) in the second half of the *Critique of Pure Reason*. This is especially evident in the four “antinomies of pure reason” catalyzed by the “cosmological idea of reason,” with the argumentative force of these relying on the assumption that the noumenal being of things-in-themselves, whatever else it might be, is devoid of contradictions. According to this assumption, insofar as the faculty of reason (*Vernunft*) encounters contradictory antinomies, it remains

59 Kant, “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” 217.

60 Kant, “*Versuch, den Begriff der negativen Grössen in die Weltweisheit einzuführen*,” 783–784.
Kant, “Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy,” 211–212.

out of contact with the ontological real of *das Ding an sich*, stuck shadow boxing in the theater of enclosed subjective cognition with the contradictory constructs and by-products of its own intra-ideational activities.⁶¹

Particularly by the time of the first *Critique*, the adjective “real” in “real opposition” has to be taken with several grains of salt. As observed, Locke the empiricist, in his characteristically inconsistent, non-systematic manner, remains agnostic about the potential extra-mental reality of privative causes. At least on a Hegelian reading, Kant the empiricism-inspired critical philosopher of transcendental idealism appears to be, so to speak, an atheist rather than an agnostic on this matter. This is true to the extent that he presupposes as an axiom the thesis according to which being *an sich* is free of antagonisms, antinomies, contradictions, paralogisms, and the like. Systematic consistency seemingly would dictate a principled ontological agnosticism on Kant’s part apropos any and every possible determinate attribute potentially predicable of the noumenal being of things-in-themselves, including that of freedom from the sorts of deadlocks and impasses manifesting themselves in thought as logical contradictions and/or transcendental dialectics.

That said, within the constraining scaffolding of Kantian transcendental idealism, what is (empirically) “real” (for instance, real opposition) is not the non-subjective objectivity of thingly beings in and of themselves, but, instead, the passive reception (in a receptivity that is subjectively ideal nonetheless) of spatio-temporal objects of experience at the level of intuition (with the addition of the necessary and universal concepts and categories of the understanding). Obviously, this anti-realist dimension is established by Kant in the “Transcendental Aesthetic” at the very beginning of the first *Critique*, with this section’s insistence on the strict ideality of space and time.⁶² Kant later, in “The Antinomy of

61 Kant, *Critique of Pure Reason*, A405-567/B432-595.
Johnston, *Žižek’s Ontology*, 128-144.

62 Kant, *Critique of Pure Reason*, A27-28/B43-44, A35-36/B52-53, B69-71.

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Pure Reason,” contends that the rational dialectics swirling around the cosmological idea of reason provide further proof of the exclusively ideal nature of the spatial and the temporal.⁶³ Again, this purported proof rests on the presumption, repeatedly attacked frontally by Hegel, that being *an sich*, without subjectivity and its mediations, is untouched and unburdened by the negativities of such dialectics. Additional evidence bearing witness to this (dogmatic) ontological assumption of Kant’s is to be found in his above-quoted closing remarks about the four categories of nothing at the end of the first *Critique*’s “Transcendental Analytic”: Only the consistent emptiness of the *ens rationis*, and not the inconsistent emptiness of the self-contradictory *nihil negativum*, is suitable for a conceptual determination of noumena.

But, what happens if one does not accept Kantian transcendentalism? What if, whether prompted by Hegelian or other counter-arguments, one repudiates the anti-realism of subjective idealism as untenable and internally self-subverting or auto-deconstructing? In such a scenario, what becomes of Kant’s meticulous analyses of nothing(ness)? Even if one accepts as decisively devastating the full sweep of Hegel’s sustained Kant critique, as I do, such a critique is far from entailing a wholesale repudiation of the rich resources of Kantian philosophy (neither for Hegel nor for someone like me). Kant’s reflections on nothing(ness) can and should be extracted from the limiting frame of transcendental idealism. In line with the earlier critical engagement with Deacon’s absentialism, I believe that a Kantian-style sensitivity to distinct varieties of the privative/negative is an essential component of a strong-emergentist theory of transcendental subjectivity as itself arising from and being grounded in meta-transcendental layers of pre/non-subjective substances. In fundamental solidarity with Hegel and Deacon, among others, I seek to advance the formulation of such a theory through linking the genesis of the irreducible subject of transcendentalism to specific types of negativities (as absences, antagonisms, etc.).

63 Kant, *Critique of Pure Reason*, A506-507/B534-535.

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In so doing, I conceive of these negativities within the space of a philosophical triangle formed by the three corners of historical/dialectical materialism, realism (including that of Hegel’s misleadingly [self-]labeled “absolute idealism”), and the quasi-naturalism of a self-denaturalizing nature—that is to say, outside the enclosure of the subjective idealism of Kant’s anti-realist, anti-materialist transcendentalism. Moreover, I consider philosophical recourse to both Freudian-Lacanian psychoanalysis and the natural (especially life) sciences as disciplinary allies in this endeavor to be indispensable.⁶⁴

Perhaps controversially, I interpret the full arc of Lacan’s teachings from the 1930s to the start of the 1980s as unfolding along the lines of the triad of dialectical materialism, realism, and quasi-naturalism (I defend this reading elsewhere⁶⁵). Assuming for the moment that I have plausible justifications for this rather contentious view of Lacan, his explicit treatments of Kant’s categorizations of the negative set the stage for my transcendental materialist furtherance of Deacon’s similar absentalist emergentism. In the third seminar on the topic of *The Psychoses* (1955-1956), Lacan mentions Kant on negative magnitudes twice: first, to insist on Judge Daniel Paul Schre-

64 Johnston, *Žižek’s Ontology*, 269-287.

Adrian Johnston, “Slavoj Žižek’s Hegelian Reformation: Giving a Hearing to *The Parallax View*,” *Diacritics: A Review of Contemporary Criticism*, 37:1 (2007), 3-20.

Johnston, *The Outcome of Contemporary French Philosophy*.

Johnston, *A Weak Nature Alone*.

65 Johnston, *Žižek’s Ontology*, 270-273.

Johnston, “Slavoj Žižek’s Hegelian Reformation,” 3-20.

Adrian Johnston, *Badiou, Žižek, and Political Transformations: The Cadence of Change*, Evanston: Northwestern University Press, 2009, pg. 119-124)

Johnston, “The Weakness of Nature,” 163-176.

Adrian Johnston, “Reflections of a Rotten Nature: Hegel, Lacan, and Material Negativity,” *Filozofski Vestnik*, 33:2 (2012), special issue: “Science and Thought”, ed. Frank Ruda, 23-52.

Adrian Johnston, “The Object in the Mirror of Genetic Transcendentalism: Lacan’s *Objet petit a* Between Visibility and Invisibility,” *Continental Philosophy Review* (2013), special issue: “Reading Seminar XIII: *The Object of Psychoanalysis*”, ed. Thomas Brockelman and Dominiek Hoens.

Johnston, “Drive Between Brain and Subject”.

Johnston, *Adventures in Transcendental Materialism*.

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ber's uses of the German words *Aufhebung* (as cancellation) and *Unsinn* (nonsense) in his *Memoires of My Nervous Illness* as having richer meanings than a Kantian "pure and simple absence, a privation of sense"⁶⁶; and, second, to make a few suggestions about the presenting-while-negating gesture of *Verneinung* (negation) as per Freud's 1925 essay "Negation."⁶⁷ However, over the course of three consecutive academic years from 1961 to 1964, Lacan, during a particularly pivotal period of his intellectual itinerary, returns several times to Kant's ideas about the negative; the ninth, tenth, and eleventh seminars lay out a distinctive Lacanian appropriation of this sector of the Kantian philosophical apparatus.

Lacan's most developed and detailed pronouncements on negativity *à la Kant* are to be found in his ninth seminar on *Identification* (1961-1962). Lacan zeros in on the category of the *nihil negativum* ("Empty object without concept" [*Leerer Gegenstand ohne Begriff*]) in particular. To begin with, he observes that Kant's illustration of an "empty concept without object" through reference to a two-sided rectilinear figure is self-undermining. This is because it reveals how the critical philosophy's notion of space is tethered to Euclidean and Newtonian assumptions about it. Rather than being universally *a priori* features of spatiality transcending the history of ideas, as Kant purports, Euclid's and Newton's perspectives have proven to be historically relative and far from absolute. As noted earlier, the past two-and-a-half centuries have seen mathematical and scientific revolutions dethroning the worldviews of the formal and empirical disciplines known to Kant within the confines of his era of the late-eighteenth century. Within the expanded parameters of non-Euclidean geometries, two-sided rectilinear figures are not necessarily instances of Kant's *nihil negativum*.⁶⁸

66 Jacques Lacan, *The Seminar of Jacques Lacan, Book III: The Psychoses, 1955-1956*, ed. Jacques-Alain Miller, trans. Russell Grigg (New York: W.W. Norton and Company, 1993), 122.

67 Lacan, *The Seminar of Jacques Lacan, Book III*, 155-156.

68 Jacques Lacan, *Le Séminaire de Jacques Lacan, Livre IX: L'identification, 1961-1962* [unpublished typescript], session of February 28th, 1962.

Related to this, the square root of negative one (i.e., i as an imaginary number), to take another point of reference routinely gestured at by Lacan, seems to short-circuit the Kantian distinction between the first and fourth categories of nothing, namely, between the *ens rationis* (“Empty concept without object” [*Leerer Begriff ohne Gegenstand*]) and the *nihil negativum*. As in the *ens rationis*, whose examples include zero and noumena, the square root of negative one can be consistently cognized and employed in coherent bodies of concepts. But, as in the *nihil negativum*, one of whose examples is a square circle, the combination of negative numbers and the operation of the square root evidently brings together contradictory conceptual determinations with no corresponding phenomenal objects of possible experience. If, for instance, both zero and the square root of negative one are equally functional and essential features of mathematics, then Kant’s fashion of distinguishing between the *ens rationis* and the *nihil negativum* is in some trouble.

Many of Lacan’s discussions of Kant during the following academic year, in his tenth seminar on *Anxiety* (1962-1963), are centered on driving home this critique of the Kantian “Transcendental Aesthetic.”⁶⁹ However, therein, Lacan indirectly concedes that there might be at least some very limited legitimacy to Kant’s portrayals of space and time (as per the contributions of the faculty of intuition to experience), perhaps solely as theoretical reflections of the spontaneous phenomenology of the most superficial sorts of mundane, quotidian subjective consciousness. In the tenth seminar, the two pure forms of intuition of the first *Critique* (i.e., inner sense as time and outer sense as space) are said to be delegitimized as supposedly eternal and exceptionless—and this insofar as Freud’s momentous discovery of the unconscious deprives the conscious experiences on which Kant’s “Transcendental Aesthetic” is based of their foundational, unsurpassable standing. Worded differently, Lacan’s argument is that Freudian

69 Jacques Lacan, *Le Séminaire de Jacques Lacan, Livre X: Langoisse, 1962-1963*, ed. Jacques-Alain Miller (Paris: Éditions du Seuil, 2004), 103.

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psychoanalysis, in challenging the traditional presumption of an equivalence between the mental and the conscious, raises objections to the ostensible *apriori* universality of any depiction of space and time rooted in a conception of consciousness wedded to this old, pre-Freudian presumption. Already during this academic year, Lacan, in connection with this critique of Kant, suggests that his turns to topology and other mathematical resources of more recent vintage than the late-eighteenth century are partly motivated by an intention to forge a non-Kantian transcendental aesthetic doing justice to the unconscious of analysis, with its primary process thinking as different-in-kind from the secondary process thinking characteristic of consciousness.⁷⁰

Coming back to the immediately preceding ninth seminar, Lacan, in the sessions of February 28th and March 28th of 1962, hitches his theory of the subject specifically to Kant's *nihil negativum qua* empty object without concept. He goes so far as to allege that this *leerer Gegenstand ohne Begriff* is the only one of the first *Critique's* categories of nothing(ness) to enjoy any degree of true cogency.⁷¹ Lacan proceeds to rule out both the *ens rationis* and the *nihil privativum* ("Empty object of a concept" [*Leerer Gegenstand eines Begriffs*]) as worthwhile, particularly in relation to a viable theorization of subjectivity.⁷² Lacan's reason for not even mentioning the *ens imaginarium* ("Empty intuition without object" [*Leere Anschauung ohne Gegenstand*]) likely is this category's direct reliance upon the account of the spatio-temporal faculty of intuition as per the Kantian "Transcendental Aesthetic" problematized and subverted by psychoanalysis. Despite rejecting three out of four of Kant's negative categories, Lacan complains that Kant underutilizes them in his philosophical corpus as a whole.⁷³

If Lacanian subjectivity can be associated neither with the *ens rationis* nor the *nihil privativum*, this means it resembles

70 Lacan, *Le Séminaire de Jacques Lacan, Livre X*, 103-104, 326-328.

71 Lacan, *Le Séminaire de Jacques Lacan, Livre IX*, session of February 28th, 1962.

72 Lacan, *Le Séminaire de Jacques Lacan, Livre IX*, session of March 28th, 1962.

73 Lacan, *Le Séminaire de Jacques Lacan, Livre IX*, session of March 28th, 1962.

neither the self-consistency of coherently cognizable concepts like zero and noumena (i.e., the *ens rationis*) nor the simple contrasting absences of phenomena like darkness complementing light and coldness complementing heat (i.e., the *nihil privativum*). Moreover, Lacan's refusal even to deign to mention the *ens imaginarium* indicates his repudiation of recourse to a Kantian-style form-content distinction; that is to say, the Lacanian subject is not (merely) the formal apparatus of a transcendental matrix within which elements are configured. Additionally, it should be noted that Lacan recurrently employs the phrase "leerer Gegenstand ohne Begriff" (empty object without concept) when referring to Kant's *nihil negativum*. Insofar as he brings his conception of subjectivity into connection with this particular Kantian category of negativity, his preference for speaking of an "empty object without concept" probably is motivated by a desire to highlight several facets of the subject-as- $\$$ (specifically the sides of it he subsumes under the designation "subject of enunciation" as different from what is labeled the corresponding "subject of the utterance"⁷⁴). First, the split *parlêtre* is itself self-contradictory (as is the *nihil negativum*). Second, this peculiar (non-)being's self-contradiction arises from it inevitably objectifying itself (i.e., becoming an object through passing into utterances, identifications, etc.), on the one hand, and, on the other hand, simultaneously being unable to pour itself without remainder entirely into these same objectifications (as the kinetic subject of enunciation intrinsically irreducible to the static subject of the utterance despite the interminable, oscillating dialectic in which the former constitutes and is constituted in turn by the latter). Third, as thereby resisting exhaustive decantation into the forms and contents of Imaginary-Symbolic reality, including the "objects" and "concepts" together making up the utterance side of the barred subject ($\$$), the *Cogito*-like subjectivity of the subject of enunciation subsists and insists as an "empty object without concept." As in the case of Kant's *nihil negativum*, this subject's emptiness and conceptlessness

74 Lacan, *The Seminar of Jacques Lacan, Book XI*, 139–140.

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are consequences of a self-contradiction. What is more, this self-contradiction is situated at the very structural core of subjectivity *qua* $\$$, as inherently divided and self-subverting (and this in ways uncannily resembling how Kant portrays transcendental subjectivity in the *Critique of Pure Reason*, especially “The Paralogisms of Pure Reason” therein).⁷⁵

In the February 28th, 1962 session of the ninth seminar, Lacan also points back to his fourth seminar on *The Object Relation* (1956-1957). For those familiar with his teachings, it might not be surprising that he does so in the context of parsing Kant’s four-part categorization of varieties of nothing(ness). In this earlier annual seminar, Lacan, as most Lacanians know, introduces a tripartite schema of negatives on the basis of his three-dimensional register theory. More precisely, in recasting Freud’s ideas apropos castration, he distinguishes between “privation” (as Real, an incarnate non-presence dwelling in material being *an sich*), “castration” (as Symbolic, a deficit created in reality by the interventions of socio-linguistic mediators), and “frustration” (as Imaginary, a representational confusion of Real privation and/or Symbolic castration as deprivations and obstacles gratuitously imposed from without—to the extent that the Imaginary misrecognizes the Real as the Symbolic and vice versa, frustration reacts to privation as castration and castration as privation).⁷⁶ Lacan’s subsequent redeployment of this triangle of negativity during his 1962 musings involves comparing and contrasting it with Kant’s square of nothings (similarly, in the eleventh seminar, he pairs Kant on the negative with Freud and himself on the castration complex and the phallus⁷⁷). Lacan concludes from this exercise that the triad of privation-castration-frustration itself arises from a sort of *Ur*-privation. He identifies the latter as related to the void of a *leerer Gegenstand ohne Beg-*

75 Johnston, *Time Driven*, 79-119.

76 Jacques Lacan, *Le Séminaire de Jacques Lacan, Livre IV: La relation d’objet, 1956-1957*, ed. Jacques-Alain Miller (Paris: Éditions du Seuil, 1994), 25-58. Adrian Johnston, “Jacques Lacan,” *The Stanford Encyclopedia of Philosophy*, 2013.

77 Lacan, *The Seminar of Jacques Lacan, Book XI*, 252-253.

riff, the *nihil negativum* of a (proto-)subject underlying this trinity of lacks.⁷⁸

Deciphering the riddle presented by this *Ur*-privation brought by Lacan into connection with Kant's empty object without concept requires, among other things, rejecting how Miller and some of his followers understand the significance of Kantianism for Lacanianism. In a collection entitled *Lakant*, Miller *et al* latch onto the fact that Kant's transcendental idealism entails an anti-naturalism. At the level of his theoretical philosophy, Kant objects to all realist and/or materialist ontologies as problematic on critical epistemological grounds. At the level of his practical philosophy, Kant upholds the effective existence of an autonomous rational agency transcendently different-in-kind from the heteronomous nature of the human animal, with its creaturely "pathological inclinations." These authors allege that Lacan adopts the anti-naturalist dualisms of Kant's transcendental idealism, purportedly remobilizing them against the multifarious encroachments of biology and its branches into psychoanalytic metapsychology and analysts' consulting rooms. Miller and company talk about continuing a supposedly Lacanian struggle against naturalism, inspired by Kant, in a contemporary analytic showdown with the neurosciences.⁷⁹

As mentioned a short while ago here, I move against readings of Lacan as a straightforward, die-hard anti-naturalist (such as this Millerian one) on a host of other occasions. Without getting bogged down in rehashing those arguments, I will show momentarily how the primal negativity of a *leerer Gegenstand ohne Begriff* as invoked by Lacan in his ninth seminar can be apprehended adequately only via references to a sizable series of quasi-naturalist moments scattered throughout his corpus. For the time being, I will forego taking the additional step of driving nails in the coffin of any interpretation of Lacan's

78 Lacan, *Le Séminaire de Jacques Lacan, Livre IX*, session of February 28th, 1962.

79 Jorge Alemán, "Présentation," *Lakant*, ed. Jacques-Alain Miller, trans. Yasmine Grasser and Adela Bande-Alcantud (Paris: École de la cause freudienne, 2003), 18.
Jacques-Alain Miller, "Une incroyable exaltation," *Lakant*, 29.

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intellectual edifice as resting upon a transcendental idealist philosophical foundation (as I do elsewhere⁸⁰).

Earlier, I complained about Deacon's tendency to lump together various distinct types of non-presences as being all equally "absential" in his neologistic sense. The Lacanian trinity of privation, castration, and frustration helps bring out the distinctions smoothed over by Deaconian absentialism (as would Kant's four categories of *Nichts* too, not to mention Alexius Meinong's triad of *Aussersein*, *Sein*, and *Nichtsein* as articulated in his classic 1904 essay "The Theory of Objects"⁸¹). By treating everything non-present (i.e., not materially embodied in the here and now) as absent *à la* absentialism, Deacon runs together the past and the future, the possible and the impossible, the envisionable and the unenvisionable, and so on. Obviously, the realm of the non-present is much vaster than that of the present and contains myriad species and sub-species of different absences. As for Lacan's triad of privation, castration, and frustration, it can be mapped onto his more basic dyad distinguishing between the Real and reality (with the latter co-constituted on the basis of the two other registers of the Imaginary and the Symbolic). Doing so places privation on one side, that of the Real, and both castration (as Symbolic) and frustration (as Imaginary) on the other, that of reality. In light of my preceding engagements with Kant and Deacon especially, I wish to focus in what follows on absences in the Real instead of absences in reality. The latter, loosely and preliminarily speaking, would be lacks or negatives as easily representable non-presences (such as episodic memories of the past or an-

80 Johnston, *Žižek's Ontology*, 269–287.

Johnston, "Reflections of a Rotten Nature".

Johnston, *Adventures in Transcendental Materialism*.

81 Alexius Meinong, "The Theory of Objects", trans. Isaac Levi, D.B. Terrell, and Roderick M. Chisholm, *Realism and the Background of Phenomenology*, ed. Roderick M. Chisholm (Glencoe: The Free Press, 1960), 76–117. Adrian Johnston, "Non-Existence and Sexual Identity: Some Brief Remarks on Meinong and Lacan," *Lacanian Ink: The Symptom*, 3 (2002), <http://www.lacan.com/nonexistf.htm>.

ticipatory fantasies of the future, with both of these kinds of representations picturing logically possible states of affairs imaginable by the human mind). By contrast, the former (i.e., absences in the Real) resist or defy capture in the forms and contents of familiar, readily graspable representations (examples of which would include not only square circles and any number of superficial paradoxes, but also, from a psychoanalytic perspective, one's own mortality as well as sexual difference *à la* Lacanian “sexuation”).

One of the conflations of which the absentialism of Deacon's *Incomplete Nature* is guilty is that blurring the fundamental division between representable and unrepresentable absences *qua* non-presences, namely, between absences in reality and those in the Real. In the ensuing, I will zoom in on privation and the primordial *Ur*-privation of a *nihil negativum* (i.e., the barred *qua* self-contradictory [proto-]subject as an empty object without concept [*leerer Gegenstand ohne Begriff*]), with both being tied to the register of the Real. And, adopting a recommendation by Slavoj Žižek, the Real is to be conceived herein as refracting within itself Lacan's three registers, resulting in a Real Real, a Symbolic Real, and an Imaginary Real⁸² (with reference to former Chinese leader Jiang Zemin's doctrine of the “Three Represents,” one might be tempted to speak of a Lacanian-Žižekian theory of the “Three Non-represents”). Deacon, taking advantage of the latitude afforded by the breadth of his category of the absential, allows himself the liberty of addressing such tantalizing topics as epiphenomenalism⁸³ and “concrete abstraction”⁸⁴ (i.e., real abstraction as already theorized before Deacon by Hegel, Marx, and Lacan, each in his own way). Both of these topics involve representable absences within the registers of reality. In addition, Deacon

82 Slavoj Žižek, *On Belief*, (New York: Routledge, 2001), 80–83.

Slavoj Žižek, *Organs without Bodies: On Deleuze and Consequences* (New York: Routledge, 2004), 102–103)

Slavoj Žižek and Glyn Daly, *Conversations with Žižek* (Cambridge: Polity Press, 2004), 69–70.

83 Deacon, *Incomplete Nature*, 2, 481–483

84 Deacon, *Incomplete Nature*, 197–203.

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discourses about every other type of (non-)thing associated with the not-present, from physical constraints to the number zero (some of which involve Real absences over and above those of Imaginary-Symbolic reality). On separate occasions, I take up issues having to do with both epiphenomenalism and real/concrete abstractions.⁸⁵ For now, and setting aside these sorts of dimensions (i.e., representable non-presences in reality), the rest of this text will concentrate on putting forward a Lacan-inspired and scientifically compatible quasi-naturalist sketch of materially real absences with causal power but without an unproblematic relationship to direct representation.

So, with reference to two of the companion pieces to the present essay,⁸⁶ how does an “anorganicist” reinterpretation of Lacan centered on the mirror stage link up with the Kantian *nihil negativum* as an empty object without concept, *Ur*-privation, and absences in the Real? The concept-term “privation,” as it functions in Lacan’s analysis of the castration complex into Real privation, Symbolic castration, and Imaginary frustration, is trickier than it might appear at first glance. It shelters within itself some of the slippery dialectics of the register of the Real (in this case, convergences and reversals between plenitude and deprivation, fullness and incompleteness).⁸⁷ Sticking for the moment to the crudely literal Freudian example, biologically female

85 Johnston, *Žižek’s Ontology*, 269–287.

Johnston, “Slavoj Žižek’s Hegelian Reformation,” 3–20.

Adrian Johnston, “Think Big: Toward a Grand Neuropolitics—or, Why I am not an immanent naturalist or vital materialist,” in *Essays on Neuroscience and Political Theory: Thinking the Body Politic*, ed. Frank Vander Valk (New York: Routledge, 2012), 156–177.

Adrian Johnston, “Misfelt Feelings: Unconscious Affect Between Psychoanalysis, Neuroscience, and Philosophy,” in Adrian Johnston and Catherine Malabou, *Self and Emotional Life: Merging Philosophy, Psychoanalysis, and Neurobiology* (New York: Columbia University Press, 2013) Johnston, *Adventures in Transcendental Materialism*.

86 Johnston, “Drive Between Brain and Subject”.

Johnston, “Reflections of a Rotten Nature”.

87 Johnston, *Žižek’s Ontology*, 145–177.

human organisms, in the (material) Real, are not “missing” a penis or anything else; they simply are as and what they are. Apropos the dimension of the Lacanian Real pictured as the presupposed plenum of a subjective incarnate being, there are no absences or lacks. Instead, with respect to the matters at issue in the psychoanalytic castration complex, there are, from this angle, just vaginas and penises. The vagina is not the absence of the penis, since trying to situate these organs *vis-à-vis* each other in this way is, according to Lacan’s register theory, a category mistake in which a comparison between proverbial apples and oranges is subreptionally transformed into a binary opposition between having and not having, one and zero, plus and minus, etc.⁸⁸

But, of course, Freud and Lacan both consider the committing of this category mistake, in which penises and vaginas go from being apples and oranges to becoming presences and absences, to be a near-inevitability during ontogenetic subject formation as taking shape within still-reigning phallogocentric symbolic orders. Skipping over a number of nuances for the sake of relative brevity, in Lacan’s rendering of the castration complex, the inscription of lacks in the Real by the Symbolic—exclusively through symbolization can something be said to be missing strictly speaking⁸⁹—establishes the very distinction between privation and castration *per se*. As regards a biological female, privation would be the fact that having a vagina entails not having a penis (as the Spinozistic-Hegelian ontological principle has it, *omni determinatio est negatio*). This privation is transubstantiated into castration proper if and only if such determination-as-negation is symbolized as itself a non-determination, namely, as an absence relative to a specific corresponding presence (in elementary formal-logical terms, when a difference between A and B is reinscribed as a contradiction between A and not-A). According to Lacan, “castration” is intrinsically Symbolic—for him, it is always “symbolic castration”—both

88 Johnston, *Time Driven*, 371–372

89 Jacques Lacan, “Seminar on “The Purloined Letter,”” *Écrits*, 16–17.

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for these reasons as well as because the castration complex thus-reconceptualized epitomizes the more general existential ordeal of the living human creature being subjected to the overriding and overwriting dictates of the big Other *qua* symbolic order with its overdetermining significations.⁹⁰

The central ambiguity of Lacanian privation not to be missed in this context is that, consistent with the dialectical character of the register of the Real to which it belongs, privation simultaneously is and is not an absence, lack, and the like. On the one hand, the material Real, including that of various and sundry human organs, merely is what it is in its raw, dumb facticity. The lone type of negativity attributable to this Real is the basic, fundamental ontological constraint making it such that each and every determinate being is what it is by not being the infinity of anything and everything else. On the other hand, the castrating symbolization of privation as a Real lack, as an absence in the Real, is not dismissible as an *ex nihilo* projection of concepts and categories onto an ontological-material blank slate as featureless and flat. That is to say, the efficacy of symbolic castration partially depends upon determinations in the Real as providing it with already-there (in)tangible hooks on which to hang its signifiers (such as the visible physical discrepancies between male and female genitalia).⁹¹ Such hooks are privations as Real proto-absences, potentially identifiable lacks in excess of the Symbolic that names them as such. What endows these symbolizations of deficits with a surplus of heft and sting is the pre-existence of a Real not so full as to be invulnerable to having holes punched in it by signifiers of castration (or all signifiers as symbolically castrating).

To cut to the chase, I equate Lacan's primordial *Ur*-privation, as distinct from but related to the privation of the Lacanian tripartite castration complex (*à la* Real privation, Symbolic

90 Jacques Lacan, "The Signification of the Phallus," *Écrits*, 578-581.
Lacan, "Guiding Remarks for a Convention on Female Sexuality," 616.

91 Lacan, *Le Séminaire de Jacques Lacan, Livre IV*, 199-230.
Lacan, *Le Séminaire de Jacques Lacan, Livre IX*, session of June 20th, 1962.
Lacan, *The Seminar of Jacques Lacan, Book XVII*, 124-130.

castration, and Imaginary frustration), with the multiple bio-material negativities embodied by the barred corpo-Real of the *corps morcelé*, itself the paradigmatic materialization of nature *qua* impotent, not-one, rotten, and incomplete.⁹² The immature body-in-pieces, in its helpless neediness (as per “need” in the need-demand-desire triangle), is the primal locus of those “natural” lacks launching this living being into fateful trajectories of denaturalizing vicissitudes (including passage through the castration complex). Furthermore, for Lacan, this *Ur*-privation counts as a realist and materialist instance of the Kantian category of the *nihil negativum als leerer Gegenstand ohne Begriff*. Due to the unstable epistemological and ontological dialectics of Real privation (as just explained here), the proto-absences inscribed in the flesh, blood, and bones of the neonate—these are privative causes of the geneses of both ego and subject—defy consistent, non-dialectical conceptualization. In other words, they would have to qualify as “without concept” (*ohne Begriff*) by Kant’s (pre-Hegelian) criteria of *bona fide* conceptuality. And, as an embodiment of Real dialectics inconceivable within both the limits of the phenomenology of transcendental idealism as well as the framework of positivist/presentist (i.e., non-absentialist) natural science, the negativity of absences in the Real—as observed, Lacan is anxious to preserve causal functions for such lacks—would be foreclosed from consideration by the Newtonian Kant and most scientists as an “empty object” (*leerer Gegenstand*).

Put differently, Kantian epistemology and the spontaneous intuitions of modern scientists would pass over as an inconsistent, self-contradictory concept resulting in the ineffective, inconsequent nothingness of a non-object what Lacan (similarly to Hegel before him and Deacon after him) insists upon as the very foundation of a theory of subjectivity. In terms of the earlier-mentioned Lacanian-Žižekian doctrine of the Three Non-represents (and by contrast with the undifferentiated expanse of Deacon’s catch-all notion

92 Johnston, “Reflections of a Rotten Nature”.

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of the absential), this ensemble of elements made to cross-resonate with each other by Lacan brings together a Real Real (i.e., *Ur-privation*), a Symbolic Real (i.e., *ohne Begriff*), and an Imaginary Real (i.e., *leerer Gegenstand*). The Real *Urgrund als Ungrund* of Lacanianism *tout court* is a corporeal negativity (as Real) covered over by the spatio-temporal experience of consciousness (as Imaginary) and representable solely through ideational-linguistic contortions and contradictions (as Symbolic).⁹³ Adequately thinking this in a realist, materialist, and quasi-naturalist fashion compatible with the sciences requires nothing less than a sophisticated ontological reactivation of privative causality as this notion emerges in early modernity (albeit with older historical roots tracing back to ancient debates about whether Evil is a positive reality unto itself or just an absence of or distance from the Good, as Kant signals in his pre-critical essay on varieties of the negative⁹⁴ and Schelling tackles head on in his 1809 *Freiheitschrift*⁹⁵).

93 Johnston, "Reflections of a Rotten Nature".

94 Kant, "Attempt to Introduce the Concept of Negative Magnitudes Into Philosophy," 221.

95 F.W.J. Schelling, *Philosophical Inquiries into the Nature of Human Freedom and matters connected therewith*, trans. James Gutmann (Chicago: The Open Court Publishing Company, 1936), 26, 44-49.

Non-philosophy, the “No” Button, and a Brief Philo-fiction

Randall Johnson

NON-PHILOSOPHY—AND ESPECIALLY that associated with the name François Laruelle—has in the last few years surged forward in those circles of radically-minded philosophers who seem to view themselves at some liminality of thought that is singularly new. Non-philosophy admits few, if any, philo-friends, and from those few named in-person it seems predominantly to separate itself. There is no doubt a certain pleasure in negation, a certain *jouissance* in the partitioning of the shared. I was reminded of such whole body joy of “no” by what could be argued was an inappropriate Christmas gift: a “no” button.

Fashioned as a likeness of the very successful advertising campaign of an office supply conglomerate’s “easy” button, the “no” button, when pushed, has about five or so different voicings of negation: a fairly polite but direct no; a shrill, high-pitched and irritable no; a deeper toned and emphatic no; a “no, no, no, no, no...” with a silent ellipsis of ongoingness; and a most definite “for the last time: no!” If the no-button had the voice of a non-philosopher, perhaps it would say “no-in-the-last-instance.” My non-husband and I, both child psychiatrists, gave this particular no-button, this techné of meta-negation, to our three year old great niece. Neither of us, I suspect, had anticipated her pure, unadulterated joy of negation as she continued to press the button with transfixed pleasure.

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Even though we become in a milieu, and with any luck continue to do so, we differentiate into our interiors of little selves, our emerging proto-egos, partly via the concrescences of the relational “no’s” of willful intention. Is it developmentally constructive to have these micro-separations concretized into such an odd technical object? Is this no-in-the-last-instance the commodified essence of the *nihil* of capitalist consumption: the reified thing covering over immanent relation? Leaving to one side for now the excitement of abstraction, we will simply say that the *no* bears/bares affect, in that dual sense of carrying feelings along in the very revealing that is their lived happening. Perhaps that remains in some fairly abstract generalization, however, and is not so simply stated in my excited affinity for these meta-realms of discourse, which so strive to be non-discursive in their very saying of immanent life. We will end this little diversion of a perhaps inappropriate gift with what could be a description of its reception: it’s fun to say “No!”

Initially, it is important to emphasize that the *non* of Laruelle’s thinking, however much pleasure may come with its utterance, is in no way a dismissal or simple negation of philosophy—as if negation were ever so simple as a technical object may make it seem. Non-philosophy, in its pragmatics, makes use of philosophy in general as its material, much as it similarly makes use of science. As he says in the introduction to *Philosophy and Non-Philosophy*: “No doubt it will have to be said—it must already be said again: non-philosophy is not a ‘philosophy of the no’ and is even less an attempt at the nihilistic destruction or positivist negation of philosophy.”¹ In an interview from 2011, Laruelle characterizes the genesis of non-philosophy as being *in* and *from* philosophy, and he explains: “The first phase is very negative, which is to say that I had the feeling, at the same time as practicing philosophy, that there was a conceptual lack, as if a fundamental concept

1 François Laruelle, *Philosophy and Non-Philosophy*, trans. Taylor Adkins (Minneapolis, MN: Univocal Publishing, 2013), 2.

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was lacking in philosophy itself.”² While extricating himself from philosophy proper, he came to identify this missing concept as the One, the One-in-One, the One-Real; and in the second phase of non-philosophy, he thinks under the condition of this variously named concept to ferret out the presuppositions of sufficiency within philosophy, in what Laruelle views as its decision to cut itself off from the Real.

So, if our acknowledgment of the pleasure of nay-saying has any inherence in the practicality of non-philosophy, this is intended neither as an indictment nor an endorsement but merely as a recollection that there is the emotive fact that, even in pure abstraction, thinking happens feelingly. Instead of a knowledge acquired through the sufficient, rational concepts of philosophical decision, non-philosophy for Laruelle becomes “...the rigorous knowledge that can ensue from a real *jouissance* or from the vision-in-One of ‘reason’ itself.”³ In the 2011 interview, he describes non-philosophy as a *partitive apparatus*: “It is an instrument, yes, but a very particular one, which forms a body with philosophy, while being separated or distinct from the objects that it deals with thanks to this apparatus.”⁴ If there is also a certain *jouissance* in the partitioning of the shared, as we indeed contend, then it is essential that the partitive apparatus of non-philosophical pragmatics engage in a more nuanced pleasure than that of the odd technical object that we have brought to the table. At this point, hinting at some axiomatic ambiguity of reversibility, we will also say that feelings happen thinkingly. This is perhaps to unveil prematurely the direction of our thinking, especially if we continue by clarifying that reversibility and unilaterality may not be contradictory, since what is unilateral-in-this-instance may be contra-unilateral-in-another-instance. Axioms merely pause the dialectic and allow time for the coherence of a concretized thought; they

2 John Mullarkey and Anthony Paul Smith, eds, *Laruelle and Non-Philosophy* (Edinburgh: Edinburgh University Press, 2012), 239.

3 Laruelle, *Philosophy and Non-Philosophy*, 23.

4 Mullarkey, and Smith, *Laruelle and Non-Philosophy*, 241.

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cannot stop the hyper-dialectic, which some prefer to name non-dialectic.

This is to place in apposition to Laruelle a perhaps surprising interlocutor: Maurice Merleau-Ponty. There are some traces which may lend some credibility to this philo-fiction of a certain Laruellean aspect in Merleau-Ponty which we will briefly adumbrate by focusing on the lecture course he was in the midst of teaching at the *Collège de France* during the academic year 1960-1961 until the time of his death on May 3: "Philosophy and Non-Philosophy since Hegel." During the first portion of the course, Merleau-Ponty closely reads sections of Hegel's *Phenomenology* in conjunction with Heidegger's essay, "Hegel's Concept of Experience." The second portion of the course is comprised of close readings of a number of Marx's writings which critique Hegel. But first, a few comments on his style.

Both Merleau-Ponty and Laruelle at various points use the word *style* to characterize modes of thinking and writing philosophy, and it is perhaps their stylistic difference that seems to me to be the most stark. Merleau-Ponty's thinking could well be described as experience-near, striving to remain in the feeling/thinking/writing of the *how* of happening more so than the *what* of that which has happened. Hence, he demonstrates the similarities between, on the one hand, the empiricist, logically tending toward various positivisms, objectified manner of thinking of certain philosophies and of most sciences and, on the other hand, the intellectualist, logically tending toward various idealisms which allow for inherent negations, subjectified manner of thinking of certain philosophies and, at times at least, of some of the so-called human sciences. He reads both modes of thinking carefully, inhabiting the thought to get to its limits—or, perhaps better expressed, to get to those aspects which over-extend themselves in presuppositions, what I understand as the presumption of what Laruelle calls philosophical sufficiency. Readers of Merleau-Ponty must be careful not to mistake his close and astute readings, his inhabitation of these conceptual thought-realms, as coinciding with his own distinct thought.

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He helps us understand the empiricist/intellectualist divide less as two Schmittian enemy camps, though it can indeed play out in this manner, than as two sides of one coin, or since coins have a thickness which could divert one’s attention to imaging the between as substantive, we will evoke the image of writing on two sides of partially transparent onion skin paper so that the two sides adhere all but immaterially. The arena of *between* that Merleau-Ponty thinks is more akin to the milieu in which this two-sided philosophical coin is spent, at times with material effect and at times scoffed at as valueless, whether its tossing lands it on its head of abstraction or its tail of praxis. This was the philosophical coin he was attempting to think during his last course, focusing on Hegel’s abstraction both *of* and *with* lived experience and on Marx’s turning this on its head to get at the very praxis of living. In some of his last lectures, Merleau-Ponty highlights Hegelian traces which are more visible on the onion skin of Marx’s thinking than Marx himself desired. Here, another simple truth made manifest by the no-button: just saying “no” does not necessarily make it so.

Merleau-Ponty’s first words for his course set the stage for this dehiscence of non-philosophy from philosophy: a negation that does not make it other, but that inheres in the one.

No battles occur between philosophy and its adversaries. Rather what happens is that philosophy seeks to be philosophy while remaining non-philosophy, i.e. a ‘negative philosophy’ (in the sense of ‘negative theology’). ‘Negative philosophy’ has access to the absolute, not as ‘beyond,’ as a positive second order, but as another order which must be on this side, the double—inaccessible without being passed through. True philosophy scoffs at philosophy, since it is aphilosophical.⁵

This paragraph is one of those instances when it is difficult to know if Merleau-Ponty is inhabiting the thought of Hegel to begin a thinking-with him or if he is presenting an overview of the traversal of thinking that he intends for this course

5 Maurice Merleau-Ponty, “Philosophy and Non-Philosophy since Hegel,” in Hugh J. Silverman, ed., *Philosophy and Non-Philosophy since Merleau-Ponty* (Evanston, IL: Northwestern University Press, 1997), 9.

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to explore. I am inclined to read it as his distinct thought, even if it remains Hegelian, though in a sense of the Hegel evoked with sustained fidelity by Žižek rather than the one somewhat caricatured by Marx. This effort to think the *non* of philosophy as akin to negative theology also appears in the posthumously published text he was in the midst of writing at this time, *The Visible and the Invisible*. For Merleau-Ponty, the *non* inheres in the real and must do so for there to be what he will call the good ambiguities of a truly concrete philosophy.

For Merleau-Ponty, it is the Hegel of *Phenomenology* who expresses a negativity at work in contrast to the Hegel of a decade later at the time of the *Encyclopedia* when “phenomenology again becomes a discipline, i.e. a part of science.”⁶ At this later point in Hegel’s encyclopedic systematics, the good ambiguity between experience and knowledge is conceptually fixed. Merleau-Ponty says of this ambiguity and its presumed resolution:

In truth, we have experience of knowledge and knowledge of experience. These two faces of ambiguity are abstractions. The absolute is that which is between the two: the transformation of one into the other. But this cannot be maintained except in contact with experience, with the ‘vertical’ world (of which the absolute is its ‘profundity’). The very formulation of this living ‘ambiguity’ makes experience disappear. The formulation transforms it into something said, in the positive, and makes the negative disappear in the 1807 sense—it restores the truth of identity. The Hegelian philosophy of 1807...excludes the utterance. Once uttered, it returns to identity. ... The Hegelian reconciliation would then be that there is no more living communication between the absolute and history.⁷

This sets the stage for the second part of the course which delves into the critiques of Marx and offers an analysis of his praxis.

And Marx engages in a polemic against Hegel in the name

6 Ibid., 50.

7 Ibid., 52–53.

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of embodied man and ‘non-philosophy.’ But from the beginning, Marx is profoundly Hegelian. And, later, it is not Hegel from whom he distances himself, but from direct philosophy. Thus we must show that for Marx, as well as for Hegel, the failure to reunite philosophy and non-philosophy, which he wanted in the first place, is due to a domination of the philosophy of the concept over a philosophy of ‘experience.’⁸

Merleau-Ponty clearly has an affinity for the Marxian move from a philosophy of consciousness, and many critiques of Hegel in addition to those of Marx leave him purely in this thought-realm, to “a philosophy of man incarnate.”⁹ The risk here that Merleau-Ponty diagnoses is that the negation of negation in Marx’s thought returns it to a positivism: “It is a philosophy to the very extent that it does not wish to be one.”¹⁰

Towards the beginning of his last lecture on May 2, Merleau-Ponty first characterizes the bad ambiguity of philosophy, no doubt having in mind both Hegel and Marx, and then sketches the direction of his distinct thinking towards a concrete non-philosophy.

How does philosophy develop a bad ambiguity? Like the *Denken* of the overview, exhaustive, possessing the thing ‘in thought,’ philosophy, wanting to be all, is nothing; it does not inhabit the things it discusses,—and, since it is not anything in particular, it is not even opposed to that which it critiques. It is neither yes nor no; it is not no, because it is not yes. Philosophy has no enemies, nor does it have any friends. It has no friends because it has no enemies. It lacks everything, both the particular and the universal. By contrast, it must have both. This thought will not have the character of an overview, the pretense of living at a distance, of seeing, haunting, contemplating—which is a yes under the flag of a no, and a no under the flag of a yes. By contrast, what is needed is a manner of thinking which is at the same time concrete and universal, in which the yes will be a no, and

8 Ibid., 58.

9 Ibid., 68.

10 Ibid., 69.

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the no an unequivocal yes. It is not a question of returning behind Hegel, for example, towards a philosophy that renounces its comprehension of non-philosophy or towards a non-philosophy that will take non-philosophy (art, religion, nature, the State) without criticism. The problem is to succeed at that which it lacks, to create a concrete philosophy that is truly concrete.¹¹

In this last course which specifically addresses the conjugation between philosophy and non-philosophy, it seems to me that Merleau-Ponty is in some regards becoming-Laruellean. Such a becoming of philo-fiction would hear his words here as diagnosing the philosophical decisions of these two philosophies of Hegel and Marx that suppose a sufficiency of concept and, in their final valuation, place it in some meta-position over experience and, in doing so, lose touch with the inherent *no* of the real which necessitates the contingent co-instance of the concrete and the universal. Laruelle, as his readers are frequently reminded, thinks from the One, the One-in-One, the One-Real, the Last-Instance, and he places philosophy under this condition. Is it possible to think Merleau-Ponty's elemental flesh as naming the One-Real from which thinking and practicing emerge while remaining in dehiscent separation from them, at once concrete and universal? If a reader of Merleau-Ponty can extricate herself from imprisoning his oeuvre as yet another instantiation of some phenomenological philosophy of Cartesian consciousness, as he is all too often charged—and it is my sense that his ongoing double critique of empiricist and intellectualist ways of thought, beginning with *The Structure of Behavior*, manifests our need for an ongoing extrication from this prison house—then perhaps *flesh of the world* can be apprehended as radically immanent. Laruelle was drawn towards, and hence needed to partition his thought from, the immanence of life in the work of Michel Henry, who in *The Essence of Manifestation* critiques Merleau-Ponty's *Phenomenology of Perception* as indeed trapped in a Cartesian and therefore transcendent consciousness. Laruelle critiques

¹¹ Ibid., 72-73.

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Henry’s immanence, however, as absolute (rather than radical) and as remaining in philosophy. Even though I read his later thinking as approaching immanence, Merleau-Ponty retains until the end the sense of chiasmus, of intertwining, of hinging, of encroaching, frequently referencing Husserl’s use of *Ineinander*, and expresses this in various ways as the folding together of transcendence and immanence. Inasmuch as articulating the relation remains primary, Laruelle would, I suspect, diagnose this as Merleau-Ponty’s very retention of sufficiency and his decision for philosophy.

In the interview from 2011, Laruelle’s manner of speaking is slightly more accessible than the at times excessively abstract style of his writing, so we will take from this source a few more of his direct words for this dialogue of philo-fiction.

Philosophy is very abstract, by definition, but it is an abstraction closer to the concrete; this is the first degree of abstraction. As non-philosophy is a theory of philosophy, we have an abstraction in the second degree. Non-philosophy is not a philosophy of philosophy or a metaphilosophy, but a non-philosophy, which is to say that it is not based on the transcendence of a ‘meta’.¹²

He would, no doubt, view Merleau-Ponty’s efforts to think non-philosophy in chiasmus with philosophy as remaining a philosophy of philosophy, as remaining within philosophical decisionism. Indeed, Laruelle and his collaborators are familiar with this last lecture course of Merleau-Ponty that we have briefly adumbrated. In the entry “Non-philosophy” from *Dictionary of Non-Philosophy*, following the definition given by its own practitioners and in the portion of the entry which articulates how the concept is apprehended within philosophy proper, the authors write: “Merleau-Ponty’s report concerning post-Hegelian thinkers...is quite revealing when he wonders whether our century ‘does not enter an age of non philosophy.’ But the expression primarily has a negative, even devalorizing content that can become positive, like in the contemporary thinkers of difference such as Derrida,

12 Mullarkey, *Post-Continental Philosophy* (London: Continuum, 2007), 247.

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and especially Deleuze....”¹³ This is an instance when the partitive apparatus of non-philosophy, if we imagine it as some grand hermeneutical technical object, too quickly covers over many nuances of thought in a rather summary judgment and, hence, too closely approaches the *jouissance* of the no-button. In one of his latest texts, *Photo-Fiction, a Non-Standard Aesthetics*, Laruelle again mentions Merleau-Ponty directly, and these brief references do seem to reveal a bit more affinity in their disavowals than some of his more stridently partitive readings of other thinkers.

In his more recent works, Laruelle seems to be shifting from the prior term *non-philosophy* to the lengthened phrase *non-standard philosophy*, which may be a slight nod of recognition and admission to the fact that what he is thinking does in some manner and in spite of all the nay-saying remain philosophy. In *Photo-Fiction*, his effort is to think a non-aesthetics which reclaims the conjugations rather than the conflicts between art and philosophy, particularly through an art-fiction, as he calls it, of photography. In working through a way to step outside “the Principle of Sufficient Photo-philosophy,” he references “the matrix of Merleau-Ponty and Lacan, the axis of the subject/object-other with reversibility.”¹⁴ In some ways he seems to read this as a valiant effort of his predecessors to extricate their thinking from such philosophical sufficiency; however, he nevertheless critiques them as “still under the final authority if not of perception then at least

13 François Laruelle and collaborators, *Dictionary of Non-Philosophy*, trans. Taylor Adkins (Minneapolis, MN: Univocal Publishing, 2013), 99. The definition of non-philosophy as provided by Laruelle and collaborators:

Autonomous and specific discipline of an identically scientific and philosophical type that describes—in the last-instance according to the One-real and by means of philosophy and of science considered as material—on the one had force (of) thought or the existing-Stranger-subject, and on the other hand the object of force (of) thought, which is the identity (of) world-thought. (p. 98)

14 François Laruelle, *Photo-Fiction, a Non-Standard Aesthetics*, trans. Drew S. Burk (Minneapolis, MN: Univocal Publishing, 2012), 29–50.

of redoubled philosophical transcendence.”¹⁵ A bit later he further explains that this effort to think the photographing-photographed subject=X “remains at the stage of the chiasm of the *voyant-visible* of Merleau-Ponty if even we do not know very well who thinks it or sees it and from where. The risk is thus to understand this matrix as auto-photography, whose chiasm of flesh is not too far off from the bipolar structure crisscrossed with this interior of philosophy playing the role of the third enveloped term in the universal and auto-engulfing context.”¹⁶ The main methodology that Laruelle elaborates in his own efforts to think independently of some enveloping and typically transcendent third term is what he names unilateral duality. This abstraction is gradually developed throughout his oeuvre and in this text he describes this methodology of thinking immanence in conjunction with his concept of the clone:

We will distinguish between 1. the numeric and metric duality within a plane; 2. the unilateral duality, in the strict sense, of a transcendental origin deprived by scientific positivity of the third term (the transcendental), all immanence being transferred into the first term (the vector or wave, the force of vision), to such an extent that the second term (the photo as particle) is itself just as immanent as the first which is the real. Their set is the unilateral duality either on the side of vector or that of the clone. ... The semblance of the clone or its action is to create an effect of resemblance with the in-itself of the world or perception. There are two semblants and not merely one as Lacan believed: the semblant that is the clone itself (and which is the originary faith of Merleau-Ponty), and the bad semblant, the one that *makes believe* in the in-itself.¹⁷

The parenthetical mention of Merleau-Ponty and his originary faith again seems to be both in affinity with and in separation from this preceding phenomenological thinking,

15 Ibid.

16 Ibid., 51-52.

17 Ibid., 68-69. The translator notes that *makes believe* is in English in the original text.

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and it may be no surprise that at the start of the very next paragraph Laruelle again sees the need to distinguish his own approach to immanence from that of Michel Henry. Even though we would argue that Merleau-Ponty, in addition to the good clone of originary faith, does indeed think the bad semblant who *makes believe*, especially in his later thinking which approaches his own concept of non- or negative philosophy, we would likely be accused of remaining too entangled in the chiasm to know truly the abstract purity of unilateral duality. (And, we will not dispute the probable accuracy of any such claim.)

At the conclusion of his last lecture the day before his death, Merleau-Ponty states:

Philosophy and non-philosophy: a detached philosophy always reappears in disguise. What is needed is a negation of the negation which we do not fix either in negativism or positivism. ...—The renunciation of philosophy must be a consciousness of these difficulties in the nature/history opposition.¹⁸

I wonder if Merleau-Ponty would suggest that Laruelle's thinking risks fixation in both these regards: that is, in its double abstraction, which at times seems to reach abstruse points of conceptualization that forget experience altogether, his thinking may inadvertently lose touch with both nature and history—and hence lose its presumed touch onto the Real.

But this philo-fiction will not give some final words of thought-judging to either. Instead, we will point towards what seems to be an arena of congruence in the two thought-realms: striving towards a praxis which, echoing Marx, can feelingly think the becoming nature of human and the becoming human of nature. This is in the sense of human as transindividual, to evoke Gilbert Simondon as perhaps an interesting intra-locutor with the two. The thinking towards such a practice is described by Merleau-Ponty, in a number of his later writings including this last lecture course, as an anti-

18 Merleau-Ponty, "Philosophy and Non-Philosophy since Hegel", 83.

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humanistic humanism; and towards such a praxis, Laruelle invents the term *Humaneity*. Perhaps both would allow us to call it a gnosis for heretical humanism. Merleau-Ponty’s notes for the lecture dated April 17, 1961 ends with the mention of the texts for three future lectures, the last of which was to be on May 8: “a text by Kierkegaard and one by Nietzsche.”¹⁹ Needless to say, this lecture remains in the future, and there are no notes for it. However, returning to the first lecture of the course, this synoptic paragraph may give us a hint about this lecture-to-come:

The problem of Christianity. —Philosophy as the negation of a detached philosophy; religion as the death of God. —Death of God: Hegel’s word, Marx’s theory of ideologies, Kierkegaard’s Pharisean Christianity, Nietzsche’s word. —This does not mean (according to Heidegger): *es gibt keinen Gott*. —It does mean: the absolute must be thought by a mortal (capable of dying). This is not death in the sense of beings which are merely alive and which are uprooted from existence by an external cause. Rather it is death in the sense of human death, prefigured in man because conscience (*Er-innerung*) is negativity offered as proof of itself. —The absolute requires all that in order to avoid being ‘solitary’ and ‘lifeless’ (Hegel).²⁰

Laruelle’s thinking in *Future Christ* towards the practice of a heretical gnosis and his thinking towards Real Utopia in *Struggle and Utopia at the End Times of Philosophy* seem to wander in the thought-direction of a not dissimilar future to that evoked by Merleau-Ponty. We will allow this brief response of Laruelle from the previously mentioned interview to characterize this direction for the future:

This is the idea of the-last-instance: in Marx the last instance is more a predicate, an adjective, than a subject. Productive forces determine ‘in the last instance’, which means that determination is understood as a being in the last instance. But for me the last-instance is not a predi-

19 Ibid., 68.

20 Ibid., 13.

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cate; it is the subject itself. It is generic humanity, humankind. Only humankind can be in-the-last-instance. Neither the philosopher nor the ideas of the philosopher can. So it is a subject and not a predicate: it must invert and modify the relation unilaterally. This has recently been radicalized in *Philosophie non-standard*: in so far as this apparatus [*dispositif*], this instrument, is what I call the generic matrix, this generic subject is humanity which transforms philosophy but which is not exhausted in that transformative act. There is something irreducible within man, within human beings, which is not reduced to object, predicates, circumstances, etc.²¹

It is in the congruence or conjugation of these last co-instances that both Merleau-Ponty and Laruelle manifest a radical immanence for a non-philosophical *how to live*, which for the most part refrains from concretizing its happening into a philosophical transcendence of Life, imprisoned in some sort of meta-physical name-calling. We will conclude with one last, little ethic gleaned from our employment of this inappropriate gift of an odd technical object: there is a very fine line of living that can endure the *jouissance* of the no-button without becoming fixated on its last-instance. Do we dare evoke a possible concept for an experiential axiomatics of the feeling/thinking of life's happening? *And risk its consequences?*

No, no, no, no, no...in *this* last instance.

21 Mullarkey, *Post-Continental Philosophy*, 245.

Speculating on the Absolute: on Hegel and Meillassoux¹

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“To reconcile thought and absolute” - this is the enjoinder with which Meillassoux closes *After Finitude*.² The Hegelian tenor of this statement is impossible to miss, as is Meillassoux’s reference to the most famous speculative philosopher of the absolute in his own use of these terms. Is Meillassoux being ironic? Is Hegel not the ‘correlationist’ philosopher *pur sang*?

In fact, Hegel’s role in *After Finitude* is not very clear.³ To the casual reader it may appear that Meillassoux’s attitude towards Hegel is generally dismissive. The scattered refer-

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- 1 I am grateful to Fintan Neylan and an anonymous reviewer for comments on an earlier draft of this essay.
 - 2 Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. Ray Brassier (London: Bloomsbury Academic, 2010), 128 (henceforth quoted as AF).
 - 3 In order to focus on the relation between Hegel and Meillassoux I am going to presume the reader’s familiarity with *After Finitude*. Many excellent summaries, commentaries and criticisms of this work have already been written. To name a few: Ray Brassier, *Nihil Unbound* (London: Palgrave Macmillan, 2007), 49–94; Adrian Johnston, ‘Hume’s Revenge: À Dieu, Meillassoux?’, in *The Speculative Turn*, ed. Levi Bryant, Nick Srnicek, and Graham Harman (Melbourne: re.press, 2011), 91–113, http://www.re.press.org/book-files/OA_Version_Speculative_Turn_9780980668346.pdf; Peter Hallward, ‘Anything Is Possible: A Reading of Quentin Meillassoux’s *After Finitude*’, in *The Speculative Turn*, 131–41; Graham Harman, *Quentin Meillassoux: Philosophy in the Making* (Edinburgh: Edinburgh University Press, 2011), 6–53.

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ences are mostly negative, and seem to show that Meillassoux endorses the standard French reading of Hegel as a thinker of absolute totality: Hegel is “the thinker of absolute identity, of the identity of identity and difference”.⁴ Within Meillassoux’s own theoretical framework, Hegel seems to play the role of the arch-correlationist, who hypostasizes the subject-object correlation in the form of spirit (*Geist*).⁵ Although Meillassoux and Hegel are both *speculative* thinkers, in that they both claim that thought can think the absolute,⁶ Meillassoux’s speculative *materialism* seeks to demonstrate that the absolute can be thought independently of thought,⁷ while he thinks Hegel’s speculative idealism postulates the absolute necessity of the correlation between thought and being.⁸ Hegel is therefore the typical example of what he calls, in *Iteration, Reiteration, Repetition*, ‘subjectalism’: “Hegelian idealism is obviously the paradigm of such a metaphysics of the Subject thought as Absolute.”⁹

Despite this strongly critical attitude, however, it is clear that Hegel is an important influence on Meillassoux’s thought. Beyond Meillassoux’s appropriation of Hegel’s terminology,

4 AF 70.

5 AF 37. Brassier translates *Geist* as ‘Mind’.

6 This is Meillassoux’s definition of ‘speculative’: “Let us call ‘speculative’ every type of thinking that claims to be able to access some form of absolute, and let us call ‘metaphysics’ every type of thinking that claims to be able to access some form of absolute being, or access the absolute through the principle of sufficient reason” (AF 34).

7 AF 36. See also Quentin Meillassoux, ‘Iteration, Reiteration, Repetition’ (Freie Universität Berlin, 20 April 2012), 2;5, <http://oursecretblog.com/txt/QMpaperApr12.pdf> (henceforth quoted as IRR).

8 AF 37-38.

9 IRR 8. In order to clarify the terminology used in AF, Meillassoux distinguished in IRR between correlationism and subjectalism. Correlationists are thinkers who think that an absolute reality outside of thought may exist but that it is impossible to think it, while subjectalists claim that it is possible to think the absolute because thought, subjectivity, life or will (depending on the thinker) is in some sense absolute, and there is no reality outside it (IRR 3-4). On this revised terminology, Hegel is therefore, on Meillassoux’s account, a subjectalist but no longer a correlationist.

there are in fact also important similarities in their approach and their conclusions: as Žižek remarks, Meillassoux's endeavour is "much closer to Hegel than it may appear."¹⁰ Meillassoux himself acknowledges Hegel's strong influence on his philosophical education in a number of places. In *Divine Inexistence*, he mentions that he has written an unpublished book on Hegel, *Raison et ésotérisme chez Hegel*.¹¹ Graham Harman mentions in an interview with Meillassoux that the latter told him, on an earlier occasion, that Hegel is his "unaddressed hidden source"; Meillassoux responds that "Hegel, along with Marx, was my only true master."¹²

Of course, the fact that Meillassoux admits to being influenced by Hegel does not mean that he does not ultimately reject his approach. However, it does give us reason to think that there is something to be gained from exploring the relation between them. Despite the obvious connection, commentary on Hegel's role in Meillassoux's work has been relatively scant.¹³ The aim of this article is, therefore, to give a systematic account of Meillassoux's relation to and his criticism of Hegel, of their similarities as well as their differences. In the first part I will summarize Meillassoux's criticisms of Hegel and then discuss the role Hegel plays in the argument of *After Finitude*. The second part will look at the similarities

10 Slavoj Žižek, 'Interview (with Ben Woodard)', in *The Speculative Turn*, 411.

11 Quentin Meillassoux, 'Divine Inexistence' (translated excerpts), in Graham Harman, *Quentin Meillassoux: Philosophy in the Making* (Edinburgh: Edinburgh University Press, 2011), 204.

12 Harman, *Quentin Meillassoux*, 168.

13 As far as I have been able to establish (looking only at sources published in English), Žižek's reading of Meillassoux in *Less than Nothing* (London: Verso, 2012, 625-647) is the most sustained engagement with the topic. There are also a few articles which deal with specific aspects of the relation between Hegel and Meillassoux: John Van Houdt, 'The Necessity of Contingency or Contingent Necessity: Meillassoux, Hegel and the Subject', *Cosmos and History* 7, no. 1 (2011); Kirill Chepurin, 'Geist, Contingency and the Future of God', Higher School of Economics Research Paper WP BPR 16/HUM/2013 (2013), <http://ssrn.com/abstract=2227293>; Josef Moshe, 'The Night in Which All Dinosaurs Wear Nightcaps', *International Journal of Žižek Studies* 7, no. 3 (2013).

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between Hegel and Meillassoux, in particular with regards to the possibility of absolute knowledge, their criticism of Kant's distinction between the world of appearance and things in themselves, and the principle of sufficient reason. The third part will consider Žižek's and Gabriel's criticisms of Meillassoux in relation to his reading of Hegel and German Idealism.

Part 1: Hegel according to Meillassoux

1.1 Meillassoux's criticism of Hegel

As I have mentioned, judging from the references to Hegel in *After Finitude* Meillassoux's interpretation of Hegel is quite traditional. Let us look at these critical remarks in a little more detail.

Firstly, Meillassoux claims that Hegel represents a kind of metaphysics which "consists in *absolutizing the correlation itself*."¹⁴ On Meillassoux's account, the problem correlationism poses to traditional forms of dogmatic metaphysics or naive realism is that it seems impossible for thought to get outside of itself: how can we claim to think things which are independent from thought, when we can precisely only ever think them? Anything which we suppose to 'really exist' can only appear to us as mediated by, or correlated with, our subjective mode of experience.¹⁵ One way of dealing with this correlationist argument is what Meillassoux calls 'subjectalism'. Subjectalists, of which he claims Hegel is the paradigmatic example, argue that objective reality is itself in some way subjective, or that human subjectivity is just a special case of a more general principle which applies to all levels of reality. Meillassoux's examples are, amongst others, Nietzsche's Will to Power, Leibniz' monads, Schopenhauer's will, perception in Bergson, Deleuze's 'life' or 'larval subjects', and reason or spirit in Hegel.¹⁶

¹⁴ AF 37.

¹⁵ IRR 1-2.

¹⁶ AF 37; IRR 3. The value of the term subjectalism, Meillassoux claims, is that it covers both idealism (Hegel) and vitalism (Nietzsche, Bergson,

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It is not exactly clear what Meillassoux's criticism on this point is. Sometimes, he appears to accuse Hegel of being a metaphysician, where Meillassoux defines metaphysics as any position which claims that there is an absolutely necessary entity.¹⁷ The criticism would be, then, that Hegel postulates a necessary entity, namely spirit, while for Meillassoux all things or entities are necessarily contingent. However, this criticism would be off the mark, since, whatever else we can say about Hegel, it is clear that for him the absolute (or spirit, or reason for that matter) is not an entity. It is rather precisely Hegel's goal to show, in the *Logic*, that every attempt to set up a limited or determined concept as an ultimate principle of truth necessarily fails. As for Meillassoux, for Hegel every *thing* is necessarily determined, limited and finite, and therefore contingent.¹⁸

Although Meillassoux is here not completely clear in his terminology, we should assume that his criticism of metaphysics in this sense (postulating a necessary entity) applies primarily to pre-Kantian dogmatic metaphysics.¹⁹ His criticism of Hegel then takes a slightly different tack.

Deleuze), whereas the latter normally presents itself as a criticism of the former (IRR 4-5;6).

17 AF 32.

18 Meillassoux's view that spirit is a metaphysical entity is arguably a result of the greater focus, in the French tradition, on the *Phenomenology of Spirit* over the *Science of Logic*. The *Logic* can be read as a series of failed attempts to determine the absolute in terms of traditional metaphysical concepts such as 'a' thing (unity, determination, limitation, finitude etc.) or oppositions such as essence/appearance, finitude/infinity. As Paul Franks shows, Hegel's concern here is rooted in the shared German idealist concern with the problem of the 'unconditioned' status of the absolute, which in turn is rooted in pre-Kantian rationalism. See Paul W. Franks, *All or Nothing: Systematicity, Transcendental Arguments, and Skepticism in German Idealism* (Cambridge, Mass.: Harvard University Press, 2005). The thing with the unconditioned (das Unbedingte) is precisely that it is not a thing (*Ding*) (see Frederick C. Beiser, *German Idealism: The Struggle against Subjectivism, 1781-1801* [Cambridge, MA: Harvard University Press, 2002], 11.). I will return to the matter of Hegel's views on contingency further down.

19 Ibid.

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As Meillassoux notes, after Kant's critique of dogmatism it had become impossible to claim straight-forward knowledge of a necessary entity qua 'thing in itself'. Hegel's approach, therefore, was to claim that what is absolutely necessary is the way in which things appear to us - what Meillassoux calls the "the a priori forms of knowledge," and which he identifies elsewhere with the laws of nature and logic.²⁰ Whereas, for Kant, the necessity of these "correlational forms" could not be proven, and they could therefore only be described, Hegel thought that their necessity could be deduced.²¹ For Kant, the way reality appears to us is necessary only for us, and it is possible that the way reality is in itself is different from the way it appears. By contrast, for Hegel, on Meillassoux's account, if the necessity of the correlational forms can be proven, it doesn't make sense to suppose that there is an unknowable world 'in itself' lying behind appearances. This, then, is the sense in which Hegel 'absolutizes' the correlation. The way Meillassoux distinguishes here between Kant and Hegel is going to play an important role in the rest of this paper. As I will argue further down, the core of Meillassoux's own argument for the necessity of contingency actually depends on this shift from Kant to Hegel.

Meillassoux's second criticism of Hegel concerns the notion of contradiction. Meillassoux argues that, because contingency is absolutely necessary, contradiction is impossible: if a contradictory entity did exist, this entity would be necessary, since it could support all contradictory predicates, including that of being and non-being. However, since he believes to have shown, with his proof of the principle of factuality, that contingency and contingency alone is necessary, there can be no necessary entity; therefore, a contradictory entity is equally impossible.²² It is on this point that Meillassoux both learns from Hegel, and sees himself as going beyond him in a crucial way. As he writes in the interview with Harman:

²⁰ AF 38; 54.

²¹ AF 38.

²² AF 69.

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Hegel, along with Marx, was my only true master: the one on whom I had to depend in order to achieve my own thinking ... To my mind, believing in real necessity (metaphysics) and defending it with the greatest degree of rigor, obliges one to become a dialectician, and thus to be condemned to the stating of contradictions. Hegel understood this better than anyone. He unveiled the core of all metaphysics as a pure and simple contradiction, and demonstrated that if one wishes to continue to defend the former absolute necessity, it would be necessary to rehabilitate the notion of contradiction, which is the irrational notion par excellence. And here we find the true greatness of the dialectic: it exhibits the contradictory character of all real necessity. And conversely, it indicates the price that must be paid by the absolute refusal of all ontological contradiction: the related refusal of any necessity of things, laws, or events.²³

This is the context in which, in *After Finitude*, Meillassoux accuses Hegel of being a “thinker of absolute identity.”²⁴ It is precisely because he affirms contradiction that Hegel has to reduce all becoming and difference to identity, and all contingency to necessity.²⁵ Meillassoux reaffirms this point a few pages later: although Hegel admits a “moment of irremediable contingency” into his system, this moment is introduced only to show that nothing, not even contingency, escapes the necessity of the Hegelian absolute. Contingency,

23 Harman, *Quentin Meillassoux*, 168-169.

24 AF 70.

25 As Žižek notes, however, Hegel does not actually claim that contradictory entities can exist. It is precisely the impossibility of contradiction which causes finite things to be destroyed: “In another ambiguous (mis) reading of Hegel, Meillassoux claims that the dialectical principle of contradiction (contradictions are really present in things) excludes any change: change means a transformation of p into non-p, of a feature into its opposite, but since, in a contradiction, a thing already is its opposite, it has nowhere to develop into ... Here, however, Meillassoux misses the point of Hegelian dialectical movement: contradiction is necessary and at the same time impossible; that is, a finite thing precisely cannot be simultaneously A and non-A, which is why the process through which it is compelled to assume contradiction equals its annihilation” (*Less than Nothing*, 628).

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in Hegel, is “deduced from the unfolding of the absolute, which in itself, qua rational totality, is devoid of contingency. Thus, in Hegel, the necessity of contingency is not derived from contingency as such and contingency alone, but from a Whole that is ontologically superior to the latter.”²⁶

On Meillassoux’s reading, therefore, Hegel is not only a thinker of absolute identity, but also of rational totality, the Whole in which all differences are reconciled. This is the orthodox view of Hegel which has been propagated, in one way or another, by most of the luminaries of the continental tradition, including Heidegger, Derrida, Deleuze and Foucault. This view, however, is challenged by many contemporary Hegel scholars. Žižek’s and Gabriel’s interpretations, which we will discuss further on, are the most interesting for this discussion, because (unlike most scholars who publish in English) they engage directly with the ‘French’ version of the thesis that Hegel is a thinker of totality, which Meillassoux seems to adhere to.²⁷ Their disagreement with Meillassoux with regards to his interpretation of Hegel centre precisely on these two points: the status of necessity and contingency in Hegel, and the question of totality. As we will see, both Žižek and Gabriel argue that Hegel is not a thinker of totality, at least not in the sense generally ascribed to him, and that this is why Meillassoux’s critique of Hegel fails.

1.2 Hegel’s role in the argument for the principle of factuality

Aside from Meillassoux’s rather throwaway criticisms, Hegel plays a less obvious but much more interesting role in Meil-

26 AF 80.

27 Many of the prominent Anglo-American Hegel scholars also try to defend a Hegel who is not dogmatic or ‘metaphysical’ in the traditional sense, either through a ‘non-metaphysical’ interpretation (e.g. Pippin or Brandom) or a ‘revised metaphysical’ interpretation (e.g. Beiser, Stern or Houlgate). The background of their debate is quite different, however, and it does not really overlap with Meillassoux’s concerns. For a brief overview of this issue, see Frederick C. Beiser, *Hegel* (New York: Routledge, 2005), 53–57. I return to this issue in some more detail in footnote 62 below.

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lassoux's central argument in *After Finitude*: his proof of the principle of factuality, or the necessity of contingency. This argument, which offers a rational proof of Meillassoux's own position, is the core of his thesis, and it seems to me that it is also the most difficult and the least clearly argued part of the book. Because the rest of Meillassoux's theses - including the possible derivation of a mathematical absolute, the status of ancestral statements, the critique of correlationism, the derivation of the principles of non-contradiction and contingent existence, and the non-totalizability of the possible - depend on the success of this argument, Meillassoux's entire project stands or falls with it.

What does Meillassoux seek to demonstrate in this argument? Firstly, that everything which exists could really be otherwise, and secondly, that this principle constitutes the only absolute: "First, that contingency is necessary, and hence eternal; second, that contingency alone is necessary."²⁸ He tries to prove this through a rational argument where, firstly, he assumes that, as he puts it in *Iteration, Reiteration, Repetition*, "the space of the philosophically thinkable" is exhausted by a number of contrasting positions²⁹ and, secondly, he proceeds by eliminating each position one by one in order to show that his version of speculative materialism³⁰ is the only tenable one.

The most important step of the argument is the confrontation between correlationism and idealism. Before we deal with this argument directly, two questions of terminology arise which need to be clarified first. The first has to do with the distinction between various forms of idealism, and the historical philosophers who Meillassoux takes to have held

28 AF 65.

29 IRR 7, footnote 3.

30 Meillassoux also uses the term 'speculative materialism' to refer to other theories which claim that it is possible to think something which exists independently from thought, such as Epicureanism (AF 36). These varieties of naive materialism have been refuted by correlationism, however; so Meillassoux's speculative materialism is in fact a 'revised' speculative materialism.

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these positions. The second question is about the various expressions which Meillassoux uses to refer to the ‘correlational forms’, the necessity or contingency of which is at issue in the argument.

In *After Finitude*, the distinction Meillassoux draws between subjectivist metaphysics, subjective idealism and absolute idealism is not very clear. In *Iterations*, Reiteration, Repetition Meillassoux acknowledges this problem, and attempts to clarify his position by grouping together all three of these positions under the header ‘subjectalism’.³¹ As I will argue, however, the argument for the principle of factuality depends in an important sense on a distinction between subjective and absolute (or Hegelian) idealism.³²

In order to be as clear as possible, let me try to set out these distinctions in some detail. In the wake of Kant, it is traditional to distinguish between three forms of idealism: Kantian transcendental idealism, ‘subjective’ idealism and ‘objective’ or ‘absolute’ idealism. Subjective idealism (usually associated with Fichte) and absolute idealism (associated with Schelling and Hegel) are two alternative responses to what the German idealists saw as the central problem with Kant’s philosophy: his postulation of an unknowable thing-in-itself, and the danger of scepticism arising from the attendant two-world metaphysics. Put very crudely, subjective idealism would attempt to reduce the objectivity of the things-in-themselves to the positing activity of an absolute ‘I’ or ‘Ego’, while absolute idealism would seek to explain both the objective and subjective aspects of experience in terms of a unifying ‘ground’ or ‘absolute’.³³

31 IRR 2-3.

32 Meillassoux refers to Hegel’s idealism as “absolute idealism” (AF 38) as well as “speculative idealism” (AF 59).

33 Of course, these distinctions, and the extent to which individual philosophers can be allocated to one form of idealism or another, is the subject of extensive debate. See Beiser, *German Idealism*. Beiser includes both Kant and Fichte under subjective idealism, and Hölderlin, Novalis, Schlegel, Schelling and Hegel under absolute idealism. As Beiser shows, the difference between subjective and objective idealism is easily exaggerated

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In *After Finitude*, Meillassoux uses the term ‘subjective idealism’ in a much broader sense. Under this term (for which he also uses ‘subjectivist metaphysics’),³⁴ he seems to sweep together a great number of philosophical positions: Berkeley, those philosophers who “absolutize the correlation” (including Hegel and Schelling, as well as Leibniz, Bergson, Schopenhauer, Nietzsche and Deleuze), and the ‘subjective idealist’ in the argument for the principle of factuality, who corresponds more precisely to the subjective idealist in the sense mentioned above. As I mentioned, he clarifies his position in *Iteration, Reiteration, Repetition* by classing all of the above as subjectalists. However, this does not solve the problem altogether. Firstly, one might reasonably disagree with the way Meillassoux jumps over all distinctions, not only between different forms of idealism, but also between idealism and all other forms of ‘subjectalism’. More importantly for the present argument, however, Meillassoux himself does actually distinguish between subjective idealism and speculative or absolute idealism (i.e. Hegel), while at the same time appearing to conflate them. In the argument for the principle of factuality Meillassoux presents the position of the ‘subjective idealist’ as follows. The subjective idealist maintains that “I cannot think of myself as no longer existing without, through that very thought, contradicting myself. I can only think of myself as existing, and as existing the way I exist; thus, I cannot but exist, and always exist as I exist now.”³⁵ The subjective idealist maintains, therefore, that subjectivity – mind, ideas, thought, consciousness – is necessary, because denying its existence gives rise to a contradiction. At a stretch, this position might be attributed to Berkeley or Fichte, but it hardly seems appropriate to describe Schelling’s philosophy of nature or Hegel’s absolute idealism. As the argument proceeds, however,

(and is partly the result of Hegel’s own reading of his predecessors as ‘subjective’ idealists). For example, Fichte’s concern with the existence of an objective reality runs much deeper than the caricatured portrayal as a subjectivist by Hegel and others would suggest.

34 AF 38; 52.

35 AF 55.

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Meillassoux does seem to also include the “speculative idealist” in this position.³⁶ But elsewhere in *After Finitude* he ascribes quite a different position to the “absolute” or speculative idealist, who he there identifies explicitly with Hegel. From this alternative point of view absolute idealism consists not in claiming the irreducibility of thought, but in absolutizing the correlation. As I mentioned above, in Hegel’s case, this absolutization consists in claiming that the “correlational forms”, the “structural invariants” in our experience of the world are absolutely necessary, as opposed to Kant’s claim that they are merely necessary for us.³⁷ As I will argue, the difference between these two variants of idealism, although implicit and not clearly marked by Meillassoux himself, is important to his argument for the principle of factuality and greatly influences the conclusions we can draw from it.³⁸

To understand this point we have to return to Meillassoux’s distinction between Hegel and Kant, in order to explain what

36 Meillassoux sneaks in the speculative idealist almost unnoticed: the correlationist has to think the contingency of reality as a real possibility, because otherwise “it would never have occurred to you not to be subjective (or speculative) idealist” (AF 59).

37 AF 38.

38 Adrian Johnston argues that Meillassoux’s conflation of various forms of idealism is part of his strategy. Johnston points out that Meillassoux does not give conclusive arguments against idealism: he seems to hold that a Berkeleyan position of extreme solipsism is rationally irrefutable. Instead, he tries to show that correlationists, who maintain that the world in itself is unknowable, are forced to choose between realism and absolute idealism: Meillassoux “tries to force non-absolutist correlationists (such as Kantian transcendental idealists and various stripes of phenomenologists) to choose between realism (such as that of anti-correlational speculative materialism) and absolute idealism (which, as Meillassoux’s reference to Berkeley reveals, is presumed without argument to be *prima facie* untenable in its ridiculous absurdity)” (‘Hume’s Revenge: A Dieu, Meillassoux?’, 98). This interpretation seems accurate, especially from the vantage point of Meillassoux’s clarification in ‘Iteration, Reiteration, Repetition’. But the ambiguity about the status of the idealist remains. What is the “absolute idealism” to which Johnston refers above? Is it the (Berkeleyan) philosopher of absolute subjectivity, or the (Hegelian) absolute idealist?

he means by ‘correlational forms’. The question of the status of these correlational forms runs throughout the argument for the principle of factuality. It is important to point out the connection between a number of different terms which Meillassoux uses, at different points in *After Finitude*, to refer to the same thing. What he calls, in relation to Kant and Hegel, the “a priori forms of knowledge” or “correlational forms”³⁹ he refers to later as “invariants” or “structural invariants” which “govern the world.”⁴⁰ These structural invariants are, moreover, identified with the laws of nature and logic, “physical and logical laws.”⁴¹ The difference between Kant and Hegel (or, in the argument for the principle of factuality, between the correlationist and the idealist) is that Kant argued that, while our experience of the world is governed by such structural invariants (his categories and the forms of time and space), and these invariant forms of our experience are indeed necessary ‘for us’, we cannot conclude from this that they are absolutely necessary, because it is possible that the way things are in themselves is actually very different from the way they are given to us. On Meillassoux’s view, Hegel, as we have seen, maintained that these structural invariants (for Hegel, these would be the concepts of the *Science of Logic*) can in fact be proven to be necessary and are therefore themselves absolute, and not merely the way our experience happens to be constituted. The point I want to make is that because the aim of Meillassoux’s argument for the principle of factuality

39 AF 38.

40 AF 39; 53-54. Comparing these two passages shows that Meillassoux identifies the correlational forms, structural invariants and laws of nature and logic: “Facticity ... pertains to those structural invariants that supposedly govern the world - invariants which may differ from one form of correlationism to another, but whose function in every case is to provide the minimal organization of representation: principle of causality, forms of perception, logical laws, etc.” (39). “By turning facticity into a property of things themselves - a property which I am alleged to know - I turn facticity from something that applies only to what is in the world into a form of contingency capable of being applied to the invariants that govern the world (i.e. its physical and logical laws)” (54).

41 AF 54.

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is to show that the laws of nature and logic are contingent, and he identifies these laws with the Kantian or Hegelian correlational forms, the ultimate referent of the ‘idealist’ in this argument is the Hegelian absolute idealist and not the subjective idealist.⁴² The issue at stake in the argument is the necessity or contingency of the laws of nature and logic, the structural invariants of experience, and not just the existence of something independent of thought. Meillassoux has presented Hegel as the thinker who maintains that these structural invariants are necessary; therefore, it would seem to be Hegel who is the main foil in Meillassoux’s argument against correlationism. Although this is not how Meillassoux himself presents his argument, my point is that Hegel’s role in the argument is greater than Meillassoux lets on.

Let us look at Meillassoux’s argument in some more detail to make this point clear. The argument takes the following course. According to Meillassoux the correlationist (e.g. Kant) wants to argue that it is possible, but not necessary that the world in itself is completely different from the way it is given to us. According to correlationism, we simply cannot know whether there is a metaphysical absolute beyond what we experience, or whether the way we experience things is eternally necessary. On correlationist terms, it is therefore perfectly possible that the idealist (on my reading, Hegel) happens to be right that the structural invariants of experience are necessary, but it is illegitimate for the idealist to claim that we can know this absolutely.

Accordingly, as Meillassoux claims, for the correlationists we are dealing with “possibilities of ignorance”: various forms of metaphysical dogmatism (the claim that there is a substantial absolute of this or that kind), idealism (the claim

42 Brassier makes the same point implicitly. His reading of Meillassoux’s argument for the principle of factuality also takes the difference between Kant and Hegel on the necessity of the correlational forms as a starting point, and argues that the main opposition in Meillassoux’s argument is between strong correlationism and the Hegelian absolutization of these correlational forms, or the “cognitive structures governing the phenomenal realm” (*Nihil Unbound*, 65).

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that the forms of our experience are absolutely necessary) and even speculative materialism (the claim that it is really possible for these forms to change without reason) are all possible, in the sense that we do not know which of these (mutually exclusive) options is really the case. All we can know is what is in fact given to us in experience. Meillassoux, on the other hand, wants to claim that we can really know that it is actually possible for everything to change without reason; that “the in-itself could actually be anything whatsoever and that we know this.”⁴³ How does Meillassoux move from the epistemological claim of correlationism to his own ontological claim? As he puts it himself: “How then are we able to claim that this capacity-to-be-other is an absolute - an index of knowledge rather than of ignorance?”⁴⁴

How does he accomplish this move from ignorance to knowledge? This is the crux of the argument for the principle of factuality in *After Finitude*, where he tries to fix the correlationist on the horns of a dilemma.⁴⁵ Either a) the correlationist admits that the “structural invariants” of our experience - the laws of nature and logic - could really be otherwise, instead of his original claim that we simply cannot know whether or not they are different in themselves from how they appear to us, or b) he has to admit to idealism, because if these laws could not really be otherwise, that means they are absolutely necessary - the position, we have seen, which Meillassoux ascribes to Hegel.

Meillassoux repeats the argument in slightly different forms. The difference between these versions to me does not seem trivial, and it rests precisely on the status of the idealist, which, as I noted, changes over the course of the argument, something about which Meillassoux is not very clear. The ‘subjective idealist’ in the first argument - the conversation between dogmatist, atheist, agnostic, subjective idealist and speculative materialist - maintains that it is impossible for

43 AF 65.

44 AF 56.

45 AF 54-59.

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me to think my own death, and that therefore thought itself is absolute, since it cannot think its own absence.⁴⁶ As I mentioned above, this seems to correspond more closely to the subjective idealist in the traditional sense (Berkeley or Fichte, as opposed to absolute idealists such as Hegel). Meillassoux then argues that the (correlationist) agnostic cannot refute the subjective idealist without maintaining that it is possible to think something which exists independently from thought - i.e., something non-correlational. Because the subjective idealist holds that it is impossible to think my own death, the correlationist has to argue precisely that I can think my own death, not just as a correlate of my thought (because this would lead back to subjective idealism) but as a real possibility. In the second, more general version of this argument, Meillassoux makes it clear that the argument not only forces the correlationist to concede that something can exist independently from thought, but also that the structural invariants of our experience, the laws of nature and logic,⁴⁷ could be different from the way they are and could change for no reason whatsoever. Here, as indicated by the stress on the facticity of the correlational forms or structural invariants, Meillassoux does seem to be referring to Hegel: this argument depends on the distinction between Hegel and Kant made earlier, and the idealist here stands in for both the “subjective” and the “speculative” idealist.⁴⁸

Meillassoux’s argument could be summarized in the following way. Note that Meillassoux is not just concerned to show, against the subjective idealist, that there is a reality

46 AF 55-57.

47 With regard to the laws of logic, it must be remarked that Meillassoux claims that at least one fundamental law of logic - the principle of non-contradiction - is necessary, and that this necessity can be derived from the principle of factuality (see below; AF 80; Quentin Meillassoux, ‘Potentiality and Virtuality’, in *The Speculative Turn*, 232). Given his identification of the ‘laws of nature and logic’ with the ‘structural invariants of experience’, it seems likely that the laws of logic which, on his view, are contingent, are more determined sets of ‘laws’ such as Kant’s categories and Hegel’s concepts.

48 AF 59.

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independent of thought. The main thrust of his argument is to prove that the laws of nature and logic, the way in which things necessarily appear to us, could themselves be subject to change. I think the argument can be reduced to a simple logical disjunction, which takes two different forms:

1a. Either it is really possible for the structural invariants of our experience (the ‘for-us’) to be different from the way things are in themselves (the ‘in-itself’), or it is not.

1b. If it is not really possible, this means that some form of idealism holds, because then the structural invariants of our experience are absolute.

1c. If we refuse to accept idealism, therefore, it is really possible for the in-itself to be different from the for-us. But if this possibility to be otherwise is a real possibility, the correlationist can no longer claim that we simply do not know whether the “structural invariants” of our experience, the laws of nature and logic are necessary or not: we know that they are not necessary, because they could really be different from the way they are, presently, for us.

In order to escape idealism, Meillassoux argues, the correlationist has to continue to distinguish between the ‘for-us’ and the ‘in-itself’. The idealist’s claim is that there is no difference between the way things appear to us and the way they really are, because we know that the way things necessarily appear to us, the structural invariants of our experience, are in fact absolutely necessary. But Meillassoux’s speculative solution also leads to the collapse of the distinction between in-itself and for-us. What the correlationist took to be a difference between the world as it is in itself (which is unknowable) and the world as it appears to us (which is necessary, but only for us) is in fact a difference between the world as it appears to us and another really possible way in which the world might appear to us. There is, therefore, no unknowable in-itself, just as there is no deeper reason underlying appearance: all there is are contingent things, contingent laws and contingent thoughts. “There is nothing beneath or beyond the manifest

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gratuitousness of the given - nothing but the limitless and lawless power of its destruction, emergence or persistence.”⁴⁹

Meillassoux’s argument could therefore be rephrased as follows:

2a. Either it is really possible for the structural invariants of our experience to be other than they are, or it is not.

2b. If it is not really possible, we have to affirm idealism, because then these invariants would be absolute.

2c. Therefore, if we reject idealism, the structural invariants of our experience - the laws of logic and nature - can really be otherwise.

We can now see how Meillassoux proves the necessary contingency of all things. He eliminates, step by step, the possible candidates for what might exist necessarily. The contingency of everyday things, such as vases and books, is readily apparent: they might not exist, and when they exist they can be destroyed. The only other candidates for absolute existence are the correlation (either in the form of a simple hypostatization of thought or mind, or in the form of some transsubjective principle such as life, will or spirit), and the structural invariants of our experience, i.e. the laws of nature and logic. Since he has demonstrated the non-necessity of thought’s existence in the argument about death, and the non-necessity of the laws of nature and logic in the argument sketched above, there can be no necessary entity, and the contingency of all things must be the only thing which is absolutely necessary.⁵⁰

Now, let me add some questions about the different steps in this argument. Firstly, Meillassoux uses the term ‘absolute’ in two different ways. In the argument about death, absolute

49 AF 63.

50 In IRR, Meillassoux distinguishes between these levels as follows. Everyday things are contingent: we know that they can change. The laws of nature are a fact: we can conceive of them changing, but we do not know if it is possible. The correlation is an arche-fact: we cannot prove its necessity, but we cannot conceive of its being different either (IRR 9).

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means ‘existing independently of thought’. In the following steps, it means ‘absolutely necessary’. In the first step of his argument, he argues for the existence of an absolute (something not correlated to thought) by showing that correlationism, in order to escape idealism, needs to maintain that it can think its own non-existence. In the second step, however, he uses ‘absolute’ to mean the absolute necessity (not just for thought, but in itself) of everything’s capacity-to-be-other; an absolute necessity at which he arrives through the logical elimination of alternate possibilities. It is not clear to me that this move from one sense of absolute to the other is unproblematic.⁵¹

Secondly, the entire argument depends on the rejection of idealism. But, as I said, Meillassoux is not at all clear about the role idealism plays in the argument, and precisely what he means by idealism - in particular, he hesitates and shifts between the use of the ‘subjective idealist’ and the ‘absolute idealist’ in his argument. Adrian Johnston argues that Meillassoux does not in fact provide any reasons against absolute idealism, but holds - as the argument above demonstrates - that we must choose between idealism and speculative materialism, where he thinks that the former is obviously absurd.⁵² In fact, Meillassoux does take his line of argumentation to have already excluded (at least some form of) idealism,⁵³ so that a return to Berkeley, like a return to weak correlationism, has become impossible. But, as Johnston correctly notes, he does not give conclusive arguments for choosing one horn of the sketched dilemma over the other. The rejection of Berkeleyan subjective solipsism may be the result of the fact that Meillassoux thinks correlationism successfully undermines this position, or simply, as Johnston suggests, of philosophical taste.⁵⁴ But it is not at all certain that the rejection of subjective

51 On this question, see Bart Zantvoort, ‘The Absolute’, in *The Meillassoux Dictionary*, ed. Peter Gratton and Paul J. Ennis (Edinburgh: Edinburgh University Press, 2014).

52 Johnston, ‘Hume’s Revenge: À Dieu, Meillassoux?’, 98. See footnote 37 above.

53 AF 60.

54 ‘Hume’s Revenge: À Dieu, Meillassoux?’, 99.

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idealism in the argument about death implies that all forms of ‘idealism’, in the very broad sense of holding that some of the ‘structural invariants of our experience’ are necessary, has thereby become impossible.

Part 2: Hegel as a speculative materialist

Let me now turn to the similarities between Meillassoux and Hegel. It is clear that Hegel is, even on Meillassoux’s terms, a speculative philosopher, since he claims that thought can think the absolute. But on what grounds could we claim that Hegel is also a materialist philosopher? Doesn’t that seem to fly in the face of all evidence? As we will see further down, Žižek argues that Hegel is a materialist thinker precisely because he does not maintain that the world is a closed totality, and because he does not adhere to the principle of sufficient reason; Žižek’s Hegel is, in short, exactly the opposite of Meillassoux’s Hegel. It is true that Hegel and Meillassoux are much closer than Meillassoux would seem to allow on a number of key points. Firstly, Meillassoux’s speculative abolition of the distinction between the ‘for-us’ and the ‘in-itself’, which I touched upon above, actually echoes Hegel quite closely. Secondly, Hegel, like Meillassoux, also criticizes the principle of sufficient reason, even though he is one of the main targets of Meillassoux’s critique on this point.

2.1 *The abolition of the in itself*

We have seen how Meillassoux’s critique of correlationism ended up cancelling the Kantian distinction between the world as it appears to us and the notion of an unknowable world in itself: for Meillassoux, there is nothing beyond the facticity of the given. But did Hegel not argue precisely this: that there is no mysterious ‘essential’ world lying behind the given, but that what appears to us is the world in itself? This is the upshot of the theatrical gesture recounted by Hegel in the *Phenomenology of Spirit*: when we sweep away the curtain

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in the inner sanctum of the temple, we see that there is in fact nothing behind it.⁵⁵ And we could read the following passage from the *Science of Logic* as a mocking criticism of what Meillassoux calls the correlationist ‘codicil’ (AF 13), the tendency to add to every statement about the world the remark that ‘sure, but that’s only the way it appears for us’: “To say that admittedly, we have no proper knowledge of things-in-themselves but we do have proper knowledge of them within the sphere of appearances ... is like attributing to someone a correct perception, with the rider that nevertheless he is incapable of perceiving what is true but only what is false.”⁵⁶

Both Meillassoux and Hegel argue that thought is capable of thinking the absolute because there is no unbridgeable gap, in principle, between the way the world appears to us and the way it is in itself.⁵⁷ In maintaining this position, both of

55 Georg Wilhelm Friedrich Hegel, *Phenomenology of Spirit*, ed. J. N. Findlay, trans. A. V. Miller (Oxford: Oxford University Press, 1977), 103.

56 Georg Wilhelm Friedrich Hegel, *The Science of Logic*, trans. A. V. Miller (New York: Humanity Books, 1969), 46 (henceforth quoted as SL). That this constitutes a criticism specifically of Kant can be seen, for example, from the following passage: “Even the Kantian objectivity of thinking itself is in turn only subjective insofar as thoughts, despite being universal and necessary determinations, are, according to Kant, merely our thoughts and distinguished from what the thing is in itself by an insurmountable gulf. By contrast, the true objectivity of thinking consists in this: that thoughts are not merely our thoughts but at the same time the in itself of things and of the object-world [des Gegenständlichen] in general ... [Objectivity] has the meaning last mentioned above, of what is thought to be in itself, what is there, in contrast to what is merely thought by us and therefore still different from the matter itself or in itself.” G.W.F. Hegel, *Encyclopedia of the Philosophical Sciences in Basic Outline. Part I: Science of Logic*, trans. Klaus Brinkmann and Daniel Dahlstrom (Cambridge: Cambridge University Press, 2010), §412s.

57 It could be argued, however, that even if both Hegel and Meillassoux collapse the two worlds of essence and appearance into one the distinction

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them seek to overcome scepticism with regards to the possibility of knowledge, as well as Kantian transcendentalism. We have seen Meillassoux's argument; how does Hegel arrive at his conclusion?

The amount of commentary on this issue is overwhelming, and I do not claim to be able to offer a comprehensive account here.⁵⁸ In rough outline, however, I think the issue can be stated fairly simply. There are two steps to Hegel's defence of the possibility of absolute knowledge: Firstly, his critique of scepticism, and second, his development of a self-reflective philosophical method in the *Logic*.

Hegel's critique of scepticism, which can be found in the *Phenomenology of Spirit*, has two elements.⁵⁹ Firstly, he thinks that he can show how scepticism arises, both as a philosophical position and as a stage in the development of individual

returns within this one world. In Hegel, this underlies the question about the relation between *Logic* and *Realphilosophie*, between the necessity of the (onto)logical structures described in the *Science of Logic* and the contingency of natural and historical events. Meillassoux, according to Hallward ('Anything is Possible', 140) and Johnston ('Hume's Revenge', 102; 110) makes a problematic distinction between the physical-applied-empirical-ontic level and the metaphysical-pure-logical-ontological level (Johnston argues, for example, that Meillassoux borrows selective evidence from empirical science, such as the results of carbon dating, while at the same time seeming to undermine the status of such evidence through his rationalist argument for hyper-chaos).

58 On this topic, see Sally Sedgwick, *Hegel's Critique of Kant* (Oxford: Oxford University Press, 2012).

59 The importance of the question of scepticism for Hegel has been widely noted. See, for example, Pippin, *German Idealism*; Michael N. Forster, *Hegel and Skepticism* (Cambridge, MA: Harvard University Press, 1989); Paul W. Franks, *All or Nothing: Systematicity, Transcendental Arguments, and Skepticism in German Idealism* (Cambridge, Mass.: Harvard University Press, 2005), 146–200; Markus Gabriel, *Transcendental Ontology: Essays in German Idealism* (New York: Continuum, 2011), 3–34.

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consciousness, from a more original position of immediate knowledge about the world. We become sceptical because the knowledge we gain through immediate experience, which at first seems to be the only possible source of certainty, turns out to be profoundly unreliable. The separation between thought and reality is, on Hegel's view, a necessary illusion, born of the frustrations we experience in exercising our limited capacity for knowledge and action. Secondly, Hegel argues that scepticism is itself internally inconsistent. The sceptical position leads to a performative contradiction: "Its acts and its words always contradict each other." This is the standard criticism against the sceptic: you say you don't know anything, but this is a claim to knowledge; you say hearing, seeing etc. are illusory, yet you can only claim this because you see and hear.⁶⁰ Furthermore, scepticism leads to a contradiction with regard to the position of consciousness. On the one hand, Hegel argues, the point of scepticism is to prove that consciousness is independent from external reality, that the determinations which it finds through sense-perception have no truth for it. On the other hand, however, accepting scepticism leaves consciousness with no criterion of truth, and therefore forces it to slavishly accept whatever situation it finds itself in and whatever experience it is presented with, as long as it can state to itself that this experience has no ultimate truth for it.⁶¹

On the basis of these arguments it seems reasonable to think that the separation between the subject and the object of knowledge, which the sceptic assumed, cannot consistently be maintained. Throughout the *Phenomenology*, therefore, Hegel argues that thought and being are at least in principle reconciled, that it is possible for subjective knowledge to have a true content, and that the task of philosophy is to work out what this content is.

The *Science of Logic* continues this line of argument in a

60 Hegel, *Phenomenology of Spirit*, 124-125.

61 Ibid. See also Gabriel, *Transcendental Ontology*, 31-32.

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number of ways. In the second book, on 'essence', Hegel starts off with the idea that appearance and essence are distinct, that "behind this being there is something else than being itself, and that this background constitutes the truth of being."⁶² He then proceeds to thoroughly dismantle this notion, by showing that all the classical dualisms in the history of philosophy - matter and form, essence and appearance, substance and accident, activity and passivity - mutually presuppose one another, and are ultimately impossible to maintain. Starting out from the premise, developed in the *Phenomenology*, that thought is not opposed to the world but is a part of it, the *Logic* tries to work out what being must be in order for thought to arise in it. As Gabriel rightly points out, although it is true that Hegel focuses on the nexus of thought and being, this does not mean, as Meillassoux would seem to think, that he claims there are no objects before there are subjects.⁶³ Rather, the idea is that we can deduce something about the structure of being by reflecting on the self-reflective process of thought. Subjectivity does not make objects possible, but it shows what being (including objects) must always already have been (even before the existence of subjects) in order for subjects to be possible. To clarify this with an example, think of diffraction imaging techniques which are currently being used to create images of sub-microscopic objects such as nanocrystals or proteins. Shooting radiation at such an object creates a diffraction pattern, from which the structure of the object can be mathematically reconstructed. Clearly, the object exists before its 'reflection' in the diffraction pattern, but this reflection nonetheless creates new information which allows us to meaningfully describe the original object.

On the basis of these considerations, it is possible to read Hegel's philosophy as an experimental, speculative, even fallibilist attempt to determine the "structural invariants" of thought and being, without claiming to fix them once and

62 SL 389.

63 Gabriel, *Transcendental Ontology*, xx.

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for all. Hegel believes, as he tries to show in the *Logic*, that philosophy can achieve self-transparency of method, which allows it to speculate and describe being through reason while at the same time retroactively justifying and securing its own procedure. This is made possible by the self-reflective, meta-theoretical structure of the *Logic*, which functions as a description of the fundamental categories which determine thought as well as things (such as being, negation, limitation, difference, etc.) while at the same time also constructing, justifying and critically delimiting these very concepts.⁶⁴

64 The question whether Hegel's *Logic* describes only the structures of thought or the structures of thought as well as the structures of being or things is the fundamental point of disagreement between so-called 'non-metaphysical' and 'metaphysical' readings of Hegel. Non-metaphysical interpretations, like Pippin's, claim that Hegel is basically working within a Kantian transcendentalist framework, and that the *Logic* does not describe the properties of things themselves but only the categories under which they could be given as objects of thought (Robert B. Pippin, *Hegel's Idealism: The Satisfactions of Self-Consciousness* [Cambridge University Press, 1989]). Ontological or metaphysical interpretations, like Houlgate's, claim "that the categories set out in his logic are both the necessary concepts of thought and the intrinsic determinations of beings themselves" (Stephen Houlgate, 'Hegel's Logic', in *Hegel and Nineteenth-Century Philosophy* [Cambridge: Cambridge University Press, 2008], 118-119). It must be noted that neither the non-metaphysical nor the metaphysical camp would agree with Meillassoux's interpretation of Hegel as a thinker of absolute necessity. Other non-metaphysical interpretations include: Klaus Hartmann, 'Hegel: a Non-Metaphysical View', in *Hegel: a Collection of Critical Essays*, ed. A. MacIntyre (New York: Doubleday Anchor, 1972); Terry Pinkard, *Hegel's Phenomenology: The Sociality of Reason* (Cambridge: Cambridge University Press, 1996); Robert Brandom, 'Sketch of a Program for a Critical Reading of Hegel. Comparing Empirical and Logical Concepts', *Internationales Jahrbuch Des Deutschen Idealismus* 3 (2005): 131-61. While their various approaches and reconstructions of Hegel differ greatly, these authors try to 'salvage' Hegel for contemporary philosophy by underplaying what they take to be Hegel's indefensible metaphysical claims and by restricting the

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So to what extent is Meillassoux's claim that Hegel 'deduces' the absolute necessity of the correlational forms accurate? Although it is true that the concepts of Hegel's *Logic* are necessary in a certain sense, the question what this sense precisely entails remains an issue of great dispute. I will return to this question further down. Moreover, we could also ask the same question about Meillassoux. As I have argued elsewhere,⁶⁵ Meillassoux does not strictly stick to the claim that the only thing which is necessary is contingency. In *After Finitude*, he tries to derive other necessary propositions from the principle of factiality, his so-called "figures."⁶⁶ These figures are, firstly, the fact that a contradictory entity is impossible, and secondly, the fact that (at least one) contingent entity necessarily exists. But the project he outlines in *After Finitude* goes much further than that. Meillassoux aims, firstly, to prove the absolute reach of mathematics: its capacity to describe entities which

scope of his philosophy to a transcendental-epistemological (Pippin) or social-epistemological (Pinkard, Brandom) account. Other interpreters have questioned this approach, arguing that a non-deflationary or metaphysical reading of Hegel does not entail a return to pre-Kantian dogmatic metaphysics. See, for example, Beiser, *Hegel*; Robert Stern, *Hegelian Metaphysics* (Oxford: Oxford University Press, 2009); Kenneth R. Westphal, *Hegel's Epistemology: A Philosophical Introduction to Hegel's Phenomenology of Spirit* (Indianapolis: Hackett, 2003); James Kreines, 'Hegel: Metaphysics without Pre-Critical Monism', in *Bulletin of the Hegel Society of Great Britain* 57/58 (2008): 48-70. It should be clear from my reading of Hegel here that my interpretation is also ontological, although to situate it exactly within the terms of the current debate would have to be a subject for another paper.

65 Bart Zantvoort, entries on 'The Absolute' and 'Hegel' in *The Meillassoux Dictionary*, ed. Peter Gratton and Paul J. Ennis (Edinburgh: Edinburgh University Press, 2014).

66 AF 80.

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exist independent from us.⁶⁷ Secondly, he aims to demonstrate the “absolute and ... unconditionally necessary scope” of the Cantorian transfinite.⁶⁸ Doing so would enable him, finally, to provide a speculative proof for the “legitimacy of the assumption that the stability of natural laws, which is the condition for every science of nature, can be absolutized.”⁶⁹ Contrary to what is sometimes thought, therefore, Meillassoux does not try to prove that the laws of nature could change at any moment. Instead, he wants to show that the stability of the laws of nature itself follows from his principle of the necessity of contingency: “Thus, it is a question of establishing that the laws of nature derive their factual stability from a property of temporality that is itself absolute.”⁷⁰ But if this stability can be derived, does this not mean that it is necessary? What is the difference, then, between the Hegelian ‘deduction’ and Meillassoux’s ‘derivation’?

2.2 The principle of sufficient reason: Groundless ground and retroactive causation

According to Meillassoux, Hegel ‘absolutized’ the principle of sufficient reason. He argues that because according to this principle everything which exists is fully determined by a reason underlying it or existing prior to it, the absolutization of this principle “marked the culmination of the belief in the necessity of what is.”⁷¹ To put this more simply, Meillassoux claims that for Hegel everything is necessary because everything exists for a reason. This criticism of Hegel, which

⁶⁷ AF 117.

⁶⁸ AF 127.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ AF 71.

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is again very traditional, has usually served to tie Hegel's supposed affirmation of necessity to his supposedly reactionary and conservative politics.⁷²

Hegel's own treatment of the principle of sufficient reason in the *Logic* is, however, very complex and highly subtle. It is, furthermore, the primary foundation for the argument, made by Žižek and to some extent by Gabriel, that Hegel is not a thinker of necessity at all, but leaves room for a far greater deal of contingency than is generally acknowledged. This argument, to which I will return in more detail below, is that, on Hegel's account, necessity is not a case of a linear progression from one given state of affairs (the cause) to another which necessarily follows from it (the effect). Rather, he claims that causes (or, more specifically for Hegel, 'conditions') only become necessary causes retroactively, after something has happened. The fact that something happens, however, depends on an irreducible moment of contingent becoming.

This point may seem distinctly un-Hegelian (as Gabriel notes, it has its origin in Schelling's notion of "belated necessity" [*nachträgliche Notwendigkeit*]).⁷³ In the section of the *Logic* on 'ground' (*Grund*), however, Hegel does argue in detail for the thesis that the 'coming of a thing into existence' involves a moment of irreducible contingency or "groundless absolute becoming."⁷⁴

The German word *Grund* can be translated into English as 'reason' as well as 'ground'. This double meaning expresses the fact that we can understand 'reason' in two ways: either as a principle of explanation, an account of why something

72 This is, for example, Adorno's claim in *Negative Dialectics* (New York: Continuum, 1981). While it is clear that the late Hegel was no revolutionary, claims that he was a conservative or even 'totalitarian' thinker are not supported by evidence. See, for example, Shlomo Avineri, *Hegel's Theory of the Modern State* (Cambridge: Cambridge University Press, 1972).

73 Gabriel, *Transcendental Ontology*, 121.

74 SL 476.

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is the way it is, which is only an explanation ‘for us’; or as a principle of foundation, in which case the reason is the ‘ground’ or ‘support’ which really causes the thing to be the way it is. Because they both collapse the distinction between in-itself and for-us, both Meillassoux and Hegel think there is a necessary connection between these two meanings: the account we give about why something exists really says something about why it exists. This is why Meillassoux thinks abolishing the principle of sufficient reason really entails the contingency of all things, and why he takes Hegel to hold the opposite position.

Hegel starts his discussion with the idea that “everything has its sufficient reason [*Alles hat seinen zureichenden Grund*].”⁷⁵ However, he notes immediately that this principle is problematic, because it actually consists of two contradictory perspectives. These two aspects he calls ‘formal ground’ and ‘real ground’.

‘Formal ground’ expresses the idea which Meillassoux takes to be Hegel’s concept of sufficient reason: that everything has its ground in something else, and that everything is fully determined, and therefore made necessary, by its ground. According to this point of view, “There is nothing in the ground which is not in the grounded, just as there is nothing in the grounded which is not in the ground. When we ask for a ground, we want to see the same determination, which forms the content [of the thing], double, one time in the form of something posited, and the other time in that of a determinate being which is reflected into itself, of essentiality.”⁷⁶

The problem with this mode of explanation, however, as Hegel points out, is that it is essentially tautological. It just says the same thing twice, once in the form of a reason, and

75 SL 446.

76 SL 457. My translation. Miller has “...When we ask for a ground, we want to see the same determination that is content, double, once in the form of something posited, and again in the form of a determinate being reflected into itself, of essentiality.”

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once in the form of a result. This, Hegel argues, is the way science explains things when we don't actually know the reason for a phenomenon. When we say 'gravity' as an answer to the question why heavy bodies are attracted to one another, this doesn't really explain anything, since the answer to the question what gravity is would be (in Hegel's time, in any case): the attractive force which causes heavy bodies to be attracted to one another. As Hegel says, in everyday life we would hardly be satisfied with such an explanation: "To answer the question, why is this person going to town, with the reason, the ground, that it is because there is an attractive force in the town which urges him in that direction, is to give the kind of reply that is sanctioned in the sciences but outside them is counted absurd."⁷⁷

The problem is, really, one that is analogous to Kant's distinction between synthetic and analytic knowledge. On the one hand, if it is to be a sufficient reason, the ground should be identical with what it grounds: the content of the determined thing should fully be explained by the ground, and there should be nothing in the thing which is not determined by the ground. But, on the other hand, if ground and grounded are really identical, the ground is not really a reason because it does not explain anything, and the concept of ground would not have any sense, because if there is no difference between ground and grounded there would be nothing to explain in the first place.

What we really seem to mean by 'ground', Hegel argues therefore, is a 'synthetic' principle of explanation: something which is not identical with the thing it grounds, but which nonetheless has a necessary connection with it. This is what he calls 'real ground': "When we ask for a ground, we really demand that the content of the ground be a different determination from that of the phenomenon whose ground we are seeking."⁷⁸

77 SL 458-459.

78 SL 462.

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This mode of explaining or ‘grounding’, Hegel argues, presupposes that there are two things or states of affairs which are connected with regards to one particular aspect, but are otherwise independent and determined in a variety of ways. He explains this as follows: when someone is a civil servant, for example, the ‘reason’ for this may lie in his or her particular talents (or education, or political connections, etc.). But the individual has many other determinations besides being a civil servant, and being a civil servant involves many other things besides whatever caused this particular individual to become one.⁷⁹ In this way, ‘real ground’ seems to connect two things in a more meaningful way than ‘formal ground’, because it can give rise to causal chains in which one thing is explained in terms of another thing which at the same time is really different from it.

This leads to another problem, however. Things always stand in a multiplicity of relations to other things, and which of the relations, or which of the aspects of a relation is to be taken to be the ground or reason for something depends on what Hegel calls “external reflection,” the arbitrary point of view of an observer.⁸⁰ For any particular thing, many reasons can be given, and nothing in the thing itself indicates which is the essential one. What is the reason, for example, Hegel asks, for punishment? Retribution, deterrence, rehabilitation or the protection of society are all valid answers, but none of these fully explains what punishment is. In real ground, the tautological necessity of formal ground is replaced with a meaningful but contingent connection. Because the necessity of a ‘real’ reason is not self-evident, but calls for a further explanation, the concept of real ground leads either to an arbitrary choice of one reason among many, or to a regress of reasons: “An endless going about, which arrives at no final determination; for any and every thing one or more good grounds can be given, and also for its opposite; and a host of

79 SL 461-466.

80 SL 465.

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grounds can exist without anything following from them.”⁸¹

The question is, therefore, how to reconcile the contentless necessity of formal ground with the productive contingency of real ground. One way of doing this, Hegel argues, is by distinguishing between the ‘real’ or material conditions (*Bedingungen*) which determine something and make it possible, and the formal reason which, when the conditions are present, actually occasions the event to happen or the thing to “enter into existence”.⁸²

It is easiest to illustrate this point with an example. In order for a house to be built, certain conditions need to be fulfilled: the appropriate materials need to be available, the weather needs to be good, the foundation solid, the workers skilled and present. However, all these things do not actually amount to a sufficient reason: as Hegel says, the conditions are indifferent to whether a thing actually results or not.⁸³ Even if all the conditions are fulfilled, the building of the house does not necessarily follow: it is still possible for the workers to decide, at the last moment, to use the building materials and the fine weather to create a large bonfire. The conditions only become the conditions for building a house when the house is actually built. They are necessary, in the sense that they are part of the explanation of the building process, and the house could not be built without them, but they become necessary only retroactively, after the fact.

The movement from conditions to the existing thing - in this case, the decision to begin building - does not add another substantial, ‘final’ reason to the already existing conditions. It is impossible, Hegel argues, to conclude that something is made necessary by its conditions, because conditions are always conditioned by further conditions in an infinite

81 SL 466. Miller has ‘pursuit’ instead of ‘going about’ for ‘*Herumtreiben*’.

82 SL 474. Miller translates Hegel’s *Hervorgang der Sache in die Existenz* as “emergence of the fact into existence.”

83 SL 470.

chain.⁸⁴ The coming into existence of a thing, the shift from something being possible to something actually happening, is therefore not an instance of necessity, but a “groundless absolute becoming.”⁸⁵ The reality of conditions or causes does not constitute a finished totality, but is itself constantly rearranged by contingent events: only after something happens, because something happened, the infinite series of conditions or possible reasons is gathered together and circumscribed into a determinate constellation of causes.

It should be clear that this line of argument is one of the primary reasons which allows Žižek to claim that Hegel is a thinker of non-totality or, as Žižek puts it in Lacanian terms, ‘non-all’: “The key philosophical implication of Hegelian retroactivity is that it undermines the reign of the Principle of Sufficient Reason: this principle only holds in the condition of linear causality where the sum of past causes determines a future event - retroactivity means that the set of (past, given) reasons is never complete and ‘sufficient,’ since the past reasons are retroactively activated by what is, within the linear order, their effect.”⁸⁶ Further evidence for this thesis is provided by Hegel’s discussion of the role of the monarch in the *Philosophy of Right*, which Žižek discusses in *Less than Nothing*.⁸⁷ If it were not for the monarch, Hegel argues, the government would never be able to come to a decision, precisely because in any given situation an infinite number of causes and considerations, possible decisions and possible outcomes are at stake. If they are supposed to make a decision

84 SL 474.

85 SL 476-477. My translation. Miller has: “...Ground emerges merely as an illusory being that immediately vanishes; accordingly, this emergence is the tautological movement of the fact to itself, and its mediation by conditions and ground is the vanishing of both.”

86 Slavoj Žižek, *Less than Nothing*, 213.

87 Ibid. 421-430.

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purely on the basis of rational knowledge of the situation, the ministers will “waver endlessly” between “reasons for and against,” and be effectively paralyzed.⁸⁸ The monarch provides the ‘irrational’ moment of purely contingent decision which interrupts the deliberation of the government and allows them to proceed to action, without thereby exercising any real power.⁸⁹ The existence and the will of the monarch are “groundless”,⁹⁰ in the sense developed in the *Logic*: the decision of the monarch is an empty, contentless, contingent and formal gesture, but if it were not for this decision, the conditions and deliberations leading up to it would have remained inconclusive. Only through the absolutely contingent decision are the conditions retroactively posited as necessary.

What Hegel seems to be claiming, then, is that all beings and events are contingent or ‘groundless’, a position that would indeed bring him very close to Meillassoux. But is this really the case, or are some things - the laws of nature, the process of history, or the concepts of the *Logic* - excluded from this contingency? If Hegel is not as straightforwardly a partisan of necessity as Meillassoux claims, what is the status of necessity and contingency in his philosophy?

In order to answer this question, let me turn briefly to Žižek’s and Gabriel’s respective engagements with Meillassoux and Hegel. Both of them defend Hegel against Meillassoux by claiming that he does leave room for contingency, and that he is not the thinker of absolute totality Meillassoux claims he is.

Part 3: Necessity and contingency: Žižek and Gabriel on Hegel and Meillassoux

88 Georg Wilhelm Friedrich Hegel, *Elements of the Philosophy of Right*, ed. Allen W. Wood, trans. H. B. Nisbet (Cambridge: Cambridge University Press, 1991), §279.

89 This is Hegel’s famous statement that “in a well-ordered monarchy” the monarch only “says ‘yes’ and dots the ‘i’” (*Philosophy of Right*, §280add).

90 *Ibid.* §281; §282add.

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Similarly to what I have argued so far, Žižek thinks that Meillassoux's interpretation of Hegel is both traditional and mistaken, and that they are in fact much closer than Meillassoux admits. As he puts it, "Meillassoux [does] not openly acknowledge the Hegelian nature of his breakthrough," because "he endorses the standard reading of Hegelian dialectics as the description of the necessary selfdeployment of the Notion."⁹¹ The point on which Žižek sees them converging most particularly is the elimination of the difference between for-us and in-itself, which I discussed above. Meillassoux's "basic strategic move," Žižek claims, which is "deeply Hegelian," is the move "from the gap that separates us (finite humans) from the In-itself to the gap that is immanent to the In-itself"⁹² Meillassoux, like Hegel, transposes the division between in-itself and for-us into the thing itself: the failure of our knowledge to provide an absolute reason for reality as it appears to us is in fact a result of the actual contingency, groundlessness or absence of ultimate reasons in reality itself.

Žižek's views on this matter are a result of his decidedly unorthodox reading of Hegel. The move which he here sees Meillassoux reproducing is, in fact, on his account, the single most important point in Hegel's philosophy, on which his entire interpretation turns:

What makes Hegel unique? One of the ways to circumscribe this uniqueness of Hegel is to use the Lacanian notion of the "lack in the Other" which, in Hegel's case, points towards the unique epistemologico-ontological mediation absent in all three other Idealists: the most elementary figure of dialectical reversal resides in transposing an epistemological obstacle into the thing itself, as its ontological failure (what appears to us as our inability to know the thing indicates a crack in the thing itself, so that our very failure to reach the full truth is the indicator of truth). It is the premise of the present book [*Less than Nothing*] that this "fundamental insight" of Hegel has lost none

⁹¹ Žižek, *Less than Nothing*, 638.

⁹² Ibid.

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of its power today; that it is far more radical (and a far greater threat to metaphysical thinking) than all the combined anti-totality topics of contingency-alterity-heterogeneity.⁹³

As we can see, Žižek's interpretation of Hegel is underwritten by his reading of Lacan, whose notions of the 'non-all', the 'lack in the other' and 'drive' supply the building blocks for Žižek's claim that Hegel is, ultimately, a materialist. While there is no space here to go into Lacan's role in the matter in detail, it is worth looking briefly at Žižek's motivation for his claim about Hegel's materialism. For Meillassoux, materialism consists in the claim that thought can think things which are independent from or indifferent to thought's existence. By contrast, on Žižek's account, Hegel's materialism consists in the fact that Hegel does not (as Meillassoux supposes) reconcile all differences into a stable, harmonious whole: "Materialism has nothing to do with the assertion of the inert density of matter; it is, on the contrary, a position which accepts the ultimate Void of reality — the consequence of its central thesis on the primordial multiplicity is that there is no 'substantial reality', that the only 'substance' of the multiplicity is Void."⁹⁴ Žižek thus opposes materialism to the kind of idealism of which Hegel has traditionally been accused, namely the idea that the ideal is the reconciliation of contradictory reality without remainder or, in other words, that the world is a "closed totality".⁹⁵

For Hegel, reality is not given in advance as a completed whole, the necessary properties of which we then reconstruct in our reflection on it; instead, this 'whole' is continuously reconstructed in the process of its development. This is the meaning of 'retroactivity' in Hegel as Žižek understands it:

93 *Ibid.*, 20.

94 Žižek, 'Interview (with Ben Woodard)', 407.

95 Slavoj Žižek, *The Parallax View* (Cambridge, MA: MIT, 2009), 79. See also Žižek, *Less Than Nothing*, 453.

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because the conditions for an event become necessary only retroactively, necessity is actually contingent: “The process of becoming is not in itself necessary, but is the becoming (the gradual contingent emergence) of necessity itself.”⁹⁶ True, Hegel thinks some things are necessary, but their necessity is not itself grounded in a necessary higher being; rather, it is ultimately contingent, or, in Meillassoux’s terms, factual. Both Hegel and Meillassoux argue therefore, on Žižek’s view, for the “auto-normalization of chaos”: they try to show how both necessity and the stability of the laws of nature emerge from contingency.⁹⁷

There is one point, however, Žižek argues, where Meillassoux falls short of Hegel. In his concern with establishing the possibility of knowledge of things in themselves, Meillassoux basically remains tied to a Kantian framework. The real question, Žižek argues, is not how a subject could gain knowledge of an objective world, but how subjectivity emerges in the world in the first place: “The problem is not ‘Can we penetrate the veil of subjectively constituted phenomena to Things-in-themselves?’ but ‘How do phenomena themselves arise within the flat stupidity of reality which just is; how

96 Žižek, *Less Than Nothing*, 231.

97 Ibid., 637. A detailed account of Hegel’s theory of contingency can be found in Dieter Henrich, ‘Hegels Theorie über den Zufall’, in *Hegel im Kontext* (Frankfurt am Main: Suhrkamp, 1971), 157–186. Contrary to Meillassoux, Henrich argues that for Hegel things within the world (*innerweltlich Seienden*) are contingent. Necessity (i.e. necessary conceptual-logical structures, necessary ethical forms) arises out of contingent conditions, but this does not make these conditions themselves necessary. It is precisely the mark of necessity that it emerges regardless of what particular contingent circumstances actually obtain (the suggestion being, for example, that even if Einstein hadn’t lived someone else would have discovered relativity) (163). “Being as a whole” (*das Seinganze*) is necessary for Hegel, on Henrich’s view, but this necessity is to be taken only in a moral sense, that is, presumably, in a Fichtean or Kantian sense as a regulative principle (184–185).

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does reality redouble itself and start to appear to itself?’⁹⁸ Because of his anti-subjectalism, Meillassoux becomes blind to the central question of post-Kantian idealism: how is it that reality comes to reflect on itself? What does the existence of thought, of subjectivity, say about reality?⁹⁹

As we have seen above, Gabriel makes the same point. The fact that Hegel and Schelling start from this question about the subject does not mean that they think objects do not exist independently from thought: “Post-Kantian idealism is not a first-order theory according to which there would be no objects if there were not any subjects in the universe. In other words, it is not committed to ontic nonsense, as Meillassoux’s criticism of ‘correlationism’ suggests.”¹⁰⁰ The question is, rather, given that thought is a part of the world, since thought, obviously, exists, what must being be in order for there to be thought?

Hegel ... does not claim that there is some mega-entity, the whole, which encompasses everything else, from spatiotemporal objects to art, religion, and philosophy; the whole is not the all or some kind of other set ... That the true is the whole means rather that the very possibility of truth, of getting things right or wrong, can only be made sense of in higher-order reflection, for it refers to the constitutive conditions of truth-apt thought. In higher-order reflection we discover that the subject belongs to the world, that there is no objective world from which thought can be excluded. This does not entail that there is only thought.

98 Ibid., 643.

99 A similar critical point is made by Martin Hägglund (‘Radical Atheist Materialism: A Critique of Meillassoux’, in *The Speculative Turn*, 114–129), who argues that Meillassoux does not deal with the problem of the existence or emergence of consciousness adequately, and that his claim about the ex nihilo emergence of consciousness in ‘Potentiality and Virtuality’ undermines the core principles of scientific reasoning.

100 Gabriel, *Transcendental Ontology*, xx.

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It just means that we have to explain the fact that thoughts exist too.¹⁰¹

Gabriel also concurs with Žižek that necessity for Hegel is always “belated” or retroactive, and therefore the necessity of determined entities is actually contingent.¹⁰² They seem to differ, however, on a crucial point. For Žižek, retroactive causality holds not only for ordinary things or contingent events, but also for the concepts in Hegel’s *Logic*. The *Logic* itself is not a case of linear deduction, where each concept follows from the previous one according to logical necessity; instead, each concept emerges contingently and then retroactively ‘posits’ its conditions as necessary. This is where Gabriel disagrees, and where he opts to go with Schelling over Hegel. Hegel does think, on Gabriel’s account, that his absolute (which is not some kind of entity, but the methodologically self-transparent process of the *Logic* itself)¹⁰³ is non-contingently necessary. Even though for Hegel everything that happens is contingent, the field of possible determinations in which contingent things happen, which Gabriel calls ‘logical space’, is necessary: “According to Hegel, everything that there is, is intelligible, for everything is determined in the overall conceptual network of logical space. Since there can, in principle, be nothing outside of logical space, the reflection of logical space on itself is the only absolute available. Given that this absolute reflection takes place in the *Science of Logic*, Hegel can claim to expose the absolute, to make it explicit.”¹⁰⁴ According to Schelling, by contrast, the fact that there is anything whatsoever, and that this something is determined or determinable, is itself contingent: “It is impossible to go behind the necessary existence of an origin, to get to the nonconceptual being of

101 Ibid., xxi.

102 Ibid., 131–132.

103 Ibid., 113.

104 Ibid., 119.

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the whole and to find there a motivating reason or ground that makes sense of this being itself as world. That anything whatsoever is, that is, that there is anything determinate, that being in the sense of determinacy is, is wholly groundless, resultant of a transition Schelling coins ‘willing.’¹⁰⁵ Unlike for Hegel, for Schelling the fact of the existence of logical space in which beings are determined is itself contingent.¹⁰⁶ Schelling thereby allows for a “margin of contingency” which Hegel, Gabriel claims, “obsessively seek[s] to overcome.”¹⁰⁷

Conclusion

There is no space here to go into the details of the question of contingency and necessity in Hegel and Schelling. On the whole, it seems that Žižek’s and Gabriel’s interpretations of Hegel provide a useful correction to Meillassoux’s overly hasty and traditional criticisms. With regards to the status of necessity and contingency, however, both of their readings of Hegel, as well as Meillassoux’s own theory, raise more questions than they answer. In particular, we have to ask: how far can contingency go, and what becomes of necessity? Contingency, it seems, is the new difference: the rallying cry of all detractors of necessity, identity and totality. But if everything is contingent, how do we explain the stability of the laws of nature and logic?¹⁰⁸ Take Hegel’s argument for

¹⁰⁵ Ibid., 92.

¹⁰⁶ Ibid., 132.

¹⁰⁷ Ibid., 121.

¹⁰⁸ Johnston makes this point against Meillassoux (‘Hume’s Revenge: À Dieu, Meillassoux?’; 101): “In terms of scientific practice, Meillassoux’s speculative materialism, centered on the omnipotent sovereign capriciousness of an absolute time of ultimate contingency, either makes no difference whatsoever (i.e., self-respecting scientists ignore it for a number of very good theoretical and practical reasons) or licenses

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the ‘groundlessness’ of things coming into existence: if this holds not only for human projects and decisions, but also for natural events, how do we explain the repeatability of scientific experiments? The same goes for the laws of logic: if they were contingent, wouldn’t meaning and knowledge be impossible? If everything is ultimately contingent, we still have to explain the success of science as well as the everyday garden-variety necessity which underlies our expectations and actions, and show how it arises from contingency. Both Meillassoux and Hegel seem to go in this direction. Hegel gives us a lot more to go on than Meillassoux - but then again, Hegel isn’t going to write any more books, and Meillassoux might.

It should be clear, in any case, that Meillassoux and Hegel have much more in common than a superficial reading of *After Finitude* would indicate. Meillassoux’s disavowal of Hegel seems to be an inheritance from an earlier generation of French philosophers who, traumatized by the spectre of a rather stereotyped Hegel, renounced him as the ultimate thinker of identity, totality and teleological history, while dealing with Hegel’s actual texts as little as possible (Derrida here being the exception). A more balanced approach to Hegel, which deals less with general methodological questions or the overall intent and character of Hegel’s philosophy and more with the actual content of his highly varied (and without doubt, at many points highly flawed) theoretical experiments, would be more productive.

past scientific mistakes and/or present bad science being sophistically conjured away by cheap-and-easy appeals to hyper-Chaos.” Hallward also makes a similar point (‘Anything is Possible’, 138–139).

Why Not Nothing? Meillassoux's Second Figure of Factiality and Metaphysical Nihilism

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ACCORDING TO QUENTIN MEIL-
lassoux, the *principle of sufficient
reason* ('PSR') is a philosophi-
cal fifth postulate. His project is to carry out an "adventure"
analogous to that of non-Euclidean geometry, this time within
philosophy.¹ But whereas Lobachevsky developed his hyper-
bolic geometry without *first* trying to demonstrate that the
fifth postulate was false (i.e. without trying to demonstrate the
consistency of Euclidean geometry *sans* the fifth postulate,
with its negation), Meillassoux believes he *can* demonstrate
that the PSR is (absolutely) false.² Indeed, it is his view that
this proof involves a species of certainty – or at any rate fun-
damentality – not available in mathematics.³

This view has been the subject of considerable scrutiny, and

1 Quentin Meillassoux, *After Finitude. An Essay on the Necessity of Contingency*, trans. Ray Brassier (London: Continuum, 2006), 92.

2 Ibid, 60.

3 Graham Harman and Quentin Meillassoux, "Interview with Quentin Meillassoux (August 2010)," in Graham Harman, *Quentin Meillassoux. Philosophy in the Making*, (Edinburgh: Edinburgh University Press, 2011), 169.

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I examine it briefly below (section §3). However, my primary interest is in what Meillassoux takes to *follow* from the falsity of the PSR. This is the subject of sections §4 and §5.

§2. The main target of *After Finitude* is a view Meillassoux calls ‘correlationist’ – for whom

thought cannot get outside itself in order to compare the world as it is ‘in itself’ to the world as it is ‘for us’, and thereby distinguish what is a function of our relation to the world from what belongs to the world alone.⁴

This general characterisation covers a broad range of different positions. (Whether it does so appositely or tendentiously is presently moot.) Meillassoux assigns it to Berkeley as well as to Kant, even though only the latter is a correlationist according to him. Here is the difference: Berkeley’s scepticism involves an *ontological* thesis: there *are* no things-in-themselves – or at least, there are only ideas. This is his take on the ‘primacy of the correlate’, but it is not correlationism *per se*. The latter is a thesis about *cognitive accessibility* inaugurated by Hume. It tends towards a *fideistic* disavowal of knowledge/rational thought of the absolute. Thus, whilst in each case we begin with a ‘subjective’ premise, only for Berkeley – and other forms of what Meillassoux (in his whiggish history of modern philosophy) calls ‘subjectalism’ – does this yield an ontological conclusion.⁵ For Berkeley the limits of the cognitively accessible – of the thinkable or knowable – are limits on reality itself; whereas for the correlationist this is not the case.

Correlationism bars access to ‘the absolute’, but what is that? The term ‘absolute’ is polyvalent for Meillassoux, and implies a number of equivalences. The absolute is, firstly, what is independent of human thought, what could exist without

4 Meillassoux, *After Finitude*, 3-4.

5 Quentin Meillassoux, “Iteration, Reiteration, Repetition: A Speculative Analysis of the Meaningless Sign,” trans. Robin Mackay, (2012), 6.

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us.⁶ But it also connotes Kant's thing-in-itself, God, the World *qua* totality, absolute infinity, and Being understood as the common nature of all that is. All of these things are beyond the pale according to the correlationist, and for Meillassoux we ought to take this sceptical threat very seriously – seriously enough, at any rate, to forswear all subjectalist temptation.⁷

This hydra-like temptation is characterised as follows:

the metaphysical reply to correlationism consisted rather in absolutizing the subjective in general... This absolutism took various forms, leading each time to the absolutization of one or many determinate forms of subjectivity, or even of the subject in its totality. Sensation was absolutised (Maupertius' and Diderot's hylozoism), as was reason (Hegelian idealism), freedom (the Schelling of 1809), perception (Bergson and the image in itself, in the first chapter of *Matter and Memory*), will (Schopenhauer), wills in their mutual conflict (Nietzsche's will to power), the self in its initial germ state (Deleuze's 'larval selves' in *Difference and Repetition*), etc.⁸

Although he does not use the term 'subjectalism' in *After Finitude*, Meillassoux describes a similar family of positions that all "hypostatise some mental, sentient, or vital term: representation in the Leibnizian monad; Schelling's Nature, or the objective subject-object; Hegelian Mind; Schopenhauer's Will; the Will (or Wills) to Power in Nietzsche, perception loaded with memory in Bergson; Deleuze's Life, etc."⁹ These subjectalists agree with Meillassoux that the door of the correlationist *asylum ignorantiae* has been left ajar – that the absolute is knowable after all – but disagree over where it leads. The subjectalists – Meillassoux assures us – all bring us back to something "mental, sentient or vital", which serves as an enduring substrate that is independent of, and prior to, everything else – and which is, indeed, a necessary being,

6 Meillassoux, *After Finitude*, 28.

7 *Ibid.*, 38.

8 Meillassoux, "Iteration, Reiteration, Repetition," 3.

9 Meillassoux, *After Finitude*, 37.

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a being whose non-existence is strictly impossible. Against this Meillassoux confidently demurs: there is no such being.

At the centre of this disagreement is the concept of *facticity*, which Meillassoux considers sufficient to ensure the victory of the correlationist – with whom he enters into temporary alliance – over the subjectalist. But what is facticity, and how is this victory assured? In Kantian terms, facticity results from the receptivity of human knowledge, which guarantees our ignorance of how things are like independently of our mode of access to them. So, if we think of the thing-in-itself as providing the sufficient reason for the given, then it is the inaccessibility of *this* reason that facticity expresses. Yet, for all this, there may nevertheless *be* a reason lying (as it were) behind the given, and compelling it to be the way it is rather than any other way. This is what engenders the fideistic element of correlationism. Facticity is *not* the contingency of the given *per se*, nor knowledge of phenomenal contingency: it consists, rather, in our ignorance of why the invariants of the given are, or have to be, invariant.¹⁰ It's not that I *know* that things *can* change: rather, I *don't know* why they *can't*. More specifically, this ignorance is premised on our inability to *demonstrate* that these invariances are necessary.¹¹ It is this facticity that Meillassoux wants to reveal as 'absolute', meaning not merely a mark of human ignorance but a "real property whereby everything and every world is without reason, and is thereby capable of actually becoming otherwise without reason."¹² We have to show that what appears to lack a reason from our viewpoint – like suffering – really does lack a reason. In the case of my ungrounded existence, there is a possible world where I do not exist, and the same is true for any thing, fact, or occurrence. When facticity is revealed

10 The invariants of the given include such things as the "principle of causality, forms of perception, logical laws, etc." Ibid, 39. These invariants, in the different types of correlationism, are the analogues of Kant's categories. Ibid, 93.

11 Ibid, 38–9. All we can do is "describe" them.

12 Ibid, 53. See also p. 56: the absolute is the capacity to be other as such (as theorised by the correlationist).

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to be absolute in this sense, we are in a position to infer that God, the ultimate ground of things, does not exist.¹³

§3. It is virtually axiomatic for Meillassoux that, since the ontological argument (together with all causal necessity) has been ‘recused’, “we cannot take the idealist path”.¹⁴ He writes:

It is the irremediable facticity of the correlational forms which allows us to distinguish both claims [Hegelian and Kantian] in favour of the latter. For once one has refused any possibility of demonstrating the absolute necessity of these forms, it is impossible to proscribe the possibility that there could be an in-itself that differs fundamentally from what is given to us.¹⁵

I read this as saying that, unless the subjectalist can proscribe the possibility of *p*, she ought not believe that *p* is impossible. A proscription requires a demonstration, which is a deductive argument whose premises, although perhaps not themselves deduced from a certain base, are nevertheless accepted by the person at whom the argument is targeted. Since the subjectalist cannot proscribe the contingency *or* the necessity of the correlational invariances, the correct attitude is to withhold judgement.

Unfortunately, although this recusal is central to Meillassoux’s position, he has little to say in its defense. To clarify, here is the premise that Meillassoux extracts from correlationism to use against the subjectalist: we can’t know anything about things as they are in themselves (i.e. absolutely) *except* what we can *demonstrate*, i.e. what we can *cogently argue for*.¹⁶

13 Ibid, 65.

14 Ibid, 60, 91.

15 Ibid, 38–9.

16 Cf. Immanuel Kant, *Critique of Pure Reason*, trans. Paul Guyer and Allen W. Wood, (New York: Cambridge University Press, 1998), 148 [B23/4]: “The critique of reason thus finally leads necessarily to science; the dogmatic use of it without critique, on the contrary, leads to groundless assertions, to which one can oppose equally plausible ones, thus to skepticism... the contradictions of reason, which cannot be denied and which are

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In other words, the argument against subjectalism and the PSR is conditional upon the rejection of dogmatism. This must be kept in mind when we read the following:

One establishes the principle [of unreason] without deducing it, by demonstrating that anyone who contests it can do so only by presupposing it to be true, thereby refuting him or herself... The sceptic is only able to conceive of the difference between the 'in-itself' and the 'for-us' by submitting the 'for-us' to an absence of reason which presupposes the absoluteness of the latter.¹⁷

In other words: the sceptic presupposes that unreason is absolute. But (1) *which* sceptic is this, and (2) *how* exactly does she presuppose the falsity of the PSR? Look at how Meillassoux defends his assertion that the principle of unreason is more basic than any other; in particular, *more basic* than the absoluteness of the *principle of non-contradiction* (PNC). It is because *the correlationist* can contrast the *facticity* of the PNC with its absolutisation, i.e. she can allow that contradictions are unthinkable *for us* without thereby acknowledging their *absolute impossibility*.¹⁸ No similar contrast, Meillassoux tells us, is available in the case of facticity – since this would require a *facticity of facticity*, which is self-refuting insofar as it involves relativizing facticity in terms of its own absolutisation.

The point I wish to emphasise is that this line of reasoning *need* not trouble the subjectalist, for whom facticity is

also unavoidable in dogmatic procedure, have long since destroyed the authority of every previous metaphysics.”

17 Meillassoux, *After Finitude*, 61.

18 *Ibid.*, 43. I think it is fair to say that Meillassoux lacks a stable understanding of where the PNC is supposed to fit into his argument, given his shift from claiming that its absoluteness follows from the principle of unreason, to the weaker claim that the absoluteness of the principle of non-triviality (PNT) follows therefrom (p. 78); a concession which is then ignored in subsequent discussion of Hume's problem (e.g. p. 90), and has the feel of a late revision. Meillassoux also overlooks the fact that it is self-refuting to deny the absoluteness of the PNT, given that phenomena would be inconsistent if the PNT could be absolutely true.

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relativised by the necessity of correlation, *not* by more facticity. Notice that in the passage just quoted, the phrase “is only able to conceive the difference” refers to what the correlationist needs in order to argue against subjectalism. Again, *what the correlationist needs to conceive* is a difference that is ‘radical’ enough to differentiate her view from that of the subjectalist, for whom some correlate or other necessarily exists. Meillassoux claims – contentiously – that this difference won’t be radical *enough* without absolute facticity (i.e. what I elsewhere simply term ‘contingency’).¹⁹ But even if this is right, not everything the correlationist needs is *thereby* shown to be possible. Yes, if the recusal of subjectalism requires X, then X cannot be consistently denied by the correlationist, or by anyone else who wishes to recuse subjectalism. However, this is not a problem for the subjectalist unless she accepts the goal of demonstrating the absolute to the correlationist. The subjectalist who denies this – i.e. who *happily* accedes to a classical (e.g. Leibniz) or neo-classical (e.g. Hartshorne) metaphysics; who denies that demonstrability is the criterion of absolute knowledge/cognition – has no reason to recuse her own position, meaning that *something else* is needed if Meillassoux’s argument is to be more than just an *ad hominem* against correlationists and their fellow-travelers.²⁰

In any case, it is not obvious that the correlationist *does* need absolute facticity to ward off the subjectalist threat.²¹

19 Ibid, 57. Cf. Ray Brassier, *Nihil Unbound. Enlightenment and Extinction*, (Palgrave Macmillan, 2007), 66–7.

20 Cf. Paul W. Franks, *All or Nothing. Systematicity, Transcendental Arguments, and Skepticism in German Idealism*, (Cambridge: Harvard University Press, 2005), 374.

21 Rae Langton reconstructs Kant’s argument for facticity (‘humility’) so that it requires the antecedent rejection of the PSR. However, on her view, contingency isn’t sufficient for humility anyway – because it’s compatible with fallible knowledge. See Rae Langton, *Kantian Humility. Our Ignorance of Things in Themselves*, (New York: Oxford University Press, 1998); and Rae Langton “Elusive Knowledge of Things in Themselves,” *Australasian Journal of Philosophy*, special issue honoring David Lewis 82 (2004), 129–36. (My present point is that contingency isn’t necessary for humility – this means, in effect, that the argument for humility needn’t

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To start with, it does not (obviously) follow, if I could fail to know a truth p , that p is a contingent truth. Although sceptical scenarios often turn on the possible falsity of my belief, there is no easily generalizable moral to be drawn from this. My point: scepticism does not require that I could actually be *mistaken* in my belief – otherwise it would be impossible not to know any necessary truth that I believe. But this is implausible: I could flip a coin when deciding whether to believe a mathematical proposition or its negation, and my resulting belief surely would not constitute knowledge. Another example: take any mathematical truth and imagine making a subtle mistake in the proof you construct for it. You either do not actually know that truth, or you might have failed to know it – but it is a necessary truth nevertheless. Similarly, suppose there are unknowable mathematical truths, whatever exactly ‘unknowability’ amounts to. They are then necessary but unknowable. Finally, think of philosophy instead of mathematics. It is not crazy to sympathise with the correlationist’s pessimistic attitude towards metaphysical knowledge. The existence of deep and apparently irresolvable disagreement concerning every fundamental philosophical question lends considerable support to scepticism regarding knowledge of their answers – and this is quite independent of whether we think of the underlying truths as contingent or necessary. But insofar as this is the case, we can readily motivate a sceptical attitude towards subjectalism *without* any dependence upon absolute facticity.

§4. The present paper *presupposes* a satisfactory solution to this problem. Perhaps equipollence-type arguments *do*,

beg the question against Spinoza.) Regarding fallibilism, see Richard Popkin’s distinction between fallibilism and mitigated scepticism: each allows “probable truths about appearances”, but only for the latter does this not amount to, or facilitate, knowledge of the real nature of things. Richard H. Popkin, *The History of Scepticism. From Savonarole to Bayle*, (New York: Oxford University Press, 2003), 112, 114. Again, “scientific knowledge” is presented as knowledge of “phenomenal relationships” (p. 118), but only the fallibilist continues the “Aristotelian quest” to know things in themselves (p. 126).

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after all, depend upon absolute facticity for their efficacy. In any case, my aim is to show that, even if (a) the falsity of subjectalism is given, and (b) the correlationist must accept the principle of unreason, Meillassoux *still* fails to establish the truth of his own position, *speculative materialism*. I will do this by building a counter-model that is compatible with Meillassoux's argument, but which yields an interestingly different result. This counter-model relies crucially on the concept of a 'null world'.

Speculative materialism is characterised by the claim that contingency is the *only* necessity. This does not mean that it necessitates nothing – starting with the so-called “figures” of factuality. Rather: “We can only hope to develop an absolute knowledge – a knowledge of chaos which would not simply keep repeating that everything is possible – on condition that we produce necessary propositions about it besides that of its omnipotence.”²² These figures of factuality are intended to build upon the initial result of unreason itself, drawing out its consequences and illuminating its nature. The figures are attempts to show that omnipotence has its own internal logic – that it is an auto-normalizing rather than *pure* (and hence inconsistent) chaos.

Puzzles that arise when we think about omnipotence *as such* also arise here. For example, if contingency is unlimited, can it cease to be so? Could it become nothing whilst remaining itself? Meillassoux insists that chaos, although not limited by any *external* reality, is limited by its own nature, and must remain itself.²³ The contrasting position is that chaos needn't remain itself but could become otherwise without reason. For an example of this latter position, consider Markus Gabriel's reading of Schelling: freedom – which is here the analogue of Meillassoux's chaos – is only *absolutely* free if it is free from the necessity of remaining itself.²⁴ Taken literally, this

22 Meillassoux, *After Finitude*, 66.

23 Ibid.

24 Markus Gabriel, *Transcendental Ontology. Essays in German Idealism*, (Bloomsbury, 2011), 19.

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means that freedom must transcend *every* limit, including consistency (non-triviality) itself. On this reading, freedom amounts to an inconsistent superiority of contingency to *all* necessity – hence even to the necessity of contingency itself – a *pure possibility* that is free to become other than itself, and to do so, moreover, *without* thereby ceasing to be freedom. However, it is questionable whether *this* conception of absolute freedom – which constitutes one way of understanding the contingency of contingency, that is, the reflexivity of contingency – is coherent.

But then, supposing we don't want to give up the reflexivity of contingency, how else might we understand it? Two alternatives present themselves at this point. Either the contingency of contingency amounts to the *mere* facticity of its self-identity – which seems to be Gabriel's preference – or it amounts to the possibility of absolute nothingness. Each of these resonates somewhat with Schelling's position, though the former fits better with his vision of an apophatic *quasi*-subject that is somehow both anterior to all logical determination, yet nevertheless draped with predicates. In any case, since mere facticity is not contingency, there is an unsatisfying hint of equivocation in glossing the contingency of contingency in this way.

Why not nothing, then? Let us see how Meillassoux tries to exclude this possibility. For Meillassoux, speculative materialism is *uniquely* compatible with – and implicitly required by – the epistemological strictures of correlationism, i.e. it yields the *only* non-dogmatic absolute. However, the nature of this absolute cannot be transparently read off from the principle of unreason alone – a further argument is needed. Thus, according to Meillassoux's second "figure" of unreason, "it is absolutely necessary that the in-itself exists, and hence that the latter cannot dissolve into nothingness."²⁵ Meillassoux asserts that although no *determinate* material reality is absolute, it is nevertheless true that

25 Meillassoux, *After Finitude*, 71. Cf. Meillassoux, "Interview," 165.

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contingency is nothing outside of what is contingent – it is not a ‘free floating’ principle, but always a property of determinate beings. I thus establish that something must exist – and not pure nothingness – and that this something is not necessarily a thinking thing. This something that does not necessarily think is matter in general.²⁶

Similarly, he writes:

For although I can think the contingency of this existing thing, I cannot think the contingency of existence as such (or of the fact that something exists in general). Thus I am perfectly incapable of thinking the abolition of existence, and so becoming-inexistent is only conceivable as the becoming of a determinate existent, not as the becoming of existence in general.²⁷

If existence *as such* is contingent, Meillassoux argues, then facticity is just a fact, i.e. there is a facticity of facticity – and since we’ve already ruled this out by accepting the weak interpretation of the non-facticity of facticity (this being the minimum needed to avoid collapsing back into correlationism), we must conclude that the latter entails Meillassoux’s preferred strong interpretation, according to which existence is necessary. As such, the null world turns out to be inconceivable after all.

Call *metaphysical nihilism* the view that asserts the possibility of a null or empty world: empty of living things, stars and galaxies, space and time, all abstract objects, as well as truth and possibility. The null world, to be sure, is not a ‘world’ in the way that other possibilities are. It is not an object or an empty container or a stage without actors. This naturally leads to the worry that it is not a coherent or conceivable possibility – a worry that is virtually as old as philosophy itself.²⁸ Meillassoux appends his own argument to this long

26 Meillassoux, “Iteration, Reiteration, Repetition,” 13.

27 Meillassoux, *After Finitude*, 75-6.

28 Thus, for Parmenides, we cannot conceive nothingness, and so cannot countenance its possibility. Being and thought are co-extensive. Meillas-

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lineage of resistance.

There is a *prima facie* plausible objection against the conceivability of absolute nothingness: according to this objection, the *only* way the nihilist can distinguish her view from the anti-nihilist is through tacitly depending upon the possible *being* of nothingness, and thus contradicting herself. Put differently, the nihilist needs a way of distinguishing possible and impossible worlds *other* than in terms of (possible) being, such that the null world is classified amongst the former rather than the latter. The objection is that there is no such distinction available.

Of course, the nihilist doesn't just blithely assert that there could have *existed* a non-existent world, or anything along these lines. She tries to express her position without paradox – yet how, exactly? Suppose we say simply: being could have failed to be. Or: there could have not been anything. These formulations avoid ambiguity by having the negation precede the mention of being. But now consider: how do we distinguish this possibility from an impossibility? Fundamentally, if anything has being, then something is a (metaphysical) subject of predication, i.e. something has properties. This makes it difficult for the nihilist to express her position coherently. She can't say, for example, that possibilities are possible *realities* – at least not if this is taken as meaning that there could be a reality involving everything lacking reality. We can call this problem of distinguishing possible and impossible worlds the *demarcation problem*. The nihilist who wants to maintain the conceivable possibility of absolute nothingness faces the challenge of solving it.

Meillassoux's conclusion, we have seen, is that the possibility of absolute nothingness is inconceivable. Compare this

soux identifies this as the postulate that (strong) correlationism seeks to overturn (Ibid, 44). For Bergson nothingness is always the absence of some particular thing, never of all things taken together – hence for him too absolute nothingness is unthinkable. Henri Bergson, *Creative Evolution*, trans. Arthur Mitchell (New York: Dover, 1998), 280–81. The possibility of a null world is a “fundamental illusion of the understanding” that depends on transposing the social (and ultimately subjective) practice of negation into the speculative sphere (pp. 275, 287, 291).

conclusion, once again, with the alternative Gabriel finds in the late Schelling: according to Gabriel, for contingency to truly have the last word there can't be any guarantee that even *it* is necessary.²⁹ Rather, to be *completely* free of dogmatism we must finally admit a contingency of *all* necessity, and hence a contingency of the necessity *of* contingency.³⁰ But what can this mean if not that contingency could have failed to be? Above I noted that for Schelling it seems to involve an eschatological regression into incomprehensible necessity. If this is true then there is some justice in Meillassoux's verdict that applying facticity to itself, in order to avoid the necessity of contingency, amounts to relativizing it to the necessity of correlation, in this case Schelling's God-to-come/absolute freedom. Meillassoux's complaint is just that this cannot be viewed as a response to the correlationist on her own terms, but must be seen as a dogmatic regression. As Nietzsche said of Schopenhauer at a similar juncture, Schelling only succeeds with "dictatorial tone" in making it so that "a completely dark and ungraspable *x* is draped with predicates".³¹ A similar problem of expressibility afflicts Gabriel's position.

However, this by itself does not show the *unique* compatibility of speculative materialism with the epistemological strictures of the correlationist. As I have been saying, there is an alternative reading of the facticity of facticity available here, one that does *not* involve the necessity of correlation, and according to which the contingency of contingency is just the contingency of existence – this being what Meillassoux denies. Whereas Meillassoux seeks to ontologise *weak* correlationism, the contingency of existence more closely resembles an ontologisation of *strong* correlationism – especially insofar as we take seriously (without capitulating in

29 Gabriel, *Transcendental Ontology*, 130.

30 *Ibid*, 132-4.

31 Quoted in Alberto Toscano, *The Theatre of Production. Philosophy Between Kant and Deleuze*, (Palgrave Macmillan, 2006), 92. Cf. Eugene Thacker, "Dark Life. Negation, Nothingness and the Will-To-Life in Schopenhauer," *Parrhesia* (2011), 12, 21: the attempt to think the in-itself as some sort of life requires a "minimal equivocacy" with regard to phenomenal life.

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the face of) the problems associated with thinking absolute nothingness.³² Even if absolute nothingness is unthinkable in some sense – a sense corresponding to the limitations of finite thought (whatever exactly those are) – the possibility of the unthinkable remains thinkable for the strong correlationist. So there is at least one sense in which nihilism is – albeit indirectly – conceivable.

This is *not* to say that the strong correlationist *can* avoid absolutising facticity after all – I am not presently trying to undermine *this* part of Meillassoux’s argument. My point is that, even granting the need to absolutise facticity, it looks like the strong correlationist has a *choice* in how to go about renouncing her position. She can, specifically, *accept* the possibility of this finitely unthinkable nothingness, which in turn guarantees the contingency of contingency. As such, she does not have to become a speculative materialist in order to avoid being a subjectalist.

The upshot of this is that we should distinguish between two ways of applying facticity to itself – one involving correlation and the other not – which Meillassoux seems to have run together. On the basis of this distinction we can observe that the contingency of existence *does* entail the facticity of facticity – but that this makes facticity *more*, not less, absolute. What I am suggesting is that Meillassoux’s own argumentation – supposing it is successful in showing that the strong correlationist cannot think the possibility of the unthinkable *except* by dint of the unreason of the real – *underdetermines* the decision to opt for speculative materialism, *even if the falsity of subjectalism is given*. For according to an *ontologised* strong correlationism, contingency is *neither* relative to the

32 Strong correlationism is characterised by the assertion that “it is unthinkable that the unthinkable be impossible.” Meillassoux, *After Finitude*, 41. If the unthinkability of $\neg p$ entails the thinkability of p , then it follows from the unthinkability of the impossibility of the unthinkable that we can think the possibility of the unthinkable. The strong correlationist offers this as a response to the subjectalist assertion of the necessity of correlation. That is, strong correlationism is an attempt to escape, via facticity, from subjectalism, precisely so as to preserve the Wholly Other against the impossibility of the uncorrelated.

James T. Hill – *Why Not Nothing? Meillassoux's
Second Figure of Factuality and Metaphysical Nihilism*

necessity of correlation *nor* itself (*contra* Meillassoux) a sort of necessary existence, but instead relative to the possibility of nothingness that confirms it whilst excluding all necessary existence. As a slogan: contingency is necessary *because* it is contingent.

This position bears some resemblance to the one recently identified by Martin Hägglund in the work of Jacques Derrida.³³ It can also be compared with Thacker's description of Schopenhauer:

Instead of asserting an Absolute Life (grounded by its own principle of sufficiency, and driven by an ontology of overpresence), Schopenhauer will drop the bottom out of the ontology of generosity. What remains is, quite simply, nothing. No overflowing life force, no pantheistic becoming, no immanent principle of life running throughout all of Creation. Just nothing.³⁴

Thacker adds, provocatively, that Schopenhauer's concept of the Will-to-Life, which withdraws from any characterisation, "ultimately points to a principle of *insufficient* reason at its core."³⁵ Admittedly, Thacker immediately goes on to say (albeit not in a dictatorial tone) that this nothing is a "paradoxical and enigmatic something." But why not persist with the idea of *absolute* nothingness?

So far I have presented a challenge to the conceivable possibility of absolute nothingness, before showing how to respond to this challenge on the basis of an ontologised strong correlationism. This illustrates a significant flaw in Meillassoux's argument. Nevertheless, it would be much nicer if we didn't have to acquiesce to the premise that we can't finitely think the possibility of a null world. Indeed, I

33 Martin Hägglund, *Radical Atheism. Derrida and the Time of Life*, (Stanford: Stanford University Press, 2008), 47: the Kantian apocalypse reveals an indestructible thing in itself beyond the limits of knowledge; whereas for Derrida the apocalypse destroys everything without remainder. It is the latter possibility I am interested in.

34 Thacker, "Dark Life," 18–19.

35 *Ibid.*, 21.

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don't believe that the possibility of the null world is really inconceivable in any significant sense. To the demarcation problem formulated above I respond: anything that is not contradictory or inconsistent is possible. Since we define the null world as lacking any true (or false) propositions, we *ipso facto* conceive it as lacking true contradictions - that explains why it is classified as possible rather than impossible. To be sure, it doesn't follow from *this* that the null world *is* (fully) conceivable, or that it is possible. To show that it *is*, at least, conceivable, it will suffice to show that its possibility is entailed by something else that is conceivable (non-contradictory); and the obvious candidate is just the conceivability of the contingency of everything taken together. I'll now give a sketch of the argument, which I've borrowed from Graham Priest.

§5. The contingency of contingency can be fruitfully compared with the Buddhist doctrine of the *emptiness of emptiness*. To begin with I stipulate that, whatever exactly the property of emptiness amounts to, it entails lacking intrinsic or self-existence. Now, if it is true that necessary existence is possible *iff* something has intrinsic existence; and if we understand emptiness as the lack of intrinsic existence in this sense, then the emptiness of emptiness (i.e. universal emptiness) is equivalent to the contingency of contingency (i.e. universal contingency). An interesting feature of this comparison is that metaphysical nihilism is shown to be a consequence of *pan-relationism*, the view that being is necessarily relational.

As Priest laconically puts it, to "be empty is to exist only as the locus in a field of relations."³⁶ He observes that it is often thought that taking *everything* to be empty leads to a vicious regress, as follows: if the existence of a thing is constituted only by the existence of other things, then since "there is nothing that grounds this process, there is nothing that ultimately constitutes the existence of anything. Nothing,

³⁶ Graham Priest, "The Structure of Emptiness," *Philosophy East and West* (2009), 59:4, 467-480, 473.

therefore, exists. Emptiness entails nihilism.”³⁷ Priest denies that this regress is vicious, because universal emptiness can be shown to be distinct from nothingness. Priest constructs his model as follows.³⁸ Start with a set of objects and relations between those objects. For a particular object X in that set, there is a set of relations corresponding to it – the relations entered into or engendered by that object. Now think of the relation R_L that holds between these relations. This relation between the relations of the object X gives us an equivalence class, which Priest terms a *locus* of relations.

Now, for each object in the set there is a corresponding equivalence class, which together are the loci of that set. According to Priest, “we may dispense with objects and the relationships between them, and operate equivalently in terms of loci and the relationships between these. The ontology of independent objects may be replaced by an ontology of loci.”³⁹ If we then take these loci and their relations, and apply the same analysis again, we see that they too can be understood purely in terms of loci and relationships between loci. If we repeat the analysis to the limit, we end up with a model of the proposition ‘everything is empty’. Note that the structure of emptiness applies even to sets and other abstract objects, as well as to emptiness itself, understood here as the totality of things.⁴⁰ Crucially, instead of the structureless void of the empty set, we have a very rich, intricate structure. The difference can be noted in the fact that emptiness, since it contains itself, is a non-well-founded set; whereas the empty set, having no members, is a well-founded set.

Obviously I am giving a very compressed version of the argument – mostly because I am not enough of a set theorist to present it thoroughly. But as far as I can tell, the set-theoretical machinery allows us to build a consistent model of universal emptiness; and given the interpretation placed upon that

37 Ibid, 471.

38 Ibid, 473.

39 Ibid, 474.

40 Ibid, 476.

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Buddhist doctrine here, it follows that it is conceivably possible for there to be absolutely nothing.

§6. The PSR is a philosophical fifth postulate. Meillassoux has shown this more emphatically than anyone. However, the adventure of ‘non-Euclidean philosophy’ has only just begun. The true consequences of giving up the PSR remain to be determined.

This paper has been defensive and prospective in nature: for all that I’ve shown, it may yet turn out that Meillassoux *can* repair his second figure of factuality, and that his conclusion is substantively correct. Of course, I don’t think this is what will happen. To my mind, speculative materialism constitutes a failure of nerve that perpetuates the distorting influence of the PSR on philosophical thought. To this I respond, reading Levinas against himself: “The absolutely foreign alone can instruct us.”⁴¹ Admittedly, I’ve hardly begun to describe the alternative opened up by taking metaphysical nihilism seriously. This is what must now be done. The promise of this alternative is a novel development of what Gabriel calls the “metaphysical truth of skepticism [that] consists both in a realization of our finitude and in the adjacent insight into the nonexistence of the world.”⁴² If this promise can be made good, we will have learnt how to lose the world and find nothing.

41 Emmanuel Levinas, *Totality and Infinity. An Essay on Exteriority*, trans. Alphonso Lingis, (Pittsburgh: Duquesne University Press, 1969), 73. A number of Levinas’ observations can be fruitfully repurposed if we interpret the Wholly Other as absolute nothingness rather than God. For example (p. 40): “The void that breaks totality can be maintained against an inevitably totalizing and synoptic thought only if thought finds itself faced with an other refractory to categories.”

42 Gabriel, *Transcendental Ontology*, 1–2.

New Realism: A Short Introduction¹

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From Postmodernism to Realism

NEW REALISM IS PERHAPS THE only philosophical movement of which one may indicate the exact date of birth: it was June 23, 2011 at 13.30 at the restaurant “Al Vinacciolo” in Via Gennaro Serra 29, Naples. I can be so accurate because I was there, with Markus Gabriel and his Italian collaborator Simone Maestroni, after a seminar at the Italian Institute for Philosophical Studies. Markus was founding an international centre of philosophy in Bonn and wanted to inaugurate it with a big conference. I told him that the right title would have been “New Realism”, since it captured what in my opinion was the fundamental character of contemporary philosophy: a certain weariness of postmodernism and the belief that everything is constructed, by language, conceptual schemes and the media. Well, it is not like that: something, or rather, much more than we are willing to admit, is not constructed – and this is a wonderful thing, otherwise we could not distinguish dreams from reality. I announced the conference a few weeks later, in an article published in “La Repubblica” on August 8, 2011, and since

¹ I elaborated this article in Bonn with the support of Käte Hamburger Kolleg “Recht als Kultur”. I wish to thank especially its director, Professor Werner Gephart.

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then the debate has never ceased, both in Italy and abroad², with contributions that include many of my writings on the subject,³ the book by Markus Gabriel⁴ and that by Mauricio Beuchot and José Luis Jerez.⁵

Realism, just as idealism, empiricism or skepticism, is a constant theme in philosophy. **New Realism**, instead, is a reoccurring function: the reaction to a previous anti-realist hegemony. It was so in the case of American New Realism last century,⁶ with Brazilian Novo Realismo thirty-five years ago⁷ and it is so in the case of contemporary New Realism, which was launched by my manifesto on August 8, 2011 (which, besides, summarized what I have been working on for the past twenty years).⁸ That this should happen in Europe, where postmodernism has been most influential, is not coincidental. “New realists” come from continental philosophy, where the weight of antirealism was far greater than in analytic philosophy.⁹ Both traditions shared a premise: there is not a

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- 2 For a full press review, see [http //nuovorealismo.wordpress.com](http://nuovorealismo.wordpress.com). For an analysis of the debate, see R. Scarpa, *Il caso Nuovo Realismo. La lingua del dibattito filosofico contemporaneo* (Milano-Udine: Mimesis, 2013).
 - 3 See in particular “Nuovo Realismo”, in *Rivista di estetica*, 48 (3/2011), pp. 69-93, and my *Manifesto of NewRealism* (New York: SUNY Press, 2014).
 - 4 M. Gabriel, *Warum es die Welt nicht gibt* (Berlin: Ullstein, 2013).
 - 5 M. Beuchot - J.- L. Jerez, *Manifiesto del nuevo realismo analógico* (Buenos Aires: Circulo Erméneutico 2013).
 - 6 E. B. Holt, W. T. Marvin, W. P. Montague, R. B. Perry, W. B. Pitkin, E. G. Spaulding, *The New Realism: Cooperative Studies in Philosophy* (New York: The Macmillan Company, 1912).
 - 7 A. de Hollanda, *O Novo sistema Neo-Realista* (Fortaleza: Ceara, 1978).
 - 8 See *Estetica razionale* (Milano: Raffaello Cortina, 1997). The theme of realism lies at the centre of my conversations with Derrida between 1993-1995: J. Derrida and M. Ferraris, *A Taste for the Secret* (Ithaca-London, Cornell UP, 2001). For a brief overview, see “Maurizio Ferraris” in Wikipedia.
 - 9 Where, to put it with Graham Harman: “With some rare and ineffectual exceptions (...) no one in the continental tradition was declaring realism devoid of ironic etymological tricks prior to 2002” (“The Current State of Speculative Realism”, *Speculations IV* (2013), p. 23). For a more detailed analysis, see M. Ferraris, “Introduction”, in T. Andina (ed.), *Bridging the Analytical Continental Divide* (Leiden-New York: Brill, 2014).

“thing in itself”, but only phenomena mediated (or created) by our conceptual schemes and perceptual apparatuses, and it is in this sense that both traditions have been affected by a “linguistic turn”. But the linguistic turn was the result of a conceptual breakthrough, characterized by a prevalence of the concept in the construction of experience¹⁰ (and not, as it would be entirely reasonable to posit, in the *reconstruction* of experience, in scientific or philosophical description).

If, however, for analytical philosophers the problem was epistemological (“to what extent do conceptual schemes and language intervene in our view of the world?”), for continental thinkers the problem was political. Following what I have proposed to call fallacy of knowledge-power,¹¹ postmodernism has cultivated the idea that reality is actually constructed by power for purposes of domination, and that knowledge is not a means for emancipation, but an instrument of power. I shall dub “Foukant” the philosophical function lying at the basis of this attitude, because (like Kant) it believes that we do not have direct access to knowledge and that the I think must necessarily accompany our representations, and (like Foucault, in the first phase of his thought) it deems that the I think and our conceptual schemes are means for the affirmation of the will to power. Thus, in radical postmodernism, a logical step is taken so that reality is a construction of power, which makes it both detestable (if by “power” we mean the Power that dominates us) and malleable (if by “power” we mean “in our power”).

It was first of all politics that undermined postmodern hopes of emancipation.¹² The advent of media populism provided the example of a farewell to reality that was not at all emancipatory, not to mention the unscrupulous use of truth as an ideological construction, which got to the point of start-

10 See J. McDowell, *Mind and World* (Cambridge, MA: Harvard University Press, 1994).

11 M. Ferraris, *Manifesto del Nuovo Realismo* (Roma-Bari: Laterza, 2012), 87 and ff.

12 Ibid, 3 and ff.

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ing a war on the bases of false evidence of weapons of mass destruction. In the media and in several political programs we have seen the real outcome of Nietzsche's principle that "There are no facts, only interpretations", which only a few years earlier philosophers proposed as the way to emancipation, but which in fact presented itself as the justification for saying and doing whatever one wanted. Thus the true meaning of Nietzsche's motto turned out to be rather: "The reason of the strongest is always the best." This circumstance explains the slight gap in time between the end of antirealism in the analytic world¹³ and the end of antirealism in the continental world. Nevertheless, during the seventies and eighties, there was much analytical antirealism and continental antirealism was still present in the departments of comparative literature.

Both analytic and continental antirealisms find a powerful theoretical justification in **constructivism**, which represents the mainstream of modern philosophy.¹⁴ Such a perspective argues that our conceptual schemes and perceptual apparatuses play a role in the constitution of reality. It is a position that begins with Descartes and culminates in Kant; it was then radicalized in the nihilistic sense by Nietzsche, or specialized in the epistemological, hermeneutic and psychological sense by several other thinkers. The basic assumption of this function of thought, which I propose we call "Deskant", consists of two statements. The first is that we have a direct

13 Which can be located around the seventies, with Kripke, (S. A. Kripke, *Naming and Necessity* [Cambridge, MA: Harvard University Press, 1980]) and Putnam (H. Putnam, "The meaning of 'meaning'", in *Mind, Language and Reality. Philosophical Papers, vol. 2.* [Cambridge, MA: Cambridge University Press, 1975], 215-271).

14 D. R. Lachterman, *The Ethics of Geometry: A Genealogy of Modernity* (London: Routledge, 1989). For a criticism of its contemporary outcomes, see P. Boghossian, *Fear of knowledge Against Relativism and Constructivism* (New York, Oxford University Press, 2007). I believe that it is constructivism - rather than the "correlationalism" questioned by Meillassoux (After Finitude, London, Continuum 2008) - that captures the main thread of modern philosophy, which does not simply lie in thinking about the object in correlation to the subject, but in conceiving of it as a result of a construction of the subject.

relationship with our cogito and a mediated one with the world; the second is that the mediation operated by thought and by the senses leads to the fact that the whole of reality turns out to be somewhat mind-dependent.

When constructivists illustrate this second thesis they seem to refer to indisputable evidence and highly recognizable actions. For example, Nietzsche asserts that our needs and our saying yes or no dissolve facts into interpretations. But if “there are no facts, only interpretations” is the maximalist slogan which postulates the world’s causal and conceptual dependence on thought, then the mere fact that a sentence like “there are no cats, only interpretations” is senseless makes it extremely doubtful that a strong dependence (either causal: concepts cause objects; or conceptual: our relationship with objects presents, in any case, a conceptual mediation) should be possible. So constructionism falls back on a weak dependence, i.e. representational dependence¹⁵: we are not the creators of the universe, but we still construct it starting from an amorphous *hyle*, a cookie dough for us to shape with the stencils of our concepts.¹⁶ Thus the separate existence of the world is acknowledged, but the world as such is taken to have no structural and morphological autonomy, at least not that we know of.

Ontology and Epistemology

That is where the first move of New Realism, namely conceptual clarification, takes place. If we try to give a concrete form to representational dependence, we will realize that the technical term hides a conceptual confusion between **ontology** (what there is, which is independent of our representations) and **epistemology** (what we think we know, and that *may* be dependent on our representations – but what makes our statements true are not our representations, but that to

15 R. Rorty, “Charles Taylor on Truth, in Truth and Progress”, in *Philosophical Papers*, vol. III, (Cambridge: Cambridge University Press, 1998), 86.

16 H. Putnam, *Representation and Reality* (Cambridge, MA: MIT Press, 1988), 114.

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which those representations relate). According to representational dependence, an entity, say the Tyrannosaurus Rex (understood as a physical entity) is considered as if it were a zoological and linguistic notion, and it is concluded that, since in the absence of humans there would not be the word “Tyrannosaurus Rex”, then the Tyrannosaurus Rex “representationally” depends on people. Which is either a truism (if by “representationally” we mean something like “linguistically”) or a perfect absurdity (if by “representationally” we mean something - even slightly - more than that). Because this would imply that the being of the Tyrannosaurus Rex depends on us; but then, given that when the Tyrannosaurus Rex existed we did not, it would paradoxically follow that the Tyrannosaurus Rex both did and did not exist.¹⁷

The ontological hypothesis that underlies the distinction between ontology and epistemology is the one - indicated by Schelling’s positive philosophy - for which being is not something constructed by thought, but it is given before thought comes to be. Not only because we know of interminable periods in which there was the world, but there were no people, but also because what initially appears as thought actually comes from outside of us: the words of our mother, the myths and rules, the totems and taboos that we encounter in everyday life are just found by us, just like in Mecca one comes across a meteorite. Along this line, New Realism proposes its distinctions, schematized as follows.¹⁸

17 As is argued by D. Marconi, “Realismo minimale”, in M. De Caro and M. Ferraris, (eds.), *Bentornata Realtà* (Torino: Einaudi, 2012), 113-137.

18 For an articulated description, see M. Ferraris, *Documentality. Why is Necessary to Leave Traces* (New York: Fordham UP, 2012).

EPISTEMOLOGY Amendable	ONTOLOGY Unamendable
Science Linguistic Historical Free Infinite Teleological	Experience Not necessarily linguistic Not historical Necessary Finite Not necessarily teleological
Truth not born out of experience, but teleologically oriented towards it	Reality not naturally oriented towards science
Internal World (=internal to conceptual schemes)	External World (=external to conceptual schemes)

I will not go into a detailed explanation, which will be the subject of the next pages; I will only suggest the reasons for the confusion, which I consider to be fatal, between ontology and epistemology. This confusion was caused by Deskant, driven by the need to re-establish, through construction, a world with more stability, because it is assumed that nature as such is contingent.

In order to do so, what Deskant does is resort to what I propose we call **transcendental fallacy**¹⁹: if all knowledge begins with experience, but the latter is structurally uncertain, then it will be necessary to found experience through science, finding *a priori* structures to stabilize its uncertainty. To achieve this, we need a change of perspective: we have to start from the subjects rather than the objects, and ask ourselves – in accordance with the matrix of all subsequent construction-

¹⁹ For a detailed analysis of the transcendental fallacy, see M. Ferraris, *Goodbye Kant!, What still stands of the Critique of the Pure Reason* (New York: SUNY Press, 2013).

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ism - not how things are in themselves, but how they should be made in order to be known by us, following the model of physicists who question nature not as scholars, but as judges: that is, using schemes and theorems.

Deskant then adopts an *a priori* epistemology, i.e. mathematics, to found ontology: the possibility of synthetic *a priori* judgments allows us to fixate an otherwise fluid reality through a certain knowledge. In this way, transcendental philosophy moved constructionism from the sphere of mathematics to that of ontology.²⁰ The laws of physics and mathematics are applied to reality and, in Deskant's hypothesis, they are not the contrivance of a group of scientists, but they are the way in which our minds and senses actually work. Our knowledge, at this point, will no longer be threatened by the unreliability of the senses and the uncertainty of induction, but the price we have to pay is that there is no longer any difference between the fact that *there is* an object X and the fact that we *know* the object X - that is, the confusion between ontology and epistemology, only partially avoided by Kant through the hypothesis of the noumenon (which post-Kantians did not hesitate to abandon).

Making perceptual experience (and not, as we will see shortly, social experience) depend on the conceptual means falling into what psychologists call "stimulus error": namely the ease with which we are led to mistake an observation for an explanation. It is the ease with which, with our eyes closed, we respond "nothing" or "black" to the question "what do you see?", when instead we are seeing phosphenes and gleams. Yet we do not account for those at a descriptive level, because what we are talking about is something else: a theory of vision for which the eye is like a camera obscura, and when the diaphragm is closed absolute darkness reigns. When one argues that observers equipped with different theories see reality differently²¹ one gives a philosophical

20 A. Ferrarin, "Construction and Mathematical schematism. Kant on the Exhibition of a Concept in Intuition", in *Kant-Studien*, 86, 1995, pp. 131-174.

21 T. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of

dignity to a psychological error, and most importantly one makes a category mistake that lies in confusing seeing with knowing. For example, if I read the word “representational dependence” (sic) I think of “representational dependence”, but I see “representational dependence” (sic).

Now, it makes perfect sense to assume that there is a conceptual action when I recognize a constellation,²² or when, looking at three objects, I believe – like Leśniewski – that for every two objects there is one which is their sum, increasing the total number of objects.²³ But this conflict can be explained by the simple consideration that we cannot see properly neither constellations nor Leśniewski’s objects, but only the stars and the three objects of common sense.

This is not to argue that constellations are not real, but rather to draw a distinction (which obviously stems from the difference between ontology and epistemology) between two layers of reality that fade into each other. The first is what I would call ϵ -**reality**, meaning by this “epistemological reality”, or what the Germans call “Realität”. It is the reality linked to what we think we know about what there is (which is why I call it “epistemological”). This is the reality referred to by Kant when he says that “intuitions without concepts are blind”; or by Quine when he says that “to be is to be the value of a variable.” But next to, or rather below, the ϵ -reality I also set the ω -**reality** in the sense of $\delta\upsilon\tau\omega\varsigma$ (I use the omega just to make a distinction): the ontological reality, or what the Germans call “Wirklichkeit”, which refers to what there is whether we know it or not, and which manifests itself both as a resistance and as positivity. The ω -reality is the **external world**, expression by which, as we have seen in the scheme, I design the world external to conceptual schemes.

Chicago Press, 1962).

22 N. Goodman, *Ways of Worldmaking* (Indianapolis, Hackett: 1978).

23 H. Putnam, *The Many Faces of Realism* (LaSalle: Open Court, 1987), chs. 1, 2; and “Truth and Convention: On Davidson’s Refutation of Conceptual Relativism”, *Dialectica* 41 (1987), 69–77 (reprinted in H. Putnam, *Realism with a Human Face*, [Cambridge MA: Harvard University Press, 1990], 96–104).

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At this point it is better to introduce, next to the difference between ontology and epistemology, also a difference between **ontological independence** and **epistemological independence**. The way in which the problem of realism has been set in the analytical area defines realism as independence of *truth* from the knowledge we have of it. For New Realism, instead, it is independence of *reality* from the knowledge we have of it (although for certain classes of objects things are different). I believe this aspect is important because truth is, in any case, an epistemological function, which presupposes minds: a sentence like “On September 17, 1873 Bismarck had a flu” is causally independent of minds, but it presupposes minds. And so (we will get back to this) the formula of the independence of truth from the minds lends itself well to some aspects of social reality. On the other hand, when it comes to reality in its most general sense, I would define realism in the following terms: realism is the belief that natural objects (and possibly other types of objects to be specified every time) are independent of our means of knowing them; they are existent or non-existent in virtue of a reality existing independently of us.²⁴

Unamendability

The second move made by New Realism, after that of conceptual clarification, is empirical observation. There is a class of representations that the I think will never be able to accompany: that of the infinite number of things that existed before any I think. I call this argument **pre-existence**²⁵: the world is given prior to any cogito. Then there are classes of representations that, even though accompanied by the I think, seem to resist it, regardless of the “representational

24 Borrowing Dummett's definition, although he spoke of “truth” instead of “reality” (M. Dummett, “Realism” (1963), later in *Truth and Other Enigmas* (Harvard University Press: 1978), 145-165.

25 Meillassoux, *After Finitude*.

dependence”; I call this argument **resistance**²⁶: reality may oppose refusals to our conceptual schemes. And then it often happens that the I think successfully interacts with beings presumably devoid of any I think, for example with animals; I call this argument **interaction**: beings with different conceptual schemes can interact in the same world.

I collect these empirical circumstances – which, however, have a transcendental role, since they define, even though in retrospect, our possibilities of knowledge – under the name of **unamendability**²⁷: the key feature of what there is is its prevalence over epistemology, because it cannot be corrected – and this is, after all, an infinitely more powerful necessity than any logical necessity.

Unamendability is a **non-conceptual content**²⁸ and a contrastive principle, which manifests the real as not-I. It concerns the sphere of experience that lies outside of that of concepts, defining an extraneous world external to knowledge. Non-conceptual content is a contrast (resistance), something that cannot be nullified. At the same time, it is also an autonomous organisation of experience (interaction), which reduces the burden of the ordering activity that is attributed to conceptual schemes. It is in view of these circumstances that I have given a peculiar ontological value to the recovery of aesthetics as a theory of perception,²⁹ not because it is first and foremost a source of knowledge, but, on the contrary, because it can occasionally constitute a stumbling block for conceptual schemes. At least three consequences follow from this.

The first regards the **prevalence of ontology over epistemology**. In its resistance, the real is the extreme negative of knowledge, because it is the inexplicable and the incorrigible;

26 M. Ferraris, “Esistere è resistere”, in *Bentornata Realtà*, 139-165.

27 M. Ferraris, “Causality and Unamendableness”, in *Gestalt Theory*, 28:4 (2006), 401-407; M. Ferraris “Reality as Unamendability”, in L. Cataldi Madonna (ed.), *Naturalistische Hermeneutik* (Wuerzburg: Koenigshausen u. Neumann, 2013), 113-129.

28 G. Evans, *The Varieties of Reference* (Oxford: Oxford University Press, 1984)..

29 See M. Ferraris, *Experimentelle Ästhetik* (Vienna: Turia und Kant, 2001).

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but it is also the positive extreme of being, because it is what is given, insists and resists interpretation, and at the same time makes it true, distinguishing it from fantasy or wishful thinking. And we must not forget that in areas dependent on conceptual schemes, such as historical events, we are dealing with a clear manifestation of unamendability, which is the irrevocability of the past events on which the interpretations of historians are constructed. Now, interpretations take place on the basis of facts and facts occur in a world of objects. If this is the case, the acknowledgment of facts in the physical world (for example, the fact that snow is white) is placed at a perfectly continuous level with respect to the acknowledgment of facts in the historical and moral world.

Secondly, this does not mean in any way that reality coincides with the experience of the senses, or that unamendability comes down to perception. It simply means that unamendability deconstructs the claim of the ontologically constitutive action of conceptual schemes.³⁰ In the case of perception, we only have *one* area of unamendability, which happens to be of particular evidence because sometimes we experience an **aesthetic antinomy** with regard to conceptual schemes. The basic argument here does not consist in saying that the stick immersed in water appears broken because it really is broken, but to point out that, although we know that the stick immersed in water is not broken, we can do nothing *but* see it broken.³¹

Thirdly, we can draw from the aesthetic antinomy a more general point, which concerns the **ontological autonomy** of the world with regard to conceptual schemes and perceptual apparatuses. Reality has a structured nature which precedes conceptual schemes and can resist them. So there is no need to rely on an *a priori epistemology* to stabilize contingency. One of our most common experiences is that we interact

30 See P. Bozzi, *Fisica Ingenua* (Garzanti: Milano, 1990).

31 M. Ferraris, "Metzger, Kant and the Perception of Causality", in *The Dialogue. Yearbook of Philosophical Hermeneutics*, 1 (2001), 126-134, and M. Ferraris, "Why Perception Matters", *Phenomenology and Mind*, 4 (2013), 48-61..

with beings who have conceptual schemes and perceptual apparatuses different from our own (or that do not have such things at all), such as dogs, cats, flies and so forth. Well, if interaction depended on conceptual schemes and knowledge, it would be somehow miraculous. Unless we wish to resort to the hypothesis of a miracle or a pre-established harmony, we are forced to admit that interaction is made possible by the sharing of a common and homogeneous space, and of objects endowed with positivity that are independent of our conceptual schemes.

This is what I have illustrated elsewhere under the title **slipper experiment**,³² showing how it is a very common experience that there is interaction between beings with very different conceptual schemes, perceptual apparatuses, dimensions and forms of life. And the ability of superorganisms such as a termite moulds to structure complex articulations in the total absence of a central control system is widely studied by zoologists.³³ Of course, I never thought that myself, a dog and a constructivist all see the world the same way. I am saying that we can interact despite the fact that our conceptual schemes and perceptual apparatuses are different.

Affordance

Hence the third move of New Realism. If things are as I have described above, then reality does not only manifest itself as resistance and negativity: every negation entails a determination and a possibility. The world exerts an **affordance**,³⁴

32 M. Ferraris, *Il Mondo Esterno* (Milano: Bompiani, 2001), 90-91. The *Gedankenexperiment* through which I develop the argument of interaction appears in English in M. Ferraris, "What is it Like to be a Slipper", in *The Dialogue*, 1 (2002), 164-169.

33 Hölldobler and E.O. Wilson, *The Superorganism: The Beauty, Elegance, and Strangeness of Insect Societies* (New York: W.W. Norton & C., 2008).

34 By using the term "affordance" I am referring to a notion that has been widely popular last century: see J.J. Gibson, *The Ecological Approach to Visual Perception* (Boston: Houghton Mifflin, 1979); K. Lewin, "Untersuchungen zur Handlungs- und Affekt-Psychologie. I. Vorbemerkung über die psychischen Kräfte und Energien und über die Struktur der Seele",

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through the objects and the environment, that qualifies as a **positive realism**.³⁵ Strong, independent and stubborn, the world of objects that surround us (including the subjects we interact with, which are another kind of objects) does not merely say no: it does not only resist us, as if to say “here I am, I am here.” It is also the greatest ontological positivity, because its very resistance, opacity and refusal to come to terms with concepts and thought are what assures us that the world of objects we deal with is not a dream.

Children in a pre-linguistic age are already able to segment linguistic reality into objects³⁶ – which for Deskant, strictly speaking, would not be possible, given that, presumably, they do not possess the scheme of substance as permanence in time. The thesis I defend through the argument of affordance³⁷ is that we should start from the objects (an area in which, as I said, subjects are also included), so as to reduce the gap between our theories and our experience of the world. This is not meant to be a futile worship of objectivity (which is a property of knowledge, not of being), but a due recognition of the positivity on which we all rely, but upon which we rarely reflect.

And this does not only apply to physical experiences: the way in which beauty, or moral value or non-value come forward is clearly something that comes from outside of us, surprising and striking us. And it has value first of all *because* it comes from outside: otherwise it would be nothing but imagination.

Psychologische Forschung, 7, (1926), 294–329. Fichte already spoke of an “*Aufforderungscharakter*” of the real, see J. G. Fichte, *Grundlage des Naturrechts* (“Zweiter Lehrsatz”) (1796), ch. 1, § 3, *Gesamtausgabe der bayerischen Akademie der Wissenschaften*, Stuttgart-Bad Cannstatt, Frommann-Holzboog, I/3, 342–351.

35 M. Ferraris, “New Realism as Positive Realism”, *META. Research in Hermeneutics, Phenomenology and Practical Philosophy*, Special Issue on New Realism, (2014), 172–213.

36 C.E. von Hofen ed E.S. Spelke, “Object Perception and Object-directed Reaching in Infancy”, in *Journal of Experimental Psychology: General*, 114 (1985), 198–211.

37 I have extensively dwelt on this in my *Documentality*.

That is why, contrary to what is often said, one cannot distinguish the value from the fact: trivially, this is because the fact is itself a value, and the highest one, i.e. positivity,³⁸ which in turn is the condition of possibility of each value.

We can better understand this by means of the **experiment of the ethical brain**, which is a variation of the *Gedankenexperiment* of the brain in a vat.³⁹ The idea is this: imagine that a mad scientist has put some brains in a vat and is feeding them artificially. By means of electrical stimulation, these brains have the impression of living in a real world, but in fact what they feel is the result of simple electrical stimulations. Imagine that those stimulations depict situations that require moral stances: some snitch and some sacrifice themselves for freedom, some commit embezzlement and some commit acts of holiness. Can we really say that in those circumstances there are moral acts? In my opinion, we cannot: these are, in the best case scenario, representations with moral content. Without the positivity of objects, no morality is possible.

Everything, including corporations, symbolist poems and categorical imperatives, has its origin in the affordance offered by the **environment**. A cave has affordances for different types of beings and serves as a shelter because it has certain characteristics and not others. Ecosystems, state organizations, interpersonal relationships: in each of these infinitely more complex structures we find the same structure of resistance and affordance. I define “environment” every sphere in which these interactions take place, from an ecological niche to the social world – of course, each with its own characteristics. In an environment sense “is given”: it is not at our disposal. The sense is a mode of organization for which something occurs in a given way. But, in fact, it does not ultimately depend on subjects.

It is with this regard that I believe we should set against Markus Gabriel’s thesis “To exist is to exist in a field of sense”

38 See H. Rickert, *Der Gegenstand der Erkenntnis* (Tübingen: J. B. C. Mohr, 1915).

39 H. Putnam, “Brains in a vat”, in *Reason, Truth, and History* (Cambridge: Cambridge University Press, 1981), 1–22.

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the thesis “To exist is to resist in an environment”,⁴⁰ The notion of “field of sense”, as it is brilliantly defined by Gabriel, risks making existence depend on the possession of a sense. Now, an event or an object – from the Holocaust to Kafka’s Odradek – can seem to be utterly senseless, but this does not mean that the event did not take place or that the object does not exist. The fact that more often than we wish we find ourselves unable to find any meaning in our lives does not mean that we are not existing. The perspective suggested by “To exist is to exist in an environment”, instead, is that of a structurally opaque existence that manifests itself first of all in its persistence and possibly in its acting in an environment, without further qualifications. In other words, the field of sense is in the environment and not in the head; it is in the affordance and not in the concepts. Obviously, starting from the objects and from the opacity of existence involves being aware that there can never be a full totality, and rather that our relationship with the world is a confusing balance between ontology and epistemology.⁴¹ This, however, does not mean that the positivity of objects is precluded to us. Indeed, it is this very positivity that allows us to dwell in the world despite the fact that our notions are rarely clear and distinct.

It is in this environment that the **emergence** of thought from being occurs; such a process can be regarded as the development of an (intelligent) epistemology on the basis of an unintelligent ontology, a competence that precedes comprehension.⁴² If the thesis of constructivism is that a disembodied mind constitutes the real, here we have a sharp reversal: thought arises on the ground of reality, being a highly

40 See M. Gabriel, *Warum es die Welt nicht gibt* (Ullstein Verlag: Berlin, 2013).

41 As posited by Tim Button in *The Limits of Realism* (Oxford: Oxford University Press, 2013), we have to locate ourselves between external realism (ontology) and internal realism (epistemology), but we do not know at what exact point. If we knew, I believe we would be dealing with absolute knowledge.

42 See D.C. Dennett, “Darwin’s ‘strange inversion of reasoning’”, in *Proceedings of the National Academy of Sciences of the United States of America*, 106 Suppl. 1 (2009), 10061–10065.

specialized product of evolution. This circumstance explains why epistemology could successfully relate to ontology, as the history of science proves. Hence the thesis of the dependence (of which we have already spoken) and, furthermore, of the **derivation** of epistemology from ontology. All the essential differences that govern our thinking – and that we tend to forget in thought, even though they guide our practices – are derived from the real, and not from thought: think of the differences between ontology and epistemology, experience and science, the external world and the internal world, objects and events, facts and fiction.

So, *metaphysical realism* (if we grant that such a position ever really existed as it is represented by antirealists) supposes a full mirroring of thought and reality:

(1) Thought \leftrightarrow Reality

Constructivism, finding this relation between two distinct realities incomprehensible, suggests a constitutive role of thought with respect to reality:

(2) Thought \rightarrow Reality

Positive realism, instead, sees thought as an emerging datum of reality, just like gravity, photosynthesis and digestion.

(3) Thought \leftarrow Reality

At this point it becomes possible to articulate the characteristics of the environment. We need to begin by introducing, next to the categories of **natural objects** (which exist in space and time independently of subjects) and **ideal objects** (which exist outside of space and time, independently of subjects), two new categories: that of **artifacts**, which exist in space and time depending on the subjects for their genesis, and that of **social objects**, which exist in space and time depending on

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the subjects for their genesis *and* their persistence.⁴³ From this point of view, it is entirely legitimate to assert that the stock market or democracy are representationally dependent (I will soon try to clarify this term since, as we have seen, it is rather obscure) on our collective beliefs. But this does not mean in any way that dinosaurs have some degree of dependence with respect to our collective beliefs. If anything, dependence concerns professorships in paleontology. But professorships in paleontology do not make dinosaurs exist, while the statements of rating agencies do increase or decrease the credit spread.

In this sense I claim, with a form of **contextualism**, that one is never fully realistic nor antirealists. There are spheres of being that can be more or less close to the focal meaning of existence as resistance in an environment. These spheres are reconstructed as **things in themselves** and not as phenomena. Let us begin with natural objects. For Deskant, they are the phenomena *par excellence*: they are situated in space and time, and yet they are not to be found in nature. They are in our heads, along with the categories we use to give order to the world, to the point that, without human beings, space and time may disappear as well. It should follow that before people there were no objects, at least not as we know them, but clearly (as we have seen) it is not so.

Upon closer inspection, it becomes clear that social objects, which depend on subjects (though they are not subjective), are also things in themselves and not phenomena. This may seem complicated at first because, if social objects depend on conceptual schemes, then it should obviously follow that they are phenomena. But it is not so. In order to be a phenomenon, it is not enough to depend on conceptual schemes. A phenomenon must also be in contrast with things in themselves. Let us consider a fine. What would be its “in itself”? To say that a fine is an apparent fine is to simply say that it is not a fine. Above all, people are things in themselves, while

43 See *Documentality*, and M. Ferraris, “Diversity of Social Objects. Outlines of a Theory”, in *Human Diversity and the Law*, ed. by M. Bussani e M. Graziadei (Brussels-Berne-Athens: Stämpfli-Bruyland-Sakkoulas, 2005), 135-178.

in Deskan't's view they would turn into ghosts or shadowy projections of thought.

And now let us come to events, things like hurricanes or car accidents. Which are often unpredictable. Irregularity, what disregards our data and expectations, is the clearest demonstration of the fact that the world is much more extensive and unpredictable than our thinking.

Documentality

There is one last move made by New Realism on which I would like to draw your attention; it regards realism about social objects. A theory of mind-dependence will always have intrinsically obscure aspects because it does not entail a simple causal dependence. For social objects to exist, it is necessary that there are at least two minds and normally, in complex phenomena, there are many more. In such complex cases, many minds do not think in any way about the object and yet they interfere with the process, while many others do think about it and yet are unable to successfully interfere with it (think of a financial crisis, or a war). Apparently, we are dealing with a puzzle: social objects, as we have seen, are **dependent on the mind**, but they are **independent of knowledge** (i.e. even of consciousness). A marriage that nobody knows anything about did still take place; in the same way, there may be a recession even though no one suspects it.

How is this possible? Does this not mean to argue that social objects are both dependent on, and independent of, the mind? No, it does not. The contradiction would present itself only if "mind dependence" were understood as dependence on *one* mind, as if anyone could determine the course of the social world. But this assumption is contradicted by any experience of the social world (my mind does not make the laws, nor the prices, at most it can write this article), as well as by the fact that in many circumstances our own mind seems to be independent of itself, such as when we develop obsessive thoughts that we would rather not have.

Even though we no longer have a contradiction between

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“dependence on the mind” and “independence from knowledge”, we still have to explain how social objects can persist even when we do not have consciousness or knowledge of them. That is why I argue that the foundation of the social environment is what I proposed we call **documentality**.⁴⁴ Documentality is the whole of the documents and recordings⁴⁵ that fill up our lives, not the sum of individual and collective intentionalities. In fact, when dealing with social objects we are not dealing with a series of intentionalities that consciously keep the object alive, so to speak, as if we all thought at the same time about the Constitution. It is not so: the Constitution is written, and at this point it is valid even if no one thinks about it (which in fact happens all too often).

Thus, from the perspective of documentality, the constitutive law of social objects is **object = inscribed act**. That is to say that a social object is the result of a social act (such as to involve at least two people, or a delegated machine and a person) that is characterized by being recorded, on a piece of paper, on a computer file, or even only in the minds of the people involved in the act. Once recorded, the social object, dependent on minds as to its genesis, becomes independent as to its existence – the same thing happens in the case of artifacts, with the only important difference that an artifact can offer its affordance even in the absence of minds (a table can be a shelter for an animal), while a document cannot.

44 In addition to the aforementioned *Documentality*, I refer the reader back to M. Ferraris, “Documentality Or why nothing social exists beyond the text”, in Christian Kanzian, Edmund Runggaldier (eds.) *Cultures. Conflict - Analysis - Dialogue, Proceedings of the 29th International Ludwig Wittgenstein-Symposium in Kirchberg, Austria*, Publications of the Austrian Ludwig Wittgenstein Society, New Series 3, (2007), 385–401; M. Ferraris “Documentality, or Europe”, *The Monist* 92:2, (2009), pp. 286–314, and M. Ferraris “Social ontology and documentality”, in Riccardo Pozzo and Marco Sgarbi (eds.) *Eine Typologie der Formen der Begriffsgeschichte*, Archiv für Begriffsgeschichte, Sonderheft 7 (2010), 133–148.

45 M. Ferraris, “Science of Recording”, in Herbert Hrachovec, Alois Pichler (eds.) *Philosophy of the Information Society*, Proceedings of the 30th International Ludwig Wittgenstein-Symposium in Kirchberg 2007, Frankfurt/M, Ontos Verlag, (2008), 110–123.

The fact that the meaning is not in the head, but in the world⁴⁶ is well illustrated, in my opinion, precisely by the relationship between affordance and documentality.

In addition to solving the puzzle of mind-dependence and independence from consciousness, documentality also allows us to provide a more solid basis for the constitutive rule proposed by the most influential theorist of social objects, John Searle: namely the rule “X counts as Y in C” (the physical object X counts as the social object Y in the context C).⁴⁷ The limit of such proposal is twofold. On the one hand, it does not seem able to account for complex social objects (such as businesses) or negative entities (such as debts, in which case it seems difficult to find a corresponding physical object). On the other hand, it makes the entire social reality depend on the action of a completely mysterious entity (as opposed to documents), that is, collective intentionality, which allegedly manages the transformation of the physical into the social.

According to the version that I propose, on the contrary, it is very easy to account for the totality of social objects, from informal promises to businesses and even negative entities such as debts. In all these cases there is a minimal structure, which is guaranteed by the presence of at least two people who commit an act (which may consist of a gesture, a word, or writing) that can be recorded on some support, even if it were only human memory. In addition to accounting for the physical basis of the social object – which is not an X available for the action of collective intentionality, but a recording that can take place in multiple ways – the rule that I propose (and which I call the “rule of documentality” as opposed to the “rule of intentionality”) has the advantage of not making social reality depend on a function, i.e. collective intentionality. In fact, such function is dangerously close to a purely mental process: this led Searle to make a statement that is anything but realistic, namely that the economic crisis is

46 See H. Putnam, “The meaning of ‘meaning’”, 227.

47 J. Searle, *The Construction of Social Reality* (New York: Free Press, 1995).

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largely the result of imagination.⁴⁸ From my perspective, on the contrary, since this is a form of documentality, money is anything but imaginary, and this circumstance allows us to draw a distinction between the social (what records the acts of at least two people, even if the recording takes place in the minds of those people and not on external documents) and the mental (which can take place only in the mind of a single person).

One last consideration about **hermeneutics**,⁴⁹ which postmodernism rather weirdly has claimed the monopoly of. By this I do not at all mean to argue that there are no interpretations in the social world. But the first and fundamental interpretation consists in discerning between what can be interpreted and what cannot be interpreted, what links exist between ontology and epistemology and what is the relevance of the latter with regard to natural, social and ideal objects. In the social world, epistemology undoubtedly matters to a great extent because it is **constitutive** with respect to ontology (whereas, in the natural world, it is only **reconstructive**: it finds something that exists independently of epistemology); what we think, what we say, our interactions are all crucial, and it is crucial that these interactions are recorded and documented. This is why the social world is full of documents: in archives, in our drawers, in our wallets, and now even in our mobile phones.⁵⁰

Thus it becomes possible to assign the realist intuition and the constructivist one each to their sphere of competence.

48 “It is, for example, a mistake to treat money and other such instruments as if they were natural phenomena like the phenomena studied in physics, chemistry, and biology. The recent economic crisis makes it clear that they are products of massive fantasy.” J. Searle, *Making the Social World: The Structure of Human Civilization*, New York, Oxford University Press 2010, p. 201.

49 On this topic, see M. Ferraris, “A New Realist Approach to Hermeneutics”, in *Phainomena* (Ljubljana), *Selected Essays in Contemporary Italian Philosophy*, XXI, 82-83, November 2012, pp. 67-83.

50 M. Ferraris, *Where are you? Ontology of the Mobile Phone*, New York, Fordham UP 2014. See also “Where are you? Mobile ontology”, in *Mobile Understanding. The Epistemology of Ubiquitous Communication*, ed by di K. Nyiri, Vienna, Passagen Verlag 2006, pp. 41-52.

1. Natural objects are independent of epistemology and make natural science true. 2. Ontology is independent of epistemology. 3. Social objects are dependent on epistemology, without being subjective. 4. “Intuitions without concepts are blind” applies primarily to social objects (where it has a constructive value), and less to the epistemological approach to the natural world (where it has a reconstructive value).⁵¹ 5. The realist intuition and the constructionist intuition have therefore equal legitimacy in their respective fields of application.

My final thesis is that that **intentionality derives from documentality**. Postmodern thinkers much insisted on the fact that the subject should not be considered as a fundamental datum, but their position usually did not go much beyond the criticism of the “Cartesian subject” and the mere hypothesis that the subject is conditioned by culture. I believe the prospect of documentality provides the basis for a positive development. It begins with the theory that – from its ancient to its modern supporters – conceives of the mind as a tabula on which to lay inscriptions. In fact, as we have seen, there is a powerful action of inscriptions in social reality: social behaviours are determined by laws, rituals and norms; social structures and education form our intentions.

Imagine an Arche-Robinson Crusoe as the first and last man on the face of the earth. Could he really be devoured by the ambition to become an admiral, a billionaire or a court poet? Certainly not, just as he could not sensibly aspire to follow trends, or to collect baseball cards or still lives. And if, say, he tried to produce a document, he would be undertaking an impossible task, because to make a document there must be at least two people, the writer and the reader. In fact, our Arche-Robinson would not even have a language, and one could hardly say that he would “think” in the usual sense of the term.⁵² And it would seem difficult to argue that he was

51 M. Ferraris, “Kant and Social Objects”, in Kant und die Aufklaerung, ed by Luigi Cataldi Madonna and Paola Rumore, Hildesheim – Zuerich – New York, Georg Olms Verlag 2011, pp. 229-237.

52 In agreement with the argument against private language proposed by Wittgenstein (*Philosophical Investigations*, paragraphs 243-421). There

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proud, arrogant or in love, for roughly the same reason why it would be absurd to pretend he had friends or enemies.

We thus have two circumstances that reveal the social structure of the mind. On the one hand, the mind cannot arise unless it is immersed in the social, made up of education, language, communication and recording of behaviours. On the other hand, there is the huge category of social objects. Rather than sketching a world at the subject's total disposal, the sphere of social objects reveals the inconsistency of solipsism: the fact that in the world there are also others in addition to us is proven by the existence of these objects, which would not have a *raison d'être* in a world where there was only one subject. If it was not possible to keep traces, there would be no mind, and it is not by chance that the mind was traditionally depicted as a *tabula rasa*, a support on which impressions and thoughts are inscribed. But without the possibility of inscription there would not even be social objects, which consist precisely in the recording of social acts, starting from the fundamental one of the promise. And, if this is the case, perhaps we should translate Aristotle's sentence that man is a *zoon logon echon* as: man is an animal endowed with inscriptions, or rather (since one of the meanings of *logos* in Greek is "promise", "given word") as "man is an animal that promises."⁵³

must be at least two people not only to produce a document, but also to have a language.

53 "To breed an animal *with the right to make promises* - is not this the paradoxical task that nature has set itself in the case of man?" F. Nietzsche, *The Genealogy of Morals and Ecce Homo* (New York: Vintage Books, 1967), 57.

A Dialogue Between Graham Harman and Tristan Garcia

Moderated by Rik Peters

April 6th, 2013 at Wijsgerig Festival Drift, in the OT301 in Amsterdam, NL

Wijsgerig Festival Drift is an annual student-organized philosophy festival in Amsterdam, with close ties to the student association of the philosophy department at the University of Amsterdam (UvA). The programme consists of lectures by philosophers in two or three different halls; live music; poetry. The combination of location (an old film academy building), time (from 8 pm to 4 am) and content (serious academic philosophy) makes for an unusual evening. In 2013, the festival's theme was 'de dingen de baas', which translates to 'things in charge' or 'in charge of things'. The headliner was the debate between Graham Harman and Tristan Garcia.

Rik Peters

We are very pleased to welcome two special guests who will be having a special dialogue. For the next hour and fifteen minutes, we will talk about things.

Things and objects - as Noortje Marres has just shown¹ - are traditionally only half of what philosophy is about; half of the duo of the subject and the object; the human and the thing. In Graham Harman's words, philosophy traditionally

¹ Just prior to this debate, Noortje Marres gave a lecture titled 'Nothing special: for a more forgiving nonhumanism'.

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had a 'human-world duopoly'², a dual monarchy of human and world, a 'Habsburg metaphysics'³ forever incapable of considering humans as 'just one kind of entity among trillions of others',⁴ and equally incapable of considering what things do when there's no humans around. Objects are pushed from the centre stage to the periphery of philosophy, as human consciousness lays a claim to total power.

However, the objects are back, and they're back with a vengeance. Tonight, Drift welcomes perhaps the two leading figures in the philosophical turn towards objects: Graham Harman, of the American University at Cairo, and Tristan Garcia, of the Universite de Picardie at Amiens.

Graham Harman was one of the first to put objects back on the philosophical agenda in a series of books, starting with his dissertation on Heidegger's analysis of the tool. He is one of the original four Speculative Realists, having taken part in the seminal conference in London in 2007, and has been in constant philosophical debate with the other speculative realists ever since. Besides tirelessly developing an Object Oriented Ontology, he has published on such diverse figures as Bruno Latour, H.P. Lovecraft and Quentin Meillassoux. I should also mention that he has published a book of literary experiments with philosophical myths.⁵

Tristan Garcia, whose first major philosophical work *Forme et objet* was published in French in 2011 (and the English translation will be out in 2014), can be considered as a member of the second generation of object-oriented philosophers. While he was writing several highly acclaimed works of prose fiction - notably, 2008's *La Meilleure Part des Hommes*, (translated

2 Graham Harman, *The Quadruple Object* (Winchester: Zero Books, 2011), 46..

3 Graham Harman "I am also of the opinion that materialism must be destroyed" *Environment and Planning D: Society and Space* 28 (2010), 772-790, 772.

4 Ibid.

5 Graham Harman, *Circus Philosophicus* (Winchester: Zero Books, 2010).

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as *Hate, a Romance*) - Garcia was working on a mature philosophical system dealing with things and objects, rooted in the dialectical tradition of Hegel, as well as in analytical philosophy ranging from Wittgenstein to such lesser known figures as Twardowski and Meinong.

Tristan Garcia was only introduced to the work of Graham Harman after his book had been finished; which makes it all the more intriguing that both theories of objects share so many features. In Garcia's words, their systems 'provide a rare example of ways of thinking that intersect and meet at certain places and concepts, even though they derive from different horizons and traditions and aim at very distinct goals.'⁶ Both Harman and Garcia are committed to defending the fundamental equality of all things - the equality not only of tables and humans, but also of Japanese ghosts, Popeye, the AIDS virus, parts of horses and the Roman Revolution. Besides, both are committed to treating imaginary or impossible objects as objects no less than one would cows, chairs and neutrons. Finally and perhaps most importantly, both preserve a sense of the richness of the world of things, of the fine texture of the carpentry of things; objects in Garcia and Harman are never boring bundles of qualities or grey dull substances, but always fascinatingly complex realities, torn from themselves or withdrawn into themselves, solitary objects alone in the desert or cosmic Russian dolls wrapped up one in the other.

Tonight, we will explore the similarities and differences between their two systems of thought in the first installment of a philosophical dialogue that will occupy not just these two philosophers, but all of philosophy for at least the few decades to come. Please welcome Tristan Garcia and Graham Harman.

[*applause*]

Now, we will start with an opening statement of about 15 minutes by each of you in which you explain the basic structure of your philosophy; starting with Graham Harman.

Graham Harman

I will try to give you a very compact fifteen-minute account

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of Object-Oriented Philosophy and I will try to do it more slowly than I normally speak, because I know that I'll lose some people if I speak at my normal high speed. And I'll end with *one* point of difference that I feel exists between my philosophy and Tristan's. There are several: we agree on a lot of things but we also have several differences.

Object-Oriented Philosophy. First of all, I would agree with my good friend Noortje Marres in opposing both kinds of exceptionalism, human and non-human. What I would disagree with is the idea that Object-Oriented Philosophy is a non-human exceptionalism. The term 'object' does not refer in my use to non-human objects...

Is it too fast? [*laughter*] Sorry. I'll slow down.

The term 'object' does not refer only to non-human objects at the expense of human ones. It's meant to be more general; to refer to all objects: to people, and also to things that are not people. All of that under one heading. Object means people and non-people, it means objects and subjects.

For me, it started with Heidegger, whom I read in a rather unorthodox way. Heidegger can be viewed as a rebel within phenomenology. Phenomenology, of course, wants to avoid any hypotheses about what is outside the phenomenal; avoid at the first step any scientific theories or other theories of what causes phenomena to appear to us, and focus on a very patient and subtle description of what appears to us.⁶

Heidegger, while learning those lessons well, also pointed out that for the most part things are *not* present to us. For the most part the things we encounter are hidden from us, they're withdrawn from us. So you aren't thinking about the chair you're sitting on until I mention it, unless it's very uncomfortable. You're not thinking of your bodily organs unless they're failing. You're not thinking about the oxygen in the air unless it's very hard to breathe. For the most part, we're taking things for granted; we rely on things.

This is Heidegger's famous tool-analysis from *Being and*

6 Tristan Garcia (2013). "Crossing Ways of Thinking: On Graham Harman's system and my own", *Parrhesia* 16, 14-25.

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Time which he actually came up with eight years earlier in his first lecture course in Freiburg. Now, this is often read as 'Heidegger shows us that praxis comes before theory and that all theory emerges from this unconscious practical realm.' And I object to this reading. The reason I don't like this reading is because praxis distorts things just as much as theory does. So if I look at the table I'm not understanding all aspects of the table, but if I use the table I'm also not exhausting the table. Praxis is just as shallow as theory. It's not getting to the bottom of things any more than theory does. Praxis and theory are basically on the same level of reality for me.

But you have to push this one step further to make it even weirder which is to say that objects do this to each other as well. It's not just that we poor finite humans with our tragic finitude, our limitations, are unable to grasp the thing-in-itself. Objects are also unable to interact with things in themselves. When fire burns cotton - which is the famous example from Islamic philosophy - fire does not interact with the color or the smell of the cotton. Most likely, it's interacting with the flammability of the cotton. So the fire is also distorting the cotton, it's translating the cotton into its own terms.

So things never make direct contact for Object-Oriented Philosophy. They're *withdrawn* from each other (Heideggerian term), they're hidden from each other. And this is true of all objects, all objects in their interaction with each other.

Just like Bruno Latour and Alfred North Whitehead, I would say that all relations are on the same footing. The human relation to the world is not special. The human relation to the world is just a special case of the relation between raindrops striking the table or fire burning cotton or two rocks slamming together in outer space. Every relation distorts the terms of the relation. There's something withdrawn, something real. And I hold that this is all that Heidegger meant with his *Seinsfrage*, his question of Being: the fact that something withdraws from presence. Being is that which withdraws from presence.

Now for Heidegger, tools tend to form a system. You can't take one tool in isolation as if one tool came first and then another. The bottle gains its meaning from its use for me,

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from the effect it has on the table and so forth. I say that this is inconsistent even on Heidegger's own terms, because for Heidegger tools can break. The table can collapse, your bodily organs can fail, the chair can crack and even fall to the floor. This would not be possible if tools were reducible to what they are in a system, if tools were holistic. So tools are *not* holistic. Tools are partly withdrawn from the systems in which they are inscribed. Which means Being cannot be one - being is multiple.

Heidegger sometimes uses the difference between Being and beings - the ontological difference - to mean the difference between absence and presence. And I think that's the good sense of Heidegger's philosophy: absence and presence. But he sometimes also uses this to mean the difference between the one and the many: that Being is this inarticulate thing that withdraws and you can't say that it's made out of parts, and beings are individual things, which are always superficial for Heidegger. And this is why discovering Bruno Latour in my graduate school career was very helpful for me because Latour is someone who takes individual entities very seriously. In a very witty fashion, he takes them seriously as objects for philosophy.

So objects cannot interact directly, they interact indirectly in what I call *vicarious causation* or *indirect causation*⁷ They have to be mediated by a third term. I'll explain in a second how that can happen.

First, I want to say: why don't people like Object-Oriented Philosophy? What is it that they dislike about objects?

There are two basic ways you can destroy objects as the basic topic of philosophy. The first is to *undermine* them. You can say that 'these things aren't real. What's real are neurons, or what's real are quarks and electrons. You go down to the very small and that's what's real. Everything else is an illusion made of these tinier parts.'

7 See Graham Harman, "On Vicarious Causation", in *Collapse: Philosophical Research and Development II*. (Oxford: Urbanomic, 2007) 171-205

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And you find some extreme forms of this. You also find it in pre-Socratic philosophy, in the beginning of Western philosophy and science, where water is the fundamental thing or air is the fundamental thing or atoms. Individual mid-sized objects are considered superficial in this tradition. And we see this today in scientific materialism in its extreme form: that you can break everything down to its tiniest parts and explain it that way. Undermining.

The problem with undermining as I see it is that it cannot explain emergence. It can only treat larger things as aggregates of tiny particles. It can only treat Amsterdam as a set of atoms so that Amsterdam's going to change every time the atoms change. And this seems philosophically quite arbitrary to me. Things are somewhat robust to changes in their parts. We lose the atoms in our bodies every 7 years on average. Drift had almost completely different people last time I was here four years ago; a few of my old students are still here, but otherwise the room is filled with people I've never seen before in my life - it's still Drift in some sense. It's in the same building, it has the same structure and so forth.

That's undermining. You can also go in the opposite direction which is the more typical modern technique, which I call *overmining*. I invented that term by analogy with undermining, which you can do in English. The French translator had a hell of a time trying to render it. He did a pretty good job, but you can't do that in French of course, and in a lot of other languages.

Overmining says not that objects are too shallow; it says objects are too deep. 'Why do you need this superstition of objects hiding behind experience? All that exists are events or perceptions or language or power or the human-world-interaction. There's no need to naively posit these real objects hiding behind the world.' That's the overmining critique of objects.

My critique of this is that it cannot explain change. Because if everything is nothing more than how it is currently expressed, how can it become something different in the future? If I am nothing more than the effect I'm having on

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all of you this moment, the effect I'm having on the chair, the effect I'm having on family members and friends who are thinking about me right now; how is it that my life will be different 24 hours from now when I'm in Berlin? It's a very basic philosophical question. It's because I am not reducible to all that I am right now. I am detachable; I am something more than what I am right now. So we can move into different contexts.

Now, I found that these two strategies do not usually act in isolation. They usually go together. Usually, they need each other as a crutch. They're parasites off of each other because either one in isolation seems too extreme. I'll give you some examples.

Scientific materialism, for example, seems like the classic undermining theory because it's going all the way down to the bottom and there are these tiny particles everything is made of. And yet, they're not just hidden down there because they're knowable. They can be mathematized for the scientific materialist, which means that they are isomorphic with the mathematical knowledge we have of them. Quentin Meillassoux is a good example of this: he thinks we can mathematize the primary qualities of things, yet he realizes that if he did that, if he said everything is mathematizable, he'd sound like a Pythagorean; he'd sound like he's saying everything's mathematical. So he has to posit this undermining term: 'matter'. There's this 'matter' that the mathematical forms inhere in and he never really explains what that matter is. So that's one example of a theory that undermines and overmines simultaneously.

Another example would be my good friend Bruno Latour, who on the one hand looks like a classic overminer, because he's saying that objects (or 'actors', as he calls them, not objects) are nothing more than their effects. 'Actors are nothing more than what they transform, modify, perturb or create', his famous phrase from *Pandora's Hope*.⁸ Which means there

8 Bruno Latour, *Pandora's Hope. Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press., 1999), 122

is no actor hiding behind the thing it does. That's a superstition for Latour. The problem with that in my mind is that you cannot explain how the actor is able to do different things at different times; how it's able to have different effects from one day to the next. And I think he began to realize this is a problem, because starting about seven years ago he posited this new concept we hadn't seen before called the 'plasma'. And the plasma is what explains all change for him. It's this kind of inarticulate lump, kind of like the Presocratic *apeiron*.

And he gives great examples in *Reassembling the Social*. He says 'what caused the Soviet Union to collapse overnight without a warning? The plasma. What causes your friendships and love affairs to break up when you don't expect it? The plasma.' And the best example of all - which might never have happened: 'How does the most mediocre academic musician suddenly compose a brilliant symphony? The plasma did it.'⁹

Now you can see the problem. Because the same plasma's shared by everything. He says the plasma is the size of London and all the networks of actors are the size of the London underground, so it's much smaller.¹⁰ So the plasma is this gigantic force, kind of like Aristotelian potentiality. But that's an example of the two, undermining and overmining, going together.

I needed a name for the two going together, undermining and overmining, and I thought of *duomining* because that's the natural Latin solution to it. And I looked it up on the web and that term does exist, thankfully, because I hate coining new terminology; I prefer to use words that already exist in a different sense. Duomining comes from the credit card industry, of all places. It means they're finding all about you using data-mining *and* text-mining. They call it duomining.

And so duomining is now my technical term for most philosophies in the Western tradition. Only a few philosophies reduce in only one direction consistently. Berkeley is

9 Bruno Latour, *Reassembling the Social: An Introduction to Actor-Network-Theory* (Oxford: Oxford University Press, 2005), 245.

10 *Ibid.*, 244

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probably one of the few examples: everything's overmined, everything is simply 'to be is to be perceived', there's nothing hiding beneath that. He's probably the only case of a complete overminer. Are there any complete underminers? If there are materialists who said that there are these particles that we cannot know anything about then that would be an example. I don't know if there are any materialists like that.

That, I think, is the biggest danger to thought.

Rik Peters

Could you go to your problems with Garcia's position?

Graham Harman

Okay, I will. Let me just say parenthetically that for me, the object is not given. Dan Zahavi was talking about the object as a mode of givenness.¹¹ There's also room for that in my model, because I also believe that Husserl is right too. Heidegger misses what's great about Husserl in many ways. What's great about Husserl is his discovery of objects at the level of experience.

What's so great about this? Well, if you think of empiricism... Empiricism loved to say that there are no objects. There are bundles of qualities but there are no apples. There's just red and hard and juicy and sweet and shiny; and we see those go together so often that we kind of naively posit this object there, an 'I know not what', *aje ne sais quoi* that's holding all these qualities together. So for them the qualities is all that we encounter.

Husserl reverses that relationship and says that we encounter the apple, because you can rotate the apple in your hand and you can see it from different angles and never do you think 'oh, these are closely related apples with a family resemblance.' - no! You say it's the same apple seen from different directions. So there's also this other kind of object that inhabits the realm of experience that you could call the

¹¹ Dan Zahavi was the first speaker of the evening, giving a lecture titled 'subjecthood and objecthood'

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‘intentional object’ - I call it the ‘sensual object’ for various reasons.

Just to put the final thrust in before I go to Garcia’s position. What’s important for me about the fact that there are two kinds of objects [real and sensual] is that if you have two real objects they can never touch, because they’re going to withdraw from each other. So causality becomes impossible; relation becomes impossible. Just like if you had only north pole magnets you could never touch magnets: they would repel. So you need a second kind of object to be the bridge between pairs of the first kind; those are what I call the *sensual objects*.

So two real objects meet through a sensual object. Stated more bluntly: two real objects meet in the mental experience of a third object. It doesn’t have to be human mental experience. It can be the mental experience of rocks or plants or armies or any entity you want to talk about.

So. I won’t go into detail about that. But I should just say that that means that there are two kinds of objects, two kinds of qualities: that gives a fourfold structure. Which I argue is analogous to the fourfold Heidegger talks about but explains miserably in his late work. But it’s the same thing, basically. And the research program of Object-Oriented Philosophy is to explore the tensions there between the four poles. Whereas most kinds of philosophy want to deny the tensions, they want to collapse reality into appearance or they want to collapse objects of experience into bundles of qualities, Object-Oriented Philosophy is about not allowing that collapse. It’s about preserving the tension and it’s about explaining how it occurs.

Tristan Garcia - you’ll all be reading him a year from now. If you read French I hope you’re reading him already; if you don’t read French you can all read English I guess. His book *Form and Object* (that will be the English title) will be out from Edinburgh University Press a year from now. It’s this wonderfully large systematic treatise that none of us in the older generation have been able to match in terms of its scope and breadth. It’s a wonderful achievement.

Just to talk about *one* aspect of the text where we disagree

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(he can explain the other positive features of the text, we're going on long enough): Tristan Garcia seems to agree with me that objects are irreducible in both directions. They cannot be reduced to that which they are made of or that in which they are as an environment. However, whereas I say the object is neither its parts nor its effects - it's in between those - Tristan says it's the difference between those two: it's the difference between its pieces and its outward effects.

For me, this risks duomining, because this risks making the object hypersensitive in both directions; so that I change when my atoms change and I also change when I'm three centimeters further from you rather than four centimeters. Whereas for me the object is that which is robust to such changes in both directions; the object is that which maintains an identity to some extent. You can't take away all my atoms, but you can certainly take away some of them.

So, that is my question to Tristan: does he avoid duomining; and if he does not avoid what I call the duomining position, reducing the thing in both directions at once, how can he explain emergence, how can he explain change in things? Is duomining the price Garcia pays for avoiding the thing-in-itself? "Price to pay" is a great technical term in Garcia's work. I'm saying: is this the price he's paying for avoiding the in-itself? If so, I think it's too high a price.

RP

Thank you Graham Harman. So to summarize: we should avoid undermining, we should avoid overmining, we should avoid duomining, and if we avoid all those then we are left with a fourfold structure of which the tensions should be investigated. And you think Garcia might risk falling into duomining.

GH

One last sentence if I can. I forgot to say that the price I pay for this is the notion that you cannot talk about things directly. Because you cannot formalize things mathematically, you cannot explain them by talking about what their parts are.

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You have to allude to things. You have to speak about them indirectly. To those who say that this leads to poetic gibberish (as some of my critics say) I say: that's what philosophy has done all along. Socrates is the one who told us that *philosophia* is the *love of wisdom* and not wisdom. So you can never know for sure what the features of virtue are or what the features of friendship are. So it's no different.

RP

Then - Tristan Garcia, could you explain the basic structure of your philosophy in *Forme et objet*?

Tristan Garcia

Thank you Graham. I hope you will be patient because my English is not very fluent. If Graham was speaking a bit too fast, I will be speaking too slowly. So be patient.

I wrote this book called *Form and Object: A Treatise on Things*. It's about things and objects. Because on the contrary to Graham, I have two concepts: object and thing.

Part one of the book is about the definition of what 'something' is. Just: what is a thing? I'm trying to avoid two considerations. If Graham is speaking about undermining and overmining, I'm speaking about *less-than-a-thing* and *more-than-a-thing*. First, I try to demonstrate that there cannot be such a thing as 'less-than-a-thing' or 'more-than-a-thing'. There's just 'something' and equally something. That's why I'm trying to build a pattern or schema to understand what a new and original definition of 'something' could be.

The first point of my argumentation would be: let's try to imagine something that would be absolutely *less* than something. Something absolutely less than something would be nothing. Something absolutely *more* than something would be a substance or absolute; or what I would call something 'in-itself', something being in-itself.

I claim that there is no such thing as 'nothing'. I try to demonstrate that 'nothingness' is in fact always a confusion between two concepts. Because when we say 'nothing', in fact we want to say at the same time - we want to mean at the same

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time - the *opposite* of something and the *absence* of something.

The *opposite* of something is just the reverse of something, the negative of something. If you have something, at the same time you always have something-other-than-a-thing, which is everything-but-that-something. And everything but that something is the opposite of something.

Then you have to deal with the absence of something. The absence of something is just an operation; it's an event. If you take the something out of its mold, so to speak, (admitting that the something lies in its negative as in some sort of mold) - if you take the something out of its mold, the something is there no more: it's absent.

If you're trained to think something like 'nothing' in the great Western tradition of philosophy you're trying to think that the opposite of something is the absence of something and the absence of something is the opposite of something. But, by showing that the absence of something and the opposite of something are two different things, I reveal that there is no such thing as 'absolute nothingness'. If you never have nothing, you always have something. So you never have less-than-a-thing and you cannot have absolutely less than a thing: you always find something.

Can you think absolutely *more* than something? Something that would be absolute, something in-itself? The book aims to show and to demonstrate that if you have something in-itself, there's two options. If it's really in-itself you no longer have something to be in-itself.

If you have in-itself you cannot have something anymore. And if you still want to have entities, it cannot be in-itself, because there still remain a small difference between that which is in the thing and that in which the thing is: the thing as a container and the thing as content. In *Form and object*, I came to the conclusion that all that western philosophy used to call substance is neither *nothing* -I show that nothing leads to something - and that if there is not nothing, if there is really something to be in-itself, then there are *two* things: the thing as a content and the thing as a container.

If you have *more* than something, in fact you have always

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two things. If you have *less* than something, you still have something. All the ways, all the paths thus lead us to thingness. To the fact to be something.

In saying that you have something, that you cannot get more than something and that you cannot get less than something, I'm trying at the same time to give a new definition of what that something could be.

Well, what could 'something' be? I would like to defend a totally liberal ontology, where each thing could equally be something - no more, no less. I intend to build this liberal ontology - not in a political sense, not a 'liberal' or 'libertarian' ontology, but to show by building a liberal ontology that in fact any political liberalist theoretician is never liberal enough. I'm just trying to be more liberal than any kind of liberalist, by saying that each thing could be equally something. This table is something, but each part of the table is something as well. My finger is something as well as my hand. And my hand as it was 10 minutes ago is something as well as my hand now.

As a consequence: no differences of time, no differences of space, no determination. What I'm saying is: give me no-matter-what thing, it's going to be something and it's going to be equally something. My main concept is no-matter-what. If you ask: what is something? I'll answer you: no-matter-what is something.

And if no-matter-what is something, it's because it's not reversible. It's exactly because something is never no-matter-what. So no-matter-what is something; and something is not no-matter-what. Why? Just because something is *some* thing. So something is never whatever thing. I try to make clear that to be is always the exact opposite of to comprehend. So no-matter-what is something; something comprehends no-matter-what. And I try to show a way to represent *being* as a channel of distribution. Being - comprehension.

Let's say it again: no-matter-what is something. Which means: the table, each part of the table, each table at each moment and so on. Why could it each time be something? We could think that each thing, each entity, is something just because it is *one*. But I found out that oneness was not the condition

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of thingness. Why?

For example, a famous quotation of Leibniz is ‘a *being* is *one being*’¹² - but a thing is not *one* thing. It’s not because something is *one* thing that it is *some* thing. Why? Because to be one thing is always to count as one. And to count as one - to count as one finger, for example - is to count as one possible finger among many other fingers. This means that to count as one is not to be equally. Because to be one is the beginning of inequality: of the contrary of equality. To keep it simple: two will always be more than one. Two fingers are more than one finger.

To be something is not to be *one* thing. Why? To be something is to be the only thing. Something is something if and only if it is the only thing. My ontology is an ontology of solitude and exclusivity. I do believe that every entity in the world has the capacity to destroy the capacity of all other things to be something. If something is something, nothing else is something. When and if my finger is something, my hand is not something; I am not something; the table is not something and so on. Why? Because to be something is to be the only thing. So in so far as my finger is something, everything but my finger should be indistinguishable.

You have only one thing at the world at the time, in my ontology. You never get two things at the same time. You have only one thing, because each thing stays alone or solitary. Which means that each thing is entering into the world alone.

The world is the place where each entity is absolutely alone. The world is, so to say, at the same time the common place of things, because each thing lies in the world. It means, paradoxically, that the world is a place, a common place, where each entity is absolutely alone.

Basically, I’m trying to build this model assuming that no-matter-what is something and something is in the world. Nothing is no-matter-what; no-matter-what is something; something is in the world; and the world itself is not something, not some thing. The world is not something and the

12 G.W. Leibniz, “Letter to Arnauld” 30 April 1687 (G II 97/AG 86)

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world is not in something.

‘Something’ is just the small difference between no-matter-what and the world. Each thing can be at the same time in the world - namely in something-other-than-a-thing, its negative; or in another thing. Each thing, for example the table: the table is something if it’s in the world: if it’s in something other than the table. But the table, at the same time, can be in this room, it can be in Amsterdam, it can be in the material world and so on. It can be in a lot of other things. And something in another thing is what I call an *object*.

To recapitulate: a thing is what is alone in the world. An object is a thing being in another thing (being in another thing, being in another thing...). Objects are within each other. Objects are things in relations to each other. Something, a thing, is always alone with no relation, because a thing stays lonely - there is no other thing. A thing is in the world and has no relation to another thing.

Trying to build this strange kind of dualism between thing and object, in the second part of my book I have a new look at the kinds of belonging of objects. An object in another object can be in *extensive* or *intensive* relations. And I do think we’ll talk about that. In the second part of the book, I’m wondering about *extensive* relationships, such as classes, gender, species, ages of life and so on; and at the same time I’m wondering about *intensive* identities of objects, such as time, life, or values.

All of my book is about this difference between being alone and being in a relation; being a thing or being an object.

To answer Graham and to begin with our debate, the main difference between Graham and me is that I am always trying to maintain, to sustain this difference between thing and object. In my view, what I am now, what I was 10 minutes ago, what I was 1 second ago cannot but be different things. Each version of me is something. But I am still one and only one object in time. Therefore, I’m trying to find at the same time the concept of some object that can have identity and at the same time I’m trying to conceptualize things which are entities *without* any identity. What I call ‘things’ have no identity at all, because each thing is something different.

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And to have identity you must identify something to something else; which I cannot do because my thing is alone and each thing is something else. Things are entities without any identity; objects are things *with* identity: extensive and intensive identities.

RP

Thank you. Before we go into the technical details - a question that will be on some peoples' minds right now is: why should this be the path that philosophy is taking? After all, we are humans and philosophy is difficult enough when we are talking about humans. Why go down this particular path of objects? What is there to gain from this?

TG

Well, I would say: to think is just a marvelous possibility to make abstraction of our humanity. It's a blessing. And it's a possibility that becomes a sort of duty of thinking: to think each entity as being equally something. It's a duty of thinking because *while* thinking, you have access to the thingness. And as I said, I'm firmly convinced that you *cannot* but think with things. Meaning: each time you are trying to overmine or undermine, as Graham would say, you are caught in a trap, in a theoretical trap. And each time you're trying to get something less than a thing or something more than a thing you are going on a way outside the things and then going back to the things. Because if you want to have such things as 'events' or 'pure intensities' or 'pure differences', in fact you are building a new thing. One day or the other, you will find differences between your pure differences or differences of intensities. And then you will have to say: okay, these are your things. So to think about things is just to try to be honest with the duty of thinking; and to try to show what our entities are, what our fundamental entities are. It cannot be something less than something and it cannot be something more than something. So let's try to really think what 'something' could be.

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RP

Okay, so the point is that we cannot escape from things.

TG

Yes, we cannot escape from thingness.

RP

Is this why in your book you talk about an epidemic of things?

TG

Yes. Because I think that as long as there is something, there cannot be something less or something more than something. If there were no thing, absolutely nothing, well, we couldn't think about something. But if there's just something, then there's an epidemic of things. For example: if there were nothing before something, then the nothing coming before something is something too now. That's why we do have to think about somethingness or thingness.

RP

Next, let's talk about the in-itself; which is of course a classic philosophical problem, but takes a very specific form in this debate. Graham, if you could first explain why you think the in-itself needs to be defended; and then Tristan can reply.

GH

Yes. The last really great universal revolution in Western philosophy that everyone reacts to in some way is Kant's revolution. You'll find people who say that Hegel is a charlatan or that phenomenology is useless; you're not going to find too many people in the western philosophical tradition, analytic or continental, who say that Kant was a charlatan. I don't think I've ever heard that. People take him very seriously.

What did Kant do for us? What are we responding to? At least two different things. And you can try to overcome either of those two things and whichever one you choose to try to overcome is going to determine your path. You could say: Kant gave us the thing-in-itself that can be thought but

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not known, it's outside of us. Then you can reply that that's a contradiction, because to think of the thing in-itself is already to think it and therefore we're trying to get into a thought and therefore we're already inside the loop. And this is the German Idealist response to Kant; and you see it again today in Zizek and Meillassoux and to

some extent in Badiou. It's the more fashionable one right now.

You can also do a different thing, which is what I like to do. Which is to say: Kant was right about finitude. Finitude is here to stay. He's got a good point about that. His mistake was to limit it to poor, tragic, finite humans. Instead, objects are finite with respect to each other as well. If that path had been followed, you wouldn't have had a German Idealism, you would've had a German Realism. And this would have been quite possible counterfactually, because Germany was so steeped in Leibniz; they were already used to this idea that not only humans perceive. They could have gone in that direction and said that Kant was right about finitude but he was wrong to restrict it to humans, and so everything is noumenal for everything else.

That's the second path. I think you have to do that because I don't think you can get around finitude. If you try to get around finitude, you're trying to say that the thing is equivalent to what we can know of it or to what relation we can have to it. I've tried to show that that cannot explain change. That's why I think the thing in itself must be preserved. I think if you try to reduce it in either direction you're lost.

RP

Tristan Garcia, can you explain why you are against any notion of the in-itself?

TG

First of all, I don't use the in-itself concept the way Graham or even Quentin Meillassoux are using it. Maybe I could talk a bit about a famous text of Sartre where Sartre was at the same time interpreting and misreading Husserl, in one of

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the first French texts about intentionality.¹³ Sartre was saying that with intentionality, you can have a representation of the fact that if you were able to enter into someone else's mind, the fact that consciousness is intentional is the fact that if that someone was looking at the table, to enter their mind would be to learn how to go outside the mind. If you were entering consciousness, you would be immediately thrown out of this very consciousness. I aim to extend this intuition to every kind of thing: if you were able to go inside the table, to be the table, you would be excluded from the table, because that which is in the table is not that which the table is. The table is always outside itself. Why? Because a table is in the world. Because each thing is outside itself in the world.

I'm not trying to say there is no in-itself because it's inaccessible. I am not saying that we cannot have access to the in-itself. I would prefer to argue that no thing can have access to itself. To have a concept of thing, in my opinion, is to understand what we share with every kind of entity: the very fact of being exiled from ourselves.

It's a prime fact of ontology, to me: the fact that human consciousness is not the only one to be exiled and excluded from itself. Each thing, being a thing, has no access to itself. Each thing comprehends a lot of parts, of qualities, that are *not* itself, and the thing is *not* in the thing, meaning: the container of the thing is not the thing, and the thing is not its own content. So each thing lies not in-itself but outside of itself in the world. And I seek to understand the fact that the world is the common place of things. And if the world is the common place of things it's because there's a price to pay. The price to pay is the ontological exile of every kind of entity. To cut a long story short: I'm not pretending that we have no access to the in-itself, I'm just saying that no thing, absolutely nothing, has any kind of access to itself. Because there is nothing in-itself, meaning: everything lies outside of itself.

¹³ "Une Idee fondamentale de la phenomenologie de Husserl: Intentionalite", written in 1934.

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GH

I would agree that nothing has direct access to itself, but for me that's a proof *for* the in-itself, not against the in-itself, because this shows that nothing is reducible to any of the ways it can be viewed or seen by anything. Introspection is a great example, because you might think: 'I don't know what's motivating you but at least I know what's motivating me because I can see what's in my own thought.' Well, of course that's not true - why does psychotherapy exist? It's because we don't understand our own feelings or motives completely. Also, we often learn more about ourselves from other people, from remarks other people make about us than we do from introspection. And of course, the same would be even true all the more for tables and rocks and those sorts of things.

But I think that the fact that nothing can see itself to me means that there is an in-itself that you can get by subtracting from all the different views that we have on things.

Another question: you said earlier that a thing is one by being counted-as-one. Do you mean that in the same sense that Badiou means it or do you mean it in a different sense?

TG

I use, like Meillassoux did, some ontological background of theory of sets.

GH

Okay.

TG

I do not mean that there is only the void and then pure multiplicity; I mean that for me, to be is to be in. This is a prime fact of what I'm trying to explain. In my book, to be is to be in, not in a spatial way of thinking, but in a kind of ensemblist meaning. If I would say for example that my finger is in my hand, then my finger *is* my hand, because to be is the exact opposite of to comprehend. If my hand comprehends my finger, it means that my finger is my hand.

Maybe we could think about something more concrete, to

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understand that. For example, what I say about ontological exile or exclusion is grounded on the fact that if you [claim to] comprehend what you are, then in fact you are not what you are comprehending. You are already something else. You could never comprehend what you are, and you could never be what you are comprehending. Because there's a reverse function between to be and to comprehend.

So I would still be close to Badiou in this particular sense: that to be means to-be-in.

GH

Right, because the problem I have whenever Badiou says 'to be one is to be counted as one' is that it sounds like humans then have the power to determine what unity is; or thought, I should say; although I see no examples of thought other than human thought in his work. And this seems to be - not to beat my own terminology to death - it seems like a classic case of duoming. Because you have all the consistent multiplicity, which is everything that is counted as one; then you have the inconsistent multiplicity for Badiou, which isn't really a multiplicity at all, it's just there as an alibi that can erupt and create surprising events in politics and art and love and science from time to time. But it has no prior articulation before that happens. And what you miss again in Badiou is that middle ground where there are things that are not accessible to us but are still there. So what I'm getting at is that I'm worried that when you say 'the one is what's counted as one', you're moving towards a human exceptionalism, to use Noortje Marres' terminology, where it's the counter who decides what's real and what's not.

TG

But I'm not, because I say that to be one is not to be one thing. That's where I'm not Badiouian, in fact. It's not in fact to count as one. To be something is to be lonely. It's to be the only thing.

To answer your question, I still think that what comes first is the thing, not the relation. I'm not pretending that there

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would first be a relation between that which is in the thing and that which a thing is in. There is no 'first'. The world is not some kind of primary bundle of relations and relationships. There is just things. And I think we agree about that.

But I would like to specify that, for me, there is *only one* thing; because what exists is *each* thing. Existence concerns one thing at the time, and then, if there is one thing, then this thing should be analyzed as the relation between that which is in the thing and that which the thing is in. As soon as you discover this relation, *then* you can define objects, saying: this thing is in another thing, so it's an object, there's a determination and so on. But I'm not trying to say that first we have a relation and then we have things.

And then I try to understand the very fact that relations between objects are not objects as well. But objects *and* relations are things. An object is equally something as any relation is something.

RP

To come back to Graham's question: for you, to be is to be comprehended. This is your definition.

TG

Yes, it's 'to be been'.

RP

But comprehension, in the examples you give in your book, seems to be a function of the human mind. At least, so you seem to suggest.

TG

No, absolutely not. Because comprehension is not understanding. Meaning: the table comprehends all of its qualities and its color, its mass, its form, its geometrical figures, and even its possible uses. So to comprehend means simply the opposite of to be; and to be means simply the opposite of to comprehend.

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RP

So what is the relation between comprehension and understanding then? Because there does seem to be a sense in which...

TG

Understanding could be a very specific way of comprehending, if you are for example any kind of superior mammal. Or something like that.

To continue what I was saying: maybe Graham says. There are many times where Graham says that if you have new relations, then you have new objects. And I would like to talk about that, because I don't know if we agree about that.

RP

Graham, could you explain what that idea is based on?

GH

My criterion for an object is simply something that is not reducible in either direction; that is not simply an aggregate of parts and is not reducible to an effect.

There are some things that are. There are times when undermining and overmining are justified, I should say that. I'm not saying they're never good methods. For example, you can undermine morning star and evening star by saying they're both Venus, to take an example from analytic philosophy. In some sense you can do that. Fine, it's the same planet.

You can overmine something like witches. If someone says there are real witches causing all these things to happen in Amsterdam, you can overmine that by saying no, there's just these coincidental events that someone is stupidly ascribing to this witch who's being burned at the stake tomorrow because she cast all these spells on all of us.

So there are times when you can do that. What I object to is the idea that you must always do that to destroy all objects. I agree that in individual cases it's a must.

For me, all it takes to be an object is that something is not reducible in either direction. We can't always be sure.

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We can't be sure about anything, that's why it's *sophilosofia* and not wisdom (sophistry).

Does a relation meet the criterion of objecthood? For me, yes. Because if there's a relation that's a *real* relation, it's something over and above its parts. It's not reducible downward to its elements, and it's also irreducible to what anybody says about it or to how it looks from the outside. So let's say there's a real relationship between two people. You'd say that that's more than the two people, right? You'd say that something is created there that wasn't there with the two people alone. But you would also say that nobody really understands that relationship, including the people in it. That there's something real about it that is robust to our different understanding of it in different times. It's a mystery to people, even to the ones who are in it.

And then you can apply that to any kind of relationship, like the chemical relation that creates a molecule out of pre-existent materials.

RP

Tristan, you had a question about this theory.

TG

Yes. Because I think there's always a sort of trap in an ontology of objects. If you think that relations between objects are objects as well, for example, if there's a relation between this glass of water and this table, and if you say the relation between this table and the glass of water is an object too, if relations are absolutely the same kind of objects as the objects that are in this relationship - well, you have a serious problem. Because you will have to have some relation between the relation and the object, then you will have to have a relation between the relation-as-an-object and the object, and so on and so on.

RP

Graham?

GH

My answer to that is that you can go as far as you want with that, but you don't have to go along that path. If we're talking about a real relation, which means a real relation between real objects, that problem doesn't occur. You can of course specify. I can say there's a relation between this [*points at bottle*] and my brother who's off in Portland, Oregon. But that doesn't mean there's really a relation there.

And then, yes, this problem arises, I admit, then there's a relation between those parts. But I don't think it arises when you look at real relations. Ones that create a robust identity, that are irreducible in either direction.

TG

I'm pretty sure that each of us has to have a way to protect his theory against this reduction *ad infinitum*. Graham, you have your distinction between real objects and sensual objects. And I think this is partly why I have to distinguish between thing and object. Saying: each relation is something else, *and* the relation and the object are different things, and are equally things - no more, no less. Because the relation is *something*, entering into the world as well as the object; as well as the event or the object. But the relation is not an *object* as well as the object in the relation.

GH

How is that compatible with your ultra-flat ontology - even flatter than Meinong's?

RP

Could you explain the term 'flat ontology' first, for those unfamiliar with it?

TG

Some people talked about flat ontology before but I didn't know that. I was speaking about a 'flat world': an ontology of the flat world. Meaning by this expression that I wanted to have a plane, an ontological plane, where nothing, absolutely

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nothing, could be more or less what it was: something. By flat world I meant the fact that nothing can be more or less in the world than something else. Something - a contradiction, half of the table, the word 'table', the idea of the table - should be equally something.

But to think such a configuration of the world is more difficult than it seems. Because, for example, you will have to think that the idea of the table is something as well as each possible table. Meaning: you have to admit with the nominalist that this table is something. But the nominalist is going to tell you: this table is something, but you know, the general idea of a table is just less-than-something, because it's a construction of your mind and so on.

Then you need to speak with the Platonist, for example, who's going to tell you: *the* idea of the table is something. *That* is something. The idea of the table, *that* is something; but this table is just an ontological degradation of the idea of the table.

So you have, at the same time, to admit with the nominalist that each table is something, and to admit with the Platonist that the idea of table is something. And you have to argue against the nominalist: well, you're right: this table, that table, are equally something. But the general idea of table, the abstract idea of table is something *as well* - no more, no less. It's not less-than-a-thing, because it would be some kind of abstraction. But it's not more-than-a-thing, as what the Platonist would say: it's an *eidōs* or it's an idea of table.

To build a flat world is a very complex gesture, where you have to be the best friend of your theoretical enemies. You have to get into the habit of giving a right to each philosophical opponent. And to say: okay, you are right, this [*points at table*] is something, but you are right too, this [*points at sky*] is something; this is no more, no less something.

And to somebody that could be what you call in the theory of time a 'presentist' (who claims that what exists only exists at *this* time, it's present), you have to say: okay, you are right. It exists, it's something, everything which is present is something. But then you have to say to the eternalist too, who's going to tell you everything that exists *eternally* exists

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- past, present, future - you have to say: you are right, too. It exists, it's something.

It's very difficult as a philosopher to concede to *anybody* that he's right. In saying that he's right, you have to say that he's wrong too. He's wrong, because he's denying to another the opportunity of recognizing other entities. To think of a flat world is to say 'yes' to everybody, until this very point where you have to say no again. Saying: yes, you're so right that I have to tell you no; because you're trained to deny the other the possibility to have his entities. So to have a flat ontology is this kind of philosophical gesture, where you say: no- matter-what is something; give me anything, and I'll have to admit that it is something.

RP

This is interesting, because you seem to arrive at a *flat* ontology by going as far as you can, but ultimately rejecting reduction upwards and downward. Graham, on the other hand, also by rejecting reduction, arrives at a *fourfold* structure. How do you think this difference between your systems of thought arose?

GH

Because my ontology in the end is not entirely flat. I want it to be flat in the sense that philosophy should be able to talk about everything. You shouldn't say that there's just physical particles or that there's just language games; you should be able to talk about all the different kinds of things there are. But I found it necessary to say that there are two different kinds of objects: there are some kinds of objects that are absolutely required to be the correlate of something. So an imaginary thing I invent is there for me, it's a correlate of my thinking. When I sleep or die, it's gone. Whereas there are also certain things that are independent of me, and can act on other things without my mediation.

I was going to ask Tristan another question, if I can.

We have an interesting exchange coming out in the journal

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Parrhesia in Australia.¹⁴ This is an open access journal, so the article can be read for free by anyone with an internet connection. It'll be out any day now.

In it, Tristan makes some very good points about our similarities and differences. And one of the really interesting ones is that he points out that both of us agree on an infinite regress downward: there's no smallest particle, the world is infinitely decomposable (which is not a typical position people have, but we both believe this). Then on the other hand there's a limit when you go upwards. Which is a similarity, but it's also a difference, I would say. Because for Tristan the biggest thing of all, the one that comprehends everything is the universe. For me, there is no universe. For me, the top is ragged: you have all these disconnected things that simply haven't engaged in a relation yet. So my question is: how can you justify the existence of a universe, unless you either stipulate that humans have the power to name it and thereby create it, or say that it's a physical reality that we can detect, and therefore there must be all things together in one big physical thing?

TG

Yeah. I'm trying to have a universe because at the same time I have a world. I need a world and a universe. As you remember, the world is the common place where each thing is alone. And the universe is a place where objects are together, one into another. I define the universe as the biggest thing possible. But the universe is still a *thing*. The universe, being the container of all other objects, is a thing. And it means to me that the universe is no more and no less in the world than this table, or half of my finger. Because being a thing means to be equally - no more, no less than something else - in the world.

If the universe is the biggest thing, it's still a thing. That's why it's in the world. By that, first, I mean that I am against any kind of reductionism of universe to the world. For example, a cosmology that would tell us: if you are able to have

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a representation of the universe, you have a representation of the world. I say this is not the same. Because the universe is universal. And universality is always a process - it's a process of identities and differences, where you say: this object is inside of this object, so they have something identical and they have some differences; then you go from one object to another until the biggest object possible, which is the universe. This is universality. And science, cosmology, is trying to represent some kind of universality.

But universality is not totality. And the biggest mistake of, for example, Hegel, is to confound universal and total; saying what is universal is the totality, and the totality is universal. But on the contrary, I'm trying to make a very disjunction between universality and totality; because totality is just the container of each thing. Not of all things, but of each thing alone.

To get the world is very simple: you just need to have *one* thing. If you are able to abstract every kind of determination from an object and to consider that this object is something, then you have the world. Because if you have something, you know that this something is in the world. And the world is always a dead-end street to me. If you enter the object, then there's a kind of abstraction by which you try to aim at the *thing*, at the object as just being something. And when you find that this is something, you just find that being something, it's in the world. But the world is not something, so it's a dead end. The thing is in the world and the world is not in something. You have to go backwards to gain determination once again, and to say: this is an object. But then every object is in the world, is a dead-end or a one-way street you can go into and find the world once again.

The lesson should be that we can have the world with each thing. But to have the universe, you need universality, and universality is a process. If I need the universe it's because I'm still a universalist. Meaning: for me, objects within each other are not, for example, in pluriverses, or in different parallel universes. Objects within each other are in the end in the biggest thing possible, meaning the universe.

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And I would be a limited materialist. I just believe that what I call the universe is the cosmos, is the material universe. But at the same time, I just mean that the universe is a material universe, while speaking about objects. But at the same time, I believe that each object is something and the universe is something, so the universe is in the world. So I'm not absolutely materialist, because I don't think that the world is something material.

RP

Graham, can you explain why for you, the set of all relations between all things doesn't compose one biggest thing which would be a universe?

GH

Because we can't just stipulate that everything's in relation. I can't just say 'everything in the world is related to everything else' and thereby posit...

TG

Yes, because you have sleeping objects.

GH

That's right. I have what is called sleeping or dormant objects: objects that exist, but are not currently in any relation. I think that is possible, and probably there also are such objects.

RP

Such as?

GH

I always play with examples like the Romney victory coalition. Because it was probably there; it just didn't come into relation with Mitt Romney. But it was probably there. He had a chance. He just didn't actualize that object by linking with it to form a new object - Romney the winner. All such examples are open to challenge, but I think it's at least possible that there are objects out there that are simply never activated,

never actualized by anything.

TG

But what is interesting is that you have sleeping objects, but not possible worlds. Because most of the time, thinkers (I'm thinking, for example, about David Lewis' *On the Plurality of Worlds*) say: okay, Mitt Romney could have won, in another world, in another possible world. They say: from each possible object, you can build a possible world. And you're not saying that, you just say: this is a sleeping object. But it doesn't belong to another possible world.

GH

It's this one, it's simply never actualized.

TG

Yes.

GH

So possible worlds are in a way contained in this one, in the form of actualities that are not expressed. That's right. I hadn't thought of it that way.

RP

Graham, in your opening statement you posed a challenge to Tristan, namely that he's confronted with some sort of hypersensitivity in his model of objects. Can you explain once again; and then Tristan can respond.

GH

For me, the virtue of the in-itself is that you have a thing that is not reducible in either direction. It's not an aggregate of its component parts and it's not simply the sum total of the effects it has on other things, as in Latour's philosophy. It's in between those two. I don't think it's the difference between those two. Because if you say it's the difference between those two, that's like saying x is the difference between numbers y and z . So if you vary y and z , of course x is going to change

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wildly whenever you vary y or z . And I'm worried about that. Because this means that the thing, instead of being resistant to changes in both directions is hypersensitive. Now, I understand his reasons for rejecting the thing in itself. And I don't think he's bothered by the idea that a thing changes every time its two directions change because for him, things change every time there are small changes in them anyway.

TG

I would agree: each thing is something different. To me, if you change anything in this table, it's something else. But it's not another *object*; it's some thing else. And even if you do not change anything from this table, the simple fact that this is... $A = A$ for example, logical equality, means to me that the first A is something, but the second A is something else. And the equality (=) between A and A is another thing. And ' $A =$ ' is something else. And ' $= A$ ' is something else and so on and so on.

GH

And yet I heard you say earlier tonight that for example the Tristan Garcia before and after the publication of *Forme et objet* is in some sense the same person.

TG

Yes.

GH

Okay, so what's the mechanism that allows it to be the same person?

TG

First, I need to think this totally flat ontology where anything, absolutely anything can equally be something, and then I need to rebuild identities. Because what I want first are entities *without* any identity. And then I need to recover some identity. But I claim that identity is just a concern of objects, not of things. Because things have no identity, for me.

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If objects have identities, they have, to my opinion, two kinds of identity. The first kind of identity is an extensive one. It's the fact for something, being an object, to be in another object. This *extensive* identity is the fact, for example, to belong to a class of objects.

Then, you have a second kind of identity (which is far more interesting), which is *intensive* identity. It's for an object to relate not to another object, but to itself. But, as we've seen, nothing can be in-itself. Which means: if something is related to itself, it's no more itself. So by *intensive* relation I mean that an object in relation to itself can just be more or less what it is. But it cannot be what it is.

And then - that's why I have a theory of time and of identity through time, for example - if there is some kind of becoming of objects, it's because in fact, there's a close link between identity and intensity. A lot of thinkers, of French thinkers, like Gilles Deleuze, thought: intensity is pure difference. Bergson discovered the link between intensity and difference. Then Deleuze claims in *Difference and Repetition*: intensity is pure difference.

And I say: no, intensity is not pure difference; it's minimal identity. To be intense is for an object to be more or less itself. And this minimal identity exists for example in time. If I'm trying to have a theory of time, it's because I need to get a concept of intensities of presence and of their variations.

RP

I think we're almost out of time. Is that correct? One last question, about literature. Now, Tristan, you've written a series of novels which have been very well received; Graham, you've performed literary experiments with mythology in *Circus Philosophicus*, but your philosophical prose, too, is often praised as sparkling and vivid. What is the relation between literary and philosophical activity for both of you?

GH

Would you like to go first?

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TG

I always feared to become something like Sartre: writing some literary philosophy and some philosophical literature. When I'm writing a novel, in spite of myself, I sometimes to destroy my own system as a philosopher. For example, I wrote a book about the theory of animal rights. And then I wrote a novel about animals; about monkeys and apes. And I the more I think about it, the more I think that my novel expresses exactly the opposite of my theory. But this is the only way I found to be not some kind of... I think that if you don't want to win on each side, you have to learn to lose on each side. You have to know how to be your best enemy. As a writer, to be the enemy of what you are as a thinker. And as a thinker, to be the enemy of what you are as a writer. I'm trying to do something like that, in fact.

RP

Graham?

GH

I think it's important to write well. In fact, 'when in doubt, write well' is the principle that philosophers should follow. What do I mean by that? Sometimes there's too much of an emphasis on clear writing. Now clear writing is better than unclear writing - but at the risk of offending any analytic philosophers in the audience, I think one of the problems of analytic philosophy is its over-emphasis on clarity in writing as opposed to vividness in writing. There are plenty of clear writers in analytic philosophy; there aren't too many vivid writers. There are a handful, I think.

What does vividness mean? It means you're not always clear. It means you're clear when the things are clear and you're not clear when the things are not clear. What if Italian Renaissance painting had tried to never use shadow? If there'd never been *chiaroscuro*? It would be absurd. It would not be better painting.

At times, reality is something you have to hint at. And you need to do that metaphorically, you need to do that mytho-

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logically sometimes. Plato's cave myth is far more powerful than any set of propositions that Plato could've translated it into, right? 'What Plato is trying to say is that all A's are B, or.' You'd ruin the myth then. The myth is a lot more powerful in the form that it's in. So I think it's very important that philosophy have a strong component of literary style to it. And we've seen too little of that.

RP

Well. This debate is at an end now, but we will see the debate continue - in vivid literary style - in journals and books over the next few years. Thank you both very much for being here. And everyone, enjoy the rest of the evening. I think there's music starting now. So please give a warm hand to these two philosophers.

[*applause*]

Review Essay

Conceptual Analyses from a Grothendieckian Perspective

Reflections on *Synthetic Philosophy of Contemporary Mathematics*

by

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Translated from Spanish (2009) by Z. L. Fraser,
Falmouth and New York: Urbanomic/Sequence Press, 2012.

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*Translated by Fabio Gironi*²

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- 1 This text was written during the author's visit in Nantes, hosted by the stimulating interdisciplinary environment of the Institut d'Etudes Avancées (<http://www.iea-nantes.fr/>), and it is dedicated to Alexander Grothendieck, whose death occurred during the preparation of its last draft.
 - 2 The translator would like to thank Robin Mackay for his precious and generous help in revising this translation.

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Introduction

ZALAMEA'S BOOK IS AS ORIGINAL as it is *belated*. It is indeed surprising, if we give it a moment's thought, just how greatly behind schedule philosophical reflection on contemporary mathematics lags, especially considering the momentous changes that took place in the second half of the twentieth century. Zalamea compares this situation with that of the philosophy of physics: he mentions D'Espagnat's work on quantum mechanics, but we could add several others who, in the last few decades, have elaborated an extremely timely philosophy of contemporary physics (see for example Bitbol 2000; Bitbol et al. 2009). As was the case in biology, philosophy - since Kant's crucial observations in the *Critique of Judgment*, at least - has often "run ahead" of life sciences, exploring and opening up a space for reflections that are not derived from or integrated with its contemporary scientific practice. Some of these reflections are still very much auspicious today. And indeed, some philosophers today are saying something truly new about biology.

Often Zalamea points the finger at the hegemony of analytic philosophy - and the associated "linguistic turn" - and the associated foundationalist projects in mathematics, highlighting the limits of a thought that, by and large, remains stuck to Hilbert's program (1900-1920) and Gödel's theorem (1931) - respectively an extremely important program and an equally important (negative) result, certainly. However, we should do well to consider that something important happened in the decades that followed, both in mathematics and in the correlations between the foundations of mathematics and physics, topics to which Zalamea dedicates several pages of his book. The conceptual and technical frames invented by Grothendieck are a fundamental part of these novelties.

At this juncture, I would like to introduce a first personal consideration: for far too long philosophical reflection on

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mathematics has, with only rare exceptions,³ remained within the limits of the debate going “From Frege to Gödel” (as per the title of a classic collection) a debate at best reaching the statement of Gödel’s theorem, or indeed a simplified reduction of it which deprives it of its meaning. The meaning of a theorem is also (but not only) to be found in its proof, but in the case of Gödel’s, it is found only by looking closely to its proof (see Longo 2010). Thus, with a limited range of references going from Euclid to, at best, the statement of Gödel’s theorem, passing through Frege and Hilbert (often skimming over a great deal- Riemann and Poincaré being cases in point), for far too long we have debated ontologies and formalisms, thus moving, as Enriques had already foreseen in 1935, between the Scylla of ontologism and the Charybdis of formalism, a kind of new scholasticism.⁴ I think, for example, that even within Logic, the beautiful results of Normalization in Impredicative Type Theory (see Girard, 1971, Girard et al. 1989), and of concrete Arithmetical incompleteness, as in the Kruskal-Friedman Theorem (see Harrington and Simpson 1985) – which allow for a breakout from this scholasticism (see Longo 2011) – or indeed the more recent progress in Set Theory, have not yet received a sufficient and properly philosophical attention.

Zalamea’s book is thematically vast. It is truly astounding to behold the rich range of mathematical themes that are touched upon, arguably including all of the most important objects of contemporary exploration. I can only single out a few of them, in an attempt to hint here to an “epistemology of new interfaces”, and to emphasize, for my own account,

3 Among these exceptions, an excellent collection is Mancosu 2008.

4 “If we refuse to look for the object of logic in the operations of thought we open the door to this “ontology” which scientific philosophy must to fight as the greatest nonsense. ... On the other hand, guarding oneself from the Scylla of ontologism, one falls into the Charybdis of nominalism: how could an empty and tautological system of signs satisfy our scientific reason?” ... “On both sides I see emerging the spectre of a new scholastics”. F. Enriques, ‘Philosophie Scientifique’, Actes du Congrès International de Philosophie Scientifique, Paris, 1935, vol. I-VII.

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the timeliness and epistemological relevance of the triadic relation mathematics-physics-biology which, obviously, is not the theme of this book.

Modes of Conceptualization, Categories, and Worldviews

6.5.1 Nowadays we may want to overturn Galileo's phrase: Is the book of mathematics written in a natural language?
(Lochak 2015)

I would like to begin with what Zalamea considers, if I am not misreading his argument, the highest and most revolutionary point reached by post-World War II mathematics: Grothendieck's work. With a daring table (43) - as daring as it is arbitrary, like any such schematization - Zalamea sums up the principal "modes of conceptualization and construction pertaining to contemporary mathematics [...]: arithmetical mixing, geometrization, schematization, structural fluxion and reflexivity". In his text, he gradually develops the meaning of each of these modes, attributing to Grothendieck alone the distinction of having contributed to every one of these forms of mathematical construction.

Before delving deeper into the arguments, and maintaining a rather survey-like approach (an inevitability when trying to sum up a book this rich) I think that I can single out the core node of Zalamea's thought in this statement: 'contemporary mathematics systematically studies deformations of the representations of concepts' (172). In more classical fashion, I would rephrase this by saying that mathematics is, in primis, the analysis of invariants and of the transformations that preserve them (including the analysis of non-preservations, deformations and symmetry breakings). This does not aim to be an exhaustive framing of mathematical construction, but rather the proposal of a different point of view, in opposition to, for example, the set-theoretical analytical one.

I will also try to show how Grothendieck, in particular, went beyond this vision of mathematics inherited from Klein's Erlangen Program and developed by many others (that of

symmetries, invariants, and transformations). Grothendieck proposed notions and structures of an intrinsic mathematical “purity”, free from any contingency requiring proof of invariance, presented in an highly abstract (yet not formal) mode, always rich of mathematical sense, particularly thanks to the analysis of relations with other structures.

Symmetries have clearly laid at the heart of mathematics since well before Klein’s work or before 1931. Indeed we can trace its centrality to Euclid, whose geometry is entirely constructed out of rotations and translations (symmetry groups as invariants and as transformations), through Erlangen Program, Noether’s Theorems (1918) and Weyl’s work between the two World Wars. I would like to highlight, more than Zalamea’s text does, the correlations with the foundations of physics which these last two mathematicians put at the very core of their work - and, in Weyl’s case, of his philosophical thought (see Weyl 1932; 1949; 1952; 1987).

Weyl’s work profoundly marked the period examined by Zalamea, moving within a framework which we could legitimately define as that of Category Theory, with frequent mention, for example, of Topos Theory. Mac Lane, one of the founders, along with Eilenberg, of this theory, had spent a year in Göttingen in the early 1930s, in close contact with Weyl, the great “geometer” (and mathematician, and physicist...). Category Theory, considering the role it plays in the analysis of invariants and their transformations, is indeed a profoundly geometrical theory, so much so that it led, in Grothendieck and Lawvere, to the geometrization of logic, a topic I shall consider later (see Johnstone 1982; Mac Lane and Moerdijk 1992). I should also mention (again echoing Zalamea but with an even stronger emphasis) the role of physical theory in mathematical invention, with particular reference to Connes. But we cannot do everything, and I - not being a geometer, and thus unable to adjudicate on many of Zalamea’s conceptual and technical analyses - shall attempt to read the text though my contemporary lens, shaped by several years of cooperation with physicists and biologists on the interface between the foundations of these disciplines

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(see Bailly and Longo 2011; Longo and Montévil 2014).

I am no geometer and Zalamea's text, one could say, is dominated by geometrical work, if intended in an extremely broad and modern sense. It is partially this central role assigned to geometry that motivates Zalamea's vigorous polemic against analytic philosophy. The latter has done nothing but increase its focus on linguistic play and logico-formal axiomatics, without any programmatic relationship with space and the constructions of physics; without paying attention to the constitution of mathematics in the world, and to the interface between ourselves and the world described by physics. Frege and Hilbert, in different ways, both programmatically wanted to avoid founding mathematics in relation to the 'delirium' (Frege 1884) or to the challenges of meaning of non-euclidean geometry and physical (lived and intuited) space (Hilbert 1901). And they did so for very good reasons. In order to give certainty to mathematics, it was necessary to keep in check

1. The dramatic break between the common-sense intuition of space and a physics in which "all that happens are continuous changes in the curvature of space" (Clifford, referring to Reimann 1854).

2. The unpredictability of dynamical systems (Poincaré 1892): a result of undecidability of future state of affairs for non-linear deterministic systems - that is, for formalizable systems of equations - at the interface between mathematics and physics (see Longo 2010). It was considered necessary to make sure that, at least in pure mathematics, every well-formalized statement could be decided (Hilbert). This is by principle far, therefore, from the undecidability and chaos that systems of non-linear equations had already started to reveal in the context of physical dynamics.

3. The new and bewildering role played by measurement in physics, where (classical) approximation or (quantum)

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non-commutativity had introduced unpredictability (Poincaré) and indetermination (Plank) in the interface between physics and mathematics.

The exactitude of the whole number, a “logical and absolute” concept (Frege) and its theory – Arithmetic – were supposed to guarantee “unshakable certainties” (Hilbert), thanks to the demonstrable coherence and to the formal decidability of pure mathematics: a far cry from the protean, approximate, unpredictable, and indeterminate world of physics. And so it happened that a century of debates on foundations remained trapped (and for good reasons) between programmatically meaningless formalisms and Platonist ontologies attempting to deliver a meaning from outside the world; outside, that is, of the difficult analysis of conceptual construction, the latter being the real bearer of meaning. It is precisely this latter kind of project that lies at the heart of Zalamea’s philosophical work.

From physics, Zalamea borrows a methodological question: “the great paradigm of Grothendieck’s work, with its profound conception of a relative mathematics [140-141] interspersed with changes of base of every sort in very general topoi [141-142], should be fully understood as an ‘Einsteinian turn’ in mathematics” (270). And so Einstein’s Invariantentheorie (as he preferred to call it) thoroughly becomes part of the method of this analysis of mathematical construction, broadly based on invariants and the transformations that preserve them.

It is clear then why this approach assigns a central role to the notion of the Category. This is not a Newtonian universe anymore, a unique and absolute framework, the Universe of Sets, with an absolute origin of time and space (the empty set). It is rather the realm of a plurality of Categories and of an analysis of transformations, functors, and natural transformations that allow their correlation (preserving what is interesting to preserve). Among them, the Category of Sets is surely one of the most interesting, but just one of many. We are presented with an open universe of categories, then, to which new categories are constantly added; new invariants,

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and new transformations. Concepts are created by being correlating with existent ones, and by deforming one into the other, thus enriching them, paying attention to the meaning (the mathematical meaning, at least) of what is being done.

Thus Zalamea also retrieves an operational relation with the supposed delirium or disorder we referred to at the interface of geometry with physics : “Advanced mathematics are, by contrast [to the elementary mathematics analyzed in most philosophical reflections], essentially dynamic, open, unstable, ‘chaotic’ [...] the ‘geometry’ of mathematical creativity is replete with unpredictable singularities and vortices” (39). Yet there is an order, a dynamical organization to all this since, as Lautman puts it, we continuously reconstruct “a hierarchization of mathematical geneses [...] a structural explanation of mathematics’ applicability to the sensible universe” (58). And this, in particular, is possible thanks to structural dualities at the heart of any attempt to organize the world, like those between “local/global, whole/part, extrinsic/intrinsic, continuous/discrete, etc.”, as Zalamea, writes, again quoting Lautman (64). Indeed, “Lautman intuits a mathematics of structural relations beyond a mathematics of objects - which is to say, he prefigures the path of category theory” (68), which was indeed born just a few years after his death.

The conceptual node that must be added to the analysis of proof, which was the dominant preoccupation of foundational projects in twentieth-century mathematics, is that of the analysis of the constitution of concepts and structures (where these latter are seen as an additional organization of mathematical concepts).⁵ This is what Zalamea aims at:

5 Proof theory is an extremely important and elegant branch of mathematics (and by working with its varieties (with and without Types), its “categorical semantics” and its applications I have managed to earn a living for most of my life). However, in philosophy, to omit this or that pillar of foundational analysis is a typically analytic limit. Corfield (2003) and Mancosu (2008) have worked to overcome this limit and to avoid both the Scylla and the Charybdis I mentioned above, by referring to “Mathematical Practice” (or “Real Mathematics”), as if there were a mathematics which is not a very real praxis: a way to underline the delay of philosophical reflection on contemporary mathematics, something

for him, Lautman and Cavailles are frequent points of reference, two philosophers utterly forgotten by logico-linguistic approaches to mathematics (yet enjoying a more flattering oblivion than Poincaré and Weyl, who have been subject to offensive caricature as, for example, half-hearted Brouwers or semi-intuitionists).

I omit several passages and citations from the opening chapters of the book, where I find myself somewhat perplexed by what seems to me the excessive space dedicated to those, like Badiou and Maddy, who place the category of Sets in the usual role of absolute, Newtonian universe – albeit (in Badiou’s case) with some dynamical inflection. Badiou, for example, in a recent seminar at the École Normale Supérieure (Paris) has explained – referring uniquely to the (original) statement of the Yoneda Lemma – that every (locally small) category is reducible to (embeddable in) the Universe of Sets (Set), modulo a Topos of presheaves (on Set). This would definitely prove the absolute role of Set for mathematics. Now, the proof of the Lemma yields a more general result. The functional embedding just described is possible within every Topos considered as a Universe in which one sees the given (locally small) category as an object: the embedding is then possible towards the presheaves on any Topos.⁶ Therefore, by this construction, every Topos (typically a pre-sheaves category, but I shall come back to this) can play an analogous ‘relativizing’ role, without for all that becoming an indispensable absolute.⁷

that Zalamea does more explicitly. Among the interesting analyses of the contemporary mathematical work that these volumes present, I want to single out the articles by McLarty on the notion of “scheme” (a topological space with a sheaf of rings or more), and of Urquhart on mathematical inventiveness in physics, often non-rigorous or presenting an original informal rigour, a co-constitution of sense and therefore, gradually, of new mathematical structures (see Mancosu 2008).

6 One of the few required properties is the “locally small” hypothesis: every collection of morphisms $\text{Hom}(A,B)$, must be a set (see Mac Lane and Moerdijk 1992). Once more, a close look at the assumptions and the proof (its right level of generality, in this case) is essential for the understanding of a theorem.

7 Many (all?) categorial objects can be codified as sets, even Set, the para-

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Similarly, Maddy identifies mathematical practice with the work done upon a structureless set theory and identifies, in this non-structured assembling of points and elements, the cognitive foundations of mathematics. These approaches are in explicit contrast with the key ideas of Zalamea's book which, centered upon categorical universes of geometrical inspiration, attempts to make us appreciate the structural sense of mathematical construction.

Luckily, soon afterwards, a reference to Châtelet enlightens us with a much different insight. References (perhaps too cursory) to that masterpiece that is Châtelet 1993, bring our attention back to the "gesture" constitutive of mathematical objectivity, which lies "on the border of the virtual and the actual", in a tight interrelation between the construction of objects of study and objectivity in physics and the analysis of the organizational structures of the world, starting with symmetries. Châtelet's book, it should be emphasized, is also an history; rather, it is a historico-rational reconstruction of the rich entanglement between physics and mathematics running through the 1800s up to, and stopping short of, the advent of Set Theory. Regarding some related aspects of contemporary mathematics, Patras 2001 (a book that Zalamea cursorily mentions), has retrieved the point of view of "structural mathematics" with a philosophical competence rare to find in a mathematician. Patras exhibits the weaving together of structures and transformations that governs mathematical construction from the inside, from the point of view of mathematical practice and invention.

In general, the origin of meaning in mathematics is to be found in the ways in which it allows us to organize, to struc-

doxical "set of all sets". In every such occasion an ad hoc construction or codification is necessary, and in such a case, we pay the price of "stretching" the sets, up to cardinals as "inaccessible" (Kanamori 2003) as they are far from the construction one wants to interpret. These are codifications that push the meaning of categorial structures out of sight. The point, indeed, is not the possibility of a coding, perhaps a meaningless one: it is rather the relativizing -- and geometrical - diagrammatical knowing proper of categories, which is "sensitive to coding", as we might put it, that makes all the difference.

ture, the world. Only then does it detach itself from the world in the autonomy of constitutive gestures, between the virtual and the actual where, at a farther remove from the original constitution of meaning, one obtains relevant results at the intersection between constructions of diverse origin. From classic algebraic geometry and differential geometry, two very productive blends, to sheaf-cohomology and cohomology-sheaves, between complex analysis and algebra (179), where, as Serre puts it, “such problems are not group theory, nor topology, nor number theory: they are just mathematics”. Structural continuity becomes conceptual continuity, a navigation between concepts as a “sophisticated technical transits over a continuous conceptual ground”.

In brief, the study of structures, of their continuous enchainements and deformations, is an essential component of foundational analysis; without it one can at best hope to do Set Theory.⁸ The latter is an extremely interesting theory and category: the error is to make an absolute out of it and to posit sets of meaningless points at the root of every mathematical construction, in what amounts to a ruinous disintegration of sense. The origin of mathematics and its principle of construction are located in that which is meaningful, in thought operations that structure and organize the world, but which then go to intersect on planes far removed from the world and acquire by these conceptual interactions a proper mathematical sense.

Thus Zalamea cites the “Langlands Program”. Langlands dared to write to the more famous André Weil proposing an “extensive web of conjectures by which number theory, algebra, and analysis are interrelated in a precise manner, eliminating the official divisions between the subdisciplines”, and suggesting that one “approach the world of the complex variable and the world of algebraic extensions functorially, by way of

8 Consider that the axioms of Set Theory, essentially created in order to adjudicate the validity of principles of “well-ordering” and “choice”, are silent on them: a failure for a whole program. A refined analysis has been conducted, in structured environments wherein these constructions can be relativized, by Blass (1983).

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group actions". This will indicate an "unexpected equivalence between certain differentiable structures associated with an extended modularity (the automorphic forms associated with the linear group) and certain arithmetical structures associated with analytic continuations (the L-representations of the Galois group)" (180-182). Here we see groups again, and thus transformations and symmetries, both technical and conceptual, which allow for this splendid structural unity which lies at the heart of mathematics: in a certain sense, Langlands program extends Erlangen's program to Number Theory. So technical and conceptual invariants get transformed, like the generalized analysis of continuity that underlies the notion of fibration, and the subtle interplay between continuous and discrete, "the founding aporia of mathematics [...] that drives the discipline", as Thom puts it (138).

Zalamea recognizes that "nothing could therefore be further from an understanding of mathematical invention than a philosophical posture that tries to mimic the set-theoretical analytic, and presumes to indulge in such 'antiseptic' procedures as the elimination of the inevitable contradictions of doing mathematics or the reduction of the continuous/discrete dialectic" (183-184). This, I would add, extends all the way to the discrete-computational approaches, flat (or better: unidimensional) visions of the world, according to which the Universe (Wolfram and others), the brain (too many to mention), or DNA (Monod, Jacob, Crick...) would be a (large, medium or small) Turing Machine (see Longo 2009, 2012). The great invention of Gödel, Turing and others in the 1930s, the theory of logical-formal - computability, instantiated in machines that today are changing our world, is projected by these stances to the world and identified with it, even while it was originally developed, within (Frege and) Hilbert's logical systems, thus to explicitly distinguish itself from the world. Nowadays these approaches are not so counterproductive in physics, where they are mostly ignored: in biology, instead, such frameworks and methods exclusively grounded on discrete sets of strings of code have profoundly impaired the comprehension of biological phenomena. It is here that I will

introduce a correlation of outlooks, the necessity of which I hope to convince the reader of.

Let us begin with an example. The discrete-computational outlook has not helped us (or has not permitted us) to detect the role of endocrine perturbators of the 80.000 (sic) artificial molecules that we produced in the twentieth century. These were mostly presumed to be innocuous, below arbitrarily imposed individual thresholds, since not stereo-specific (not in exact physico-chemical-geometric correspondence) and thus unable to interfere with molecular-computational cascades, necessarily stereo-specific, going “from DNA to RNA to proteins” (the Central Dogma of molecular biology), and with hormonal pathways. It should be noted, indeed, that exact molecular stereo-specificity was deduced, against experimental evidence that were already available (since 1957, see Elowitz and Levine 2002; Raj and Oudernaaden 2008): it is ‘necessary’, as Monod (1972) puts it, for the transmission of computational information and for the genetic programme to function. Thus, negating the role of context in genetic expression and hormonal control, the consequences (direct and indirect) of the finite combinations of said 80.000 molecules on the organism and on the chemical ecosystem of the living have receded from view. Cancer incidence has grown in the last half century, across all age groups, jointly to the halving (sic) of the average density of human spermatozoa in Western countries (Diamanti-Kandarakis et al. 2009; Soto and Sonnenschein 1999, 2010). As for cancer, the failure of the fifty years old, DNA centered, molecular approach has been recently acknowledged even by one of its founding fathers, Weinberg (2014).

In contrast with the claims of the informational analyses, macromolecular interactions – even within the cell, where the macromolecules in Brownian motion have quasi-chaotic enthalpic oscillation – are stochastic, and are given as probabilities, and these probabilities depend upon the context; a strongly influential context, made of interactions, deformations, morphogenetic fields, biological networks and structures, and so on (see Elowitz and Levine 2002; Noble 2006, among others).

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See also Longo and Montévil 2014). A context, then, made of ecosystemic structures and their transformations, very different from the fragmentation of the analysis of organisms as sets of molecules promoted by the still-dominant Laplacean reconstruction (a linear one, molecule after molecule, a “cartesian mechanisms” says Monod).

The discourse on the foundations of mathematics has played an enormous scientific, suggestive and metaphorical role in these events: the absolute certainty of the arithmetical discrete/finite, decidable (and thus programmable) has produced, on the one hand, original and powerful machines, perfectly artificial instruments for formal calculus allowing the “networking” of the world, while on the other it has contaminated our worldview – even though, originally, it had been lucidly and courageously originally proposed, by Frege and Hilbert, in order to detach those foundations from the world.

Logics, Topos, and Symmetries. In Brief.

Returning to less dramatic topics, another author Zalamea often refers to is Lawvere. The latter transferred Grothendieck’s notions into an original analysis of Logic, grasping how Topos Theory and, more generally, Category Theory presents “a permanent back-and-forth between the three basic dimensions of the semiotic, emphasizing translations and pragmatic correlations (functorial comparisons, adjunctions) over both semantic aspects (canonical classes of models) and syntactic ones (orderings of types)” (191). Going back to my first scientific life, I remember the interest around the categorical interpretation of Type Theory, which owes much to many brilliant mathematicians who Zalamea has no space to mention (but who are cited in Longo 1988; Asperti and Longo 1991). A wonderful community, where a logical sensibility – and I am thinking of the challenge offered by Girard’s Impredicative Theories of Types – found in categorical semantics a strong link to the mathematics of structures that concerns Zalamea. The crucial point is the “geometrization” of logic and its “relativization” to Topoi

that can have different internal logics, properly correlated by functors and natural transformations.

In these circles, Fregean quantifiers, for example, are interpreted in terms of adjunctions. More precisely, existential and universal quantifiers become right and left adjoints to a sort of diagonal functor: the pullback along a projection. Then the existential quantifier is interpreted as the projection in a product of objects in well-defined Topoi, and the universal quantifier is its dual, modulo an adjunction. So the level of “effectivity” of the existential quantifier (the possibility of “effectively constructing” the mathematical object whose existence is predicated), a delicate issue that has been the object of a century-long debate, is relativized to the effective nature of morphisms in the intended Topos as a (relative) Universe – that is, to its “internal logic”. The meaning of logico-formal construction, then, is given by a reflexive interplay of invariances and symmetries (the duality present in an adjunction) without the need for an understanding of “for every” as meaning for every, or that “exists” really means exists – just as, for far too long, we have been told that “snow is white” is true just when snow is white, a truly remarkable mathematical discovery. When the “geometric” meaning of an adjunction is known, qua profound and omnipervasive construct of Category Theory, the meaning and the relation between the quantifiers is enriched with a new structural significance through the construction described above. That is, they become immersed in a geometric context, a universe of dynamic and modifiable structures. In particular, it becomes possible to go from one logic to another, from one Topos to another, studying their invariants and transformations, that is, the functorial immersions and the adjunctions correlating them. For this reason I often say, in provocative manner, that I am happy to leave the question of truth to priests and analytic philosophers: we operate constructions of sense, we organize the world by proposing and correlating structures that have a meaning because of our being world-bound active humans in different conceptual worlds which we strive to put into dialogue. Let us not confuse this with the fact that

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the judge seeks, in witnesses for example, the “truth”: science is not a testimony of, but an action upon the world, aimed at organizing it and giving meaning to it.

I will return shortly to this extremely timely geometrization of Logic, a “royal way out” of the narrow singlemindedness of the logico-linguistic turn. In this regard, Zalamea quotes Girard who, within Proof Theory, has subsumed the same structural sensibility, the same distance from Tarskian truth and its ontological flavours. I remember when I first attended, in the 1980s, a talk by Girard on Linear Logic; I asked him why, after having radically modified the “structural” rules of logics, changing their symmetries in formal notation, he had introduced a certain inference rule. He replied: for reasons of symmetry.⁹ Symmetries are at the core of the close relationship between physics and mathematics, ever since Archimedes asked himself: why doesn't a scale with equal weights on both sides move? And answered: For reasons of symmetry. Guided by the same symmetry reasons, Sacharov and Feynman proposed anti-matter, thus giving a meaning - faced with experimental phenomena in need of explanation - to the negative solution of Dirac's electron equation. Alas, unfortunately (or fortunately?) cellular reproduction is at the heart of ontogenesis and phylogenesis, also because it is asymmetrical.

More on Invariance and Symmetries, in Mathematics and the Natural Sciences

1-Between mathematics and physics: Symmetries, Gestures, and Measures.

I have been too critical, much more than Zalamea is, of Set Theory as a foundational discipline, since there is one

⁹ Symmetry principles - or more precisely principles of “inversion” - were already present in Grentzen's sequent calculus, to which Girard explicitly refers to. They permit the “generation” of a calculus starting with logical connectives, and to finely analyze the properties of proof-theoretic normalization (see Negri and von Plato 2001).

concept about which it has been the field of a rigorous and useful foundational analysis: the question of the infinite.¹⁰ This is a crucial concept in mathematics. All mathematics is construction to the limit, starting with the line with no thickness of Greek geometry, a limit construction, all the way to the higher constructs I have discussed above. It has come into relation with physics since Galileo's asymptotic principle of inertia. Great merit goes to Shelah, whose work *Zalamea* discusses at great length, for he demonstrated that “the theory of singular cardinals corresponds to the idea of seeking natural algebraic invariants (homotopies, homologies) for topology” (202). From there, we are referred to Serre's work on homotopy, which makes possible an algebraic-topological relativization of the notions of finite and infinite. Once again, it is a relativizing operation, breaking with the absolutes of logicist formalisms, according to which the “finite” is locus of certainty and absoluteness. Likewise, in physics, the “Riemann Sphere”, a bidimensional model of the relativistic universe, is infinite for its surface-bound inhabitant moving towards the poles, whose meter stick progressively contracts; it is finite as observed from an external reference frame.

At the level of groups, however, a discrete combinatorics can be fundamental; indeed, *Zalamea* refers to the Grothendieck-Teichmüller groups, which “may come to govern certain correlations between the universal constants of physics (the speed of light, the Planck constant, the gravitational constant), while, conversely, certain mathematical theories originating in quantum mechanics (non-commutative geometry) may help to resolve difficult problems in arithmetic (the Riemann hypothesis)” (205). As *Zalamea* tells us, here we witness “absolutely unanticipated results, which bring together the most

10 This analysis extends all the way to the recent and daring “anti-Cantorian” explorations of Benci, Di Nasso and Forti (in Blass et al. 2012). According to them, as for Euclid, “the whole is larger than its parts”, even for infinite sets (at least when denumerable: this approach, for the time being, is not extended beyond the denumerable. For this latter domain, we will probably have to look beyond the category of sets, towards other structural invariants).

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abstract mathematical inventions and the most concrete physical universe” (2006).

Through a back-and-forth between mathematics and physics, various intersections far from the world are drawn out, between domains with roots in diverse conceptual constructions, each originating in different organizational actions upon the physical world. It is neither unreasonable nor surprising that the locus of conceptual invariance and of the analysis of its transformations - mathematics - should influence theoretical physics. Beyond the strict relation mentioned above between mathematical symmetries and conservation principles in physics (Noether, Weyl), the physicist’s theoretical work begins from the invention of appropriate, and very abstract, mathematical phase-spaces (observables and pertinent parameters) like the spaces of state-function in quantum mechanics or Hilbert spaces; all phase-spaces the physicist uses or builds to analyze (generic) objects and (specific) trajectories, result, in turn, from symmetries and invariances. I will try to sum up here analyses and notions which are central to attempts to differentiate and establish a dialogue between mathematics, physics, and biology (as exposed in Bailly and Longo 2011 and Longo and Montévil 2014).

Mathematics and physics share a common construction insofar as they isolate and draw pertinent objects, perfectly abstract and with pure contours - like Euclid’s lines with no thickness, edges of figures drawn on the veil of phenomenality, at the interface between us and the world. Euclid, indeed, invents the difficult notion of border: his figures are nothing but borders, and thus without thickness - one thinks of Thom’s cobordism (Rudyak 2008). These objects, in mathematics as in physics, are generic, that is interchangeable, symmetrical according to permutations within their definitional domains. A right-angled triangle in Euclid, a Banach space, or a sheaf, are all generic, as are Galileo’s weight, an electron, a photon, and so on. These are generic insofar as they are invariants of theory and of physical experience, symmetrically permutable with any other. So that the same theory can deal with falling apples and planets as generic gravitational objects, just as the

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even more marked theoretical invariance of the theory of relativistic bodies allows us to unify gravitation and inertia. The genericity of objects and of structures, therefore, is the result of a fundamental symmetry/invariance, shared by both mathematics and physics.

Beginning with the genericity of its objects, physics analyzes “trajectories” in a suitable phase-space. The classical one based on momentum and position (or energy and time) is only one among many (thermodynamics, for example, operates within a space defined by pressure \times volume \times temperature, and has added a revolutionary observable: entropy). These trajectories are specific, unique, and are imposed by the geodetic principle in its various instances. Even in quantum mechanics, where the quanta certainly do not follow “trajectories” in space-time, the Hamiltonian allows the derivation of the Schrödinger equation, defining the trajectory of a probability amplitude in Hilbert space. But the Hamiltonian, or the extremization of a Lagrangian functional, follow from a conservation principle – a principle of symmetry – as Noether’s theorems have explained (see Kosmann-Schwarzbach 2004; Bailly and Longo 2011). Here is the extraordinary unity, completely construed or better co-construed, of the physical-mathematical edifice. Here is the power of its intelligibility, utterly human, for we animals characterized by a fundamental bilateral symmetry who, in language and intersubjective practices, organize the world, our arts, and our knowledge in terms of symmetries (see Weyl 1949, 1952, followed by Van Fraassen 1993) and, subsequently, their breaking.

Such unity will be discovered in the symmetry breaking constituted by the non-Euclidean modifications of Euclid’s fifth postulate – which yields the closure of the Euclidean plane under the group of homotheties – a breaking that will allow Einstein to give a mathematical foundation to relativist physics, beginning with the astonishing measurement of the invariance of the speed of light. Likewise, in Connes’ non-commutative geometry, which includes physical measure in the foundations of his approach: Heisenberg’s matrix algebras, from which it derives in analogy with Gelfand’s construction,

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are built starting with the non-commutable nature of quantum measurement. In a striking difference from arithmetical foundations, geometry, the privileged locus of invariance and transformations, has always had an origin in a constructive relationship of “access” to space and its processes: from the Greek compass and straightedge to Riemann’s rigid body, to the algebras derived from Connes’s quantum measurement, yet another bridge between mathematics and the universe of physics.

To sum up, a fundamental component of the unity we have delineated between mathematics and the theorization of the inert is this central role assigned to the genericity of objects and the specificity of their trajectories, both being definable in terms of symmetries. To this we should add an active relation to the world, grounded on both the constitutive gesture of the continuous line, of the trajectory - a movement at the origin of the phenomonic continuum - and on the access to the world as mediated by measurement: classic, relativistic, and quantum. Following Zalamea, I will return, in what follows, to some contemporary consequences of these considerations (which sum up ideas extensively developed in Bailly and Longo 2011 and in Longo and Montévil 2014, and are directed towards a discussion of biology).

2- What About Biology?

What can we say about the theorization of the living? The only great biological theory, Darwin’s, was born by positing some principles: of which the first in particular, “descent with modification” (indispensable for the second, “selection”), stands in stark contrast to those conservation principles (symmetries) which, starting with Galileo’s inertia and the geodetic principle (think of Hamilton’s variational method, contemporary to Darwin), were taking center stage in physics. “Descent with modification” is a principle of non-conservation of the phenotype, of organisms, of species and of all the observables of Evolutionary Theory. The morphogenetic iteration in the living, in particular reproduction

as conservation by inheritance, is never identical to itself, and this must be taken as a fundamental principle, together with Darwin's, of the intelligibility of ontogenesis (see Longo et al. 2014).

We are working towards an understanding of onto-phylogenetic trajectories as “cascades of symmetry change”, a kind of “extended critical transitions” (see below), borrowing a method from physics: a mathematical construction of objectivity, yet with dual principles. Critical transitions capture the continuity of change that is proper to reproduction. The challenge is to unify ontogenesis and phylogenesis, on the basis of the same, or similar, principles (see Longo et al. 2014), thus towards a “theory of organism” and therefore of ontogenesis, avoiding the prescientific metaphors of an Aristotelian homunculus codified in the DNA (even when the defenders of such “theories” dress their ideas in modern garments: the homunculus is in a machine code and the DNA contains both the program and the operating system [Danchin 2009]).

The problem is that biological trajectories, cascades of changes of symmetry in constant interaction with the ecosystem, must be considered as generic: they are “possible” trajectories among the many which are compatible with the ecosystem – the limbs of an elephant, of a kangaroo, of a whale (its vestigial forms) are so many possible evolutions originating from a same tetrapod vertebrate. What's particularly hard to grasp is that they are *possibilia* in phase-spaces (to use a physics jargon), not pre-given but rather co-constituted with trajectories: so an organism, in phylogenesis as well as in ontogenesis, co-constructs its ecosystem: consider how, two to three billion years ago, bacteria created oxygen, beginning with a primitive atmosphere which contained none or in negligible amounts. And so the pertinent observables – that is, the phenotypes – are modified up to speciation. The result of this evolutionary trajectory is an historical and individuated object, a specific organism, the result of a contingent cascade of change of symmetry (qua changes of the coherence between organism and ecosystem) channeled by

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massive historical “constraints”. One of the most important of which is the DNA: the imposing chemical trace of an history, continuously employed by the organism throughout the course of ontogenesis.

To sum up: biological trajectories are generic, while their objects are specific – a radical duality, as opposed to the physical-mathematical realm, where we pointed out the genericity of the objects and the specificity of the trajectories. Such duality profoundly modifies the role – so rich in physics – of symmetries, invariances and transformation. To the impenitent reductionist, hellbent on an abstract physics (and not the physics of the historically-situated theories) to which everything must be reduced, we respond (see the introduction of Longo and Montévil 2014) with a recommendation, for example, to try to “reduce” the classical domain to the quantum one, or the hydrodynamics of incompressible fluids in a continuum to quantum mechanical principles, if she can – after all, there are both classical and quantum dynamics (and plenty of water) at play within a cell. The unity of knowledge and of its scientific instruments, starting with unity in physics, is a hard-won conquest – as in the case of quantum and relativistic physics – and not a theoretical a priori.

I mention these problems both because they are my current interests and because the construction of objects and structures in mathematics has proceeded in lockstep with a prodigious construction of objectivity in physics, simultaneously locating in the richness of language and of historically located human gestures an autonomy that pushed it steadily away from physical experience (where is Euclid’s thickless line to be found? Where is a Grothendieck pre-sheaf located?). And yet, considering the analogous approach in physics and mathematics to “objects” and “trajectories”, this was a process of constitution capable of falling back again upon physics, through unexpected avenues: think of the marvelous story of Cardano’s imaginary numbers, having an highly abstract algebraic origin and yet being today essential to talk about microphysics (yet Argand’s and Gauss’s interpretation allows us to discern a possible role for them in the description of

wave amplitudes and their trajectories: before falling back upon the world, they became a rich geometric structure).

This parallel construction of objects and concepts does not merely concern the interaction of physics and mathematics. Indeed, even in the ambit of proof, mathematics does not proceed by way of demonstrations of already-given formulae – as the formalist caricature would have it – and physics does not construct theories as summations of experiences and facts. Neither proofs nor theories are “already there”, not even in the most dynamical and weakly-Platonic sense. The construction of sense plays a powerful role in proof, even arithmetical proof (see Longo 2010, 2011); likewise, physical theory tells us which observables are to be isolated and analyzed, which experiences to have, which phenomena to observe. Mathematics and physics are the result of a laborious effort of knowledge construction, as Weyl has it, through a non-arbitrary friction with the world. Non-arbitrary and effective precisely because rich in history and contingency: mathematics and physics are thus a human praxis in and towards the world, as Peirce – a thinker Zalamea often likes to refer to – would say.

Contemporary biology poses enormous challenges: to face them we would need to combine the imagination of Newton (a Newton of the blade of grass, as Kant has it, without denying the possibility of such a science), with his differential calculus as infinitary construction to understand the movement of the finite; of Hamilton, with the variational method for the geodetic principle; of Dirac, with his delta, for a long time without any mathematical sense; and of Feynman, with his integral, the solution of a still-non-defined equation. The principal invariant in biology (fortunately not the only one) is variability: it allows diversity adaptability, at the heart of the structural stability of the living. What to do with our *invariantentheorien*?

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Groups Everywhere, Metrics Everywhere

Among the omnipresent references to Grothendieck, Zalamea underlines time and again how his work incorporates “a transit between objects (variations, perturbations) so as to then proceed to determine certain partial stabilities (invariants) beneath the transit” (212). As for the invariants, I have often referred, as Zalamea does, to those correlated with symmetries, i.e. group structures. But together with groups (to be interpreted as instruments of action upon spaces, all the way to the most abstract ones due to Grothendieck), a crucial epistemic role should be assigned to semigroup structures. As it is observed in Bailly and Longo 2011, on the one hand we should consider the gnoseological and mathematical complex of {space, group, equivalence relation}, on the other that of {time, semigroup, ordering relation}. In the passage between the two we see a useful instrument to analyze the interplay between space and time in the natural sciences, as well as the difference between physics and biology: oriented/ordered time plays a crucial operatorial role in biology, as we say also in Longo and Montévil 2014, well beyond its role as parameter in physics. In this regard, Zalamea insists on the role of semigroups in the hyperbolic varieties of Lax and Phillips (218). These are collections of operators $Z(t)$, with a parameter that can be interpreted as time, which permit the construction of “the deep connection that lets us unfold the ‘intrinsic meaning’ hidden in differential equations like the non-euclidean wave equation, a meaning that can be glimpsed precisely in virtue of the semigroup $Z(t)$ ” (220).

In this inexhaustible search for unity, not forced towards impossible reductions, but constructed with bridges, correlations, and structural passages, we can “naturally mediate” between “the Poincaré plane, seen as a non-Euclidean model, with its differential Riemannian geometry and analytic invariants, on the one hand; and the same plane, seen as a complex model, with its theory of automorphic functions and arithmetical invariants, on the other” (220). Here we arrive at Connes’s programme for non-commutative geometry, a

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programme for the reconstruction of vast sections of mathematics, grounded on the non-commutativity of quantum measure (and its algebras). The objective of this geometrization of quantum mechanics is to contribute to its intelligibility and, ultimately, to deliver a unification with the relativistic universe, radically changing the theory of space – not a mere “background”, as string theorists claim. Zalamea adroitly sums up several bridging aspects, correlating them with the work of other geometers, starting with the recent developments of Riemannian differential geometry, with particular focus on the passage from infinitesimal manifolds (Riemann) to C^* -algebras of compact operators (Hilbert, von Neumann), the passage from dual K-homology (Atiyah, Brown, Douglas, Filmore) to non-commutative C^* -algebras (Connes), the passage from the index theorem (Atiyah, Singer) to the handling of non-commutative convolutions in groupoids (Connes), the passage from the groups and algebras of modern differential geometry (Lie) to quantum groups and Hopf algebras, the passage from set-theoretic punctuality to the actions of non-commutative monoids in Grothendieck topoi, etc. (224).

There is no doubt in my mind that this allows for a correspondence in fieri between mathematics (as a study of quantities and organized in structures) and the cosmos (as order), as Zalamea argues, legitimately philosophizing from a conjecture of Cartier. But this shouldn't be considered a new Pythagoreanism, in my view: it is we who single out elements of order in the cosmos (those we can and want to see – symmetries for example). As Kontsevich, quoted by Zalamea, has it, in physics we begin with very little: “where one doesn't see structures so much as the symmetry, locality and linearity of observable quantities” (229). We then enlarge these almost Gestaltic elements (symmetries and locality), we generalize them, and we transform them into the language of a metaphysics-rich communicating community. Finally we project them back again upon the cosmos, recognizing it as orderly because intelligible, and intelligible because orderly. This process is legitimate because, in this theoretical back-and-forth, our friction and action upon the world are real:

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the world resists, it says “no”, and channels our epistemic praxis, which is of an eminently organizational character, and it is always active.

Such knowledge construction works because of this cognitive entanglement, beginning with the common genericity (of objects) and specificity (of trajectories), both physical and mathematical: the first brick of an enormous physico-mathematical edifice of our making. No surprise then, a surprise still affecting Kontsevich and Zalamea; we are left with great admiration for such a majestic, but very reasonable, mathematical construction. Similarly, the linguist is not surprised if, when we talk, we understand each other: language was born with dialogue, through the practice of mutual understanding and communication. The linguist surely admires a great poem which, with words, introduces a different worldview or an original intelligibility of humans, without ontological miracles but merely with the strength of the words' meaning, a co-constituted product of our human community. Alongside myths, poems and tragedies - rich in human experience, in human, concrete and lived praxis as well as in metaphysics - we have been able to propose the structures of mathematics with their invariants and transformations, rich in those glances and gestures which organize the real, as well as rich in metaphysical nuance - starting with Euclid's line, a limit notion resulting from a dialogue with the Gods. Mathematics is written in natural language, it is a language and a gaze upon the world, at and from the limit of the world (“mathematics is the science of the infinite” as Weyl [1932] writes).

However, we only see perspectives, albeit coherent and profound ones; points of view on fragments of the world, we organize and make accessible small corners of it. And as soon as that small (but oh so important) brick concerning physico-mathematical genericity and specificity is removed, as happens in the analysis of the living, we find ourselves in trouble. Yet it is nothing unsurmountable: we just have to work on it with the same freedom and secular independence of thought, action, construction and exchange proper of the

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founding fathers of the physico-mathematical, abandoning the ambition of finding the theoretical or mathematical answer “already there”, written by God in the language of already-existing mathematized physics.

Referring to Peirce, Zalamea too highlights the progressive constituting of knowledge of the world:

we see how the ‘world’ consists in a series of data/structures (Peircean firstness), registers/models (Peircean secondness) and transits/functors (Peircean thirdness), whose progressive interlacing into a web not only allows us to better understand the world, but which constitutes it in its very emergence. (237)

The important thing is to break out, even in foundational analysis, from “an ‘absolute mathematics’, a mathematics at rest, in the style of Russell” and proceed towards “a ‘relative mathematics’, a mathematics in motion, in the style of Grothendieck” (240). The entire work of contemporary mathematics, carefully recounted by Zalamea, aimed at the production of

remarkable invariants ... *without any need of being anchored in an absolute ground.* We will therefore take up a revolutionary conception which has surfaced in contemporary mathematics in a *theorematic manner*: the register of universals capable of *unmooring themselves from any ‘primordial’ absolute, relative universals regulating the flow of knowledge.* (242)

Developing the theme of “relative universals”, Zalamea introduces Freyd’s “allegories”: abstract categories of relations, exposed in diagrammatic terms via representations that obviously “a functional, set-theoretic reading would fail to detect” (243). I want to stress that, in general, categorial diagrams are not “equivalent” to the equations to which they can be formally reduced: the diagrams indeed highlight symmetries that are merely implicit, invisible, in the equations; they need “extracting”, just as Noether’s theorems extract symmetries from the equations of physics.

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Freyd shows how, starting from pure type theories with certain structural properties (regularity, coherence, first-order, higher-order), one can uniformly construct, by means of a controlled architectonic hierarchy, free categories that reflect the given structural properties in an origin (regular categories, pre-logoi, logoi, and topoi). (243)

In this way, all the invariants of logico-relational transformations – beyond the particular variants of any specific logico-mathematical domain – are expressed in a maximally synthetic and abstract way. As usual, the analysis of transformations, of preserved structural invariants, and of variants (which can however have a “local” sense) is at the heart of mathematics, and this is confirmed by the logical-foundational spirit of Freyd’s work. Referring to the latter, and taking his moves from the Yoneda Lemma, Zalamea uses the occasion to explain, as I mentioned above, that pre-sheaves categories can be considered as the general locus of the “continuity” wherein every discrete category can be embedded. Like Thom, one comes to the conclusion that the continuum “underlies” (is an archetype) for the discrete as well (Thom argues that a discrete set is nothing but a collection of singularities in a continuum).

Without necessarily according ontological priority to the one or the other, I would like to observe that, in the natural sciences, the discrete and the continuum organize the world differently, and this can be demonstrated: by analyzing the different role of symmetries and their breakings, which these mathematical structures, when employed for theoretical organization or simulation, accentuate and project upon physical and biological processes (see Longo and Montévil 2014a).

Having passed through a technically pertinent close-up of the reverse mathematics of Friedman and Simpson, Zalamea demonstrates how the work of Zilber contributed to giving a Grothendieckian understanding of the model theory of Tarskian tradition (Chang, Keisler): no more “logic + universal algebra” but “algebraic geometry + fields” (Shelah, Hrushovski, Zilber, Hodges). With Zilber we have “the emergence of ‘groups everywhere’ – invisible at first, but lying in the depths (‘ar-

chetypes’)” (256). A kind of “renaissance” and generalization of Erlangen’s program, as Zalamea rightly notes.

An analogous motto allows us to grasp a central element of Gromov’s contribution to geometry: “‘smoothing’ and ‘globalization’ that are tied to the notion of metrics everywhere” (259). Then Zalamea hints, with fine synthetic and analytic skill (that is, with great command of language and pertinent mathematical references, as always), to the work of Gromov on “partial differential relations, on “symplectic varieties”, and on hyperbolic groups (259) – a work enriched by a certain sensitivity, proper of the French-Russian school, to the play between geometric insight, analytic virtuosism and physical applicability. Introducing pseudoholomorphic curves and seeking the

invariants of those curves, Gromov shows that the spaces modulo the curves are compact, and that it is therefore possible to work out a natural theory of homology, which leads to the Gromov-Witten invariants; in the last instance, the new invariants allow us, on the one hand, to distinguish an entire series of hitherto unclassifiable symplectic varieties, and, on the other, help to model unexpected aspects of string theory. (262)

Once again, the analysis of the invariants and the transformations preserving them – relativizing the movement between a structure to another – is at the core of Gromov’s work on Riemannian manifolds, within a program of “geometrical group theory” described as the project aiming at “characteriz[ing] finitely generated groups, modulo quasi-isometries, which is to say, modulo ‘infinitesimal’ deformations of Lipschitz-type distances” (264).

In Chapter 8, Zalamea synthesizes some of the themes touched in the book, in order to propose his own vision of a “transitory ontology”. It is a relativizing, yet not relativist vision (of either the “weak” or the “anything goes” variety), an Einsteinian vs. Newtonian one, at the center of which lie transformations (passages, transits) and pertinent invariants: “the transit of mathematical objects consists in finding suitable invariants (no longer elementary or classical) behind that

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transit” (271). And so Zalamea himself sums up the themes he examined more extensively earlier in the book

motifs [p.144-146], pcf theory [p.201-202], intermediate allegories [p.245-246], Zilber’s extended alternative [p.257], the h-principle [p.263], etc. [...] neither absolute foundations nor fixed objects, not everything turns out to be comparable or equivalent, and where we can calculate correlative archeal structures - that is, invariants with respect to a given context and a given series of correlations - which, precisely, allow differences to be detected and reintegrated. (272)

Representation theorems, which Zalamea often mentions in his book, assign a key role to strong and diverse specifications of the notion of group. To emphasise this role, I borrow Zalamea’s own list of topics (specifying, in square brackets, where each theme has been considered), always examined with a refined informality that manages to be both complete and informative.

homology and cohomology groups [p.142-148,178-179], Galois groups [p.150,155,225], group actions [p.162-163,180-181], Abelian groups [p.165], homotopy groups [p.176], algebraic groups [p.184], the Grothendieck-Teichmüller group [p.225,233], Lie groups [p.223], quantum groups [p.223], Zilber groups [p.255-256], hyperbolic groups [p.264], etc. (272)

This demonstrates a dynamics of “webs incessantly evolving as they connect with new universes of mathematical interpretation. [...] This just goes to reinforce the position of Cavallès, who understood mathematics as gesture” (273). Such are organizational gestures of correlated mathematical universes, correlated by a web of transformations, like the hand gesture that organizes space, gathers, delimits, and transfers, as we can say with Châtelet. This process assumes an historicity that serves to highlight the sense and the relationship of mathematics vis-à-vis the real: mathematics works (where it does work) and has meaning because it is constituted through a human - all too human - praxis. All too human because it is anchored to pre-human invariants, those of our actions in

space and time; universal, for us historical and speaking human beings, precisely because pre-linguistic and pre-historical, even though language alone allowed the transformation of “practical” invariants into concepts and structures. And, in language, writing, as Husserl (1970) observed, has further contributed to the process of the stabilization of concepts.

Considering the correlations between groups, symmetries and invariants, in the context of this section on “groups everywhere, metrics everywhere”, I would like to mention the role of (animal) memory in the constitution of invariants. Memory is forgetful, that is one of its essential properties: we, as animals, forget irrelevant details of an action, of a lived experience. Irrelevant, that is, with respect to the protensive – intentional (conscious) or not – gesture, already done or still to be performed: memory is selective in both its constitution and in its re-activation. This selective choice allows us to undertake once again a given action in a similar but not identical context, to operate another protension or prevision, counting on the relative stability of the world, through changing distances, for example, which we attempt to organize in stable metric evaluations. We do not access memory as we would access a digital hard drive. The protensive gesture, I say with and beyond Cavallès, reactivates memory every time: not in a passive way, but choosing, selecting and constituting new practical invariances, beyond those isolated and selected by memory in its constituting process. Animal memory is reactivated in a protensive manner, or better, it is re-lived for a purpose, be it a conscious or non-conscious one, forgetting all that is irrelevant to the present goal:(Edelman and Tononi 2000) argue that, in the act of memory, the brain puts itself in a lived state..

Meaning derives, moreover, from the intentionality, even a pre-conscious one, that inheres in protensive gestures, particularly in a “perturbative” modality. It is that which interferes with, and which operates a friction upon, the protensive action which acquires, for us as animals, a meaning. And there is no protension without retention. Obviously, then, a digital machine with a perfect memory cannot do

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mathematics, because it cannot constitute invariants and its associated transformation groups, because a perfect, non-protensive memory does not construct meaning, not even mathematical meaning. At most, the machine can help with formal fragments of proofs, or check, a posteriori, the formalized proof, or parts of it (proof-assistance and proof-checking are burgeoning fields). Only animal memory and its human meaning allow not only the construction of concepts and structures, but proof as well, as soon as the latter requires us to propose new concepts and structures, or the employment of ordering or invariance properties which go beyond the given formal system (well-ordering, say, or the genericity of infinitary structures). It is thus that recent results on the concrete incompleteness of formal systems can be interpreted: meaning demonstrably lurks in the proofs of formally unprovable theorems (see Longo 2010, 2011).

Zalamea's transitory ontology

Zalamea insists on employing a terminology of different forms of "ontology" (local, regional, transitory...). Mathematics, between 1950 and 2000, as he adequately demonstrates, proceeded by an analysis of streams, transits and deformations of structures, and their limits. A network was therefore built, a web weaving together - via passages and transits, but also dualities and limits - a bewildering variety of constructions. In such a web even Logic and Proof Theory find a new structural significance,

where pivotal statements in logic such as the Loz theorem for ultraproducts, the completeness theorem for first-order logic, forcing constructions in sets, and theorems of type omissions in fragments of infinitary logic, can all be seen, uniformly, as constructions of generic structures in appropriate sheaves. (284)

Indeed, sheaves constitute a structure of particular interest, very often mentioned in the text. Born with Leray's analysis of indexes and "converings" of differential equations, "sheaves

are precisely what help to capture (and glue together) the continuous variation in the fibers.” (285, n. 345). Moreover they allow movement between the local and the global. So, thanks to Grothendieck’s generalization (sheaves on a Grothendieck topology), they allow the integration of “a profound web of correlations in which aspects both analytic and synthetic, both local and global, and both discrete and continuous are all incorporated” (286). Obviously, the category-theoretical framework is the most fitting for this organization of mathematics. If in the Category of Sets objects are non-structured and non-correlated conglomerates of elements, “category theory studies objects through their external, synthetic behavior, in virtue of the object’s relations with its environment” (288). Avoiding set-theoretic absolutes, in Category Theory the notion of “universality”, for example, is relativized, becoming a “unicity” relative to given structures, in the given class of morphisms. We have already observed how the analytic/set-theoretic approach leads, perniciously, to the description of every categorial diagram in terms of equations. Now the constructions (co-product, adjunctions, pull-backs...) or the proofs in Category Theory can be based upon, and have a meaning thanks to, symmetries and dualities present in the diagrams, absolutely invisible in the equations. I therefore once again underscore the fundamental contribution of Noether’s theorems, which “extract” physical invariants by reading symmetries in the equations (of motion): in the same way that categorial diagrams “extract” meaning out of mathematical correlations, which then become visible and comparable symmetries.¹¹

11 We should note that the notions of “scheme” from algebraic geometry, of “frame of locale theory”, or of Grothendieck topos, and their properties, are not captured by an approach in terms of “space = set + topology” (or “space = set + structure). For example, from the constructivist point of view, important theorems like Heine-Borel’s do not hold in set-theoretic contexts, while they do in adequate, point-free, topos (see Cederquist and Negri 1996). Similarly, constructions based on pull-back, insofar as they are eminently categorial, allow to distinguish the obtained structure from the set of points (when it is not an invariant with respect to the “sets of points” in question). And a pull-back, typically, has a meaning - a visible

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Zalamea's work aims at moving the web of mathematical structures that have been introduced by contemporary mathematics to the level of epistemological analysis, similarly as we saw the transfer the methodological content of Einstein's invarientheorie to a foundational approach. That is to say, it aims at the construction of a comparative epistemology, "a sort of epistemological sheaf, sensitive to the inevitable complementary dialectic of variety and unity that contemporary mathematics demands" (296). A mathematical knowledge some of whose highest peaks Zalamea (296) enumerates ("Grothendieck's motifs beneath the variations of cohomologies [p. 144-148] [...] Freyd's classifying topoi beneath the variations of relative categories [p. 245-246]"), proceeds between conceptual networks and their deformations "by means of series of iterations in correlative triadic realms: differentiation-integration-invariance, eidos-quidditas-arkhê, abduction-induction-deduction, possibility-actuality-necessity, locality-globality-mediation" (297). The goal is that of "a sort of epistemological 'sheafification', where the local differential multiplicity is recomposed into an integral global unity" (299).

Is this a "foundationalist" epistemological analysis? It surely is, in my opinion, since every epistemology is also an analysis of a network of correlations and an history, a rational reconstruction of a constitutive path, evidencing the network of passages and transits and, in this way, the unity of the construction of knowledge. Of course, such an analysis doesn't propose logical or ontological absolute foundations, since the network is held together thanks to its own structure, but also thanks to its friction upon the world, thanks to the unity of language, thanks to its history - through which it constituted itself - and thanks to the windows of intelligibility that it bestows upon us. In this sense, to be provocative once again, I would go as far as to say that mathematics helps us to construct objectivity precisely because it is contingent, the result of the "history" of a real friction with the world.

meaning - only if we can appreciate its symmetries: the construction itself is given by a duality (a symmetry) upon diagrams.

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In this history we need to include that cognitive rooting, all the way back to its pre-human form, at which I hinted before when considering the role of memory in the constitution of invariants. Zalamea briefly refers to another interesting and technically deeper “cognitive” analysis, correlated to Gestalt, with which Petitot (2008), and Citti and Sartri (2013) describe the visual brain, neurogeometry. In the construction of the world (in its friction with it) the brain, always active and plastic, structures itself in a way that can be grasped geometrically, thanks to complex symplectic structures. The brain organizes the world through vision by imposing contours, correlating points with the regularity of minimal forms, relative geodetics, and reading and imposing symmetries.

These kind of analyses, like those I mentioned above vis-à-vis memory, are not operations of cognitive “reduction”, but rather tend to highlight the possible initial steps of a constitutive path through which our communicating community has assembled conceptual mountains – in a contingent, because historical, way. An alien friend of mine, from the Sirius system, has no corporeal symmetry and interacts with her ecosystem thanks to *zuzrbs*, and organizes her world on the basis of a fundamental regularity that we cannot appreciate, but that may nevertheless be singled out, the *tzsuxu*. It is another gaze, another epistemically efficacious perspective, one perhaps compatible with ours (or even able to unify microphysics and astrophysics, still, for us, objects of incompatible descriptions). Another light is thus shone upon the universe, of which we see little more than the humble tick, whose *Umwelt* is so adroitly described by Von Uexküll (1934), a tick who has been successfully coping with the universe for far longer than we have.

Zalamea, instead, insists much on

the hypothesis of a continuity between the world of phenomena, the world of mathematical (quasi-)objects associated with those phenomena, and the world of the knowledge of those objects – which is to say, the hypothesis of a continuity between the phenomenal, the ontic and the epistemic ... From an epistemological point of view, the distinct

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perspectives are nothing other than breaks in continuity. (304-5)

I will leave it to the reader to adjudicate whether or not it is possible to move “with continuity” between our two points of view, and with mutual enrichment. As for myself, I will insist, in the next section, on the “critical transition” between these worlds, which needs to be analyzed in terms of physical measure, or ways of access to phenomena. I have indeed spoken of the constitution of invariants that lies at the heart of the construction of (physico-mathematical) knowledge, in continuity with action upon the world, yet not with the world in itself.

I am in complete agreement with the project of a “geometricization of epistemology [...] that would help us to overcome (or, at least, to complement) the ‘logicization of epistemology’ undertaken throughout the twentieth century” (307). The distinction between “principles of proof” and “principles of (conceptual) construction” (in Bailly and Longo 2011) and the comparative analysis of the two sets of principles in mathematics and physics first, and in biology, is precisely aimed at overcoming (complementing) the monomaniacal (if profound and fertile) approach to Proof Theory as the only locus for the foundations of mathematics. And this “geometry of epistemology” consists, in primis, in a Grothendieck-Lawvere-style geometrization of logic (but one that also follows from Girard and his geometry of proof [2001, 2007]). A project analogous to the geometrization of physics, from Poincaré’s geometry of dynamical systems to the enormous work that goes from Riemann to Einstein and Weyl in physics and from Gromov and Connes in quantum mechanics. We speak, therefore, of the construction of “mathematico-philosophico-metaphorical” tools which, as Châtelet puts it (paraphrased by Zalamea) in his historical study of the nineteenth century,

in this search for a continuous articulation, include ‘dialectical balances’, ‘diagrammatic cuts’, ‘screwdrivers’, ‘torsions’, and ‘articulating incisions of the successive and the lateral’, which is to say, an entire

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series of gestures attentive to movement and which ‘inaugurate dynasties of problems’ and correspond to a certain fluid electrodynamics of knowing. (309)

Merleau-Ponty speaks of a “glissement du savoir”, in both space and time: the epistemological challenge is to structure and organize such knowledge, to give meaning to the moves of both space and time in an historical and human sense of knowledge, and consequently fostering the creation of new perspectives, including new scientific perspectives.

To sum up, consider that in mathematics, in Zalamea’s words

the notion of sheaf, in a very subtle manner, combines the analytic and the synthetic, the local and the global, the discrete and the continuous, the differential and the integral [p. 285-288]. In this way, the ‘sheafification’ of the analysis/synthesis polarity generates a new web of epistemological perspectives. (319)

Zalamea presents his Platonism accordingly: not static, but processual and methodological, so that “the definitions of mathematics, in reality, define methods; in no way do they define existent things or simple properties inherent in such things” (330). This outlook mirrors my own stance on the matter, and it is precisely that which allows us to pose the problem to what extent such methods are to be preserved and to what extent they are to be enriched or modified, when moving to the interface between mathematics and biology (Longo and Montévil 2014) - and to what extent our attempts of theoretical objectification of the living can still be inscribed within this framework. The notion of “mobility of the base” to which Zalamea refers, is close to the vision of objectivity and effectiveness of mathematical construction upon which I insist, insofar as it is the result of a phylogenesis and of a human history: “as the Platonic mobile base suggests, neither invention nor discovery are absolute; they are always relative to a given flow of information, be it formal, natural or cultural” (333). Which “base” changes should be operated in order to move from the interface between mathematics and

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physics to that between mathematics and biology? From the epistemological point of view, but also from that of an original scientific construction, we are not interested in an ontology of the “transcendence” of mathematical objects, but rather in their “transcendental constitution”, as the phenomenologist would have it – that is, their constituting through (and a “transit” upon) the praxis of life and knowledge internal to mathematics and often (and in a particularly fecund manner) located in the interface with other forms of knowledge.

By posing the question of the relationship between mathematics and biology, therefore, I do not exclude a certain autonomy of pure mathematics and of its effects on the world. I want to stress, however, that mathematics has always nourished itself on new interfaces, on new problems to which new theoretical answers needed to be formulated. Thus, the “fluid electrodynamics of knowing” can take us very far from the original frictions, and an innovative metaphysics can further fluidify this exchange – just think of the role that the philosophies of Nicola Cusano and Giordano Bruno, as well as the practices of the painters of Italian perspective, played in helping us to think the mathematical infinite and, in general, to conceive of new symbolic constructions of science and mathematics (see Petitot 2004; Longo 2011b; Angelini and Lupacchini 2013).

Regarding the relationship between culture, arts and mathematics, and their capacity to interact through the creation of “perspectives” and points of view, Zalamea borrows Deleuzian themes, and quotes at length an art historian, Francastel. On these themes I want to remember Arasse, a disciple of Francastel and historian of painting, from whose more refined analysis of the aesthetico-epistemological role of Italian perspective I suggest we draw precious insights regarding the play between the (local) detail and (global) sense of a painting, the interaction between painting and knowing artistic subject (see Arasse 1999, 2009; S. Longo 2014), as well as the sense of the (mathematical) infinite in renaissance painting.

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The breath of aesthetics permeates mathematical creativity on at least two levels, as detonator and as regulator. Referring to the artistic imagination, Valéry writes in his Cahiers: ‘Imagination (arbitrary construction) is possible only if it’s not forced. Its true name is deformation of the memory of sensation’ [...] We have seen how contemporary mathematics systematically studies deformations of the representations of concepts. [...] The visions of ‘cohomologies everywhere’ in Grothendieck [p. 146], of ‘groups everywhere’ in Zilber [p. 256], or ‘metrics everywhere’ in Gromov [p. 259], ultimately answer to a new aesthetic sensibility, open to contemplating the local variations of (quasi-)objects through global environments of information transformation. The aesthetic regulation that allows the invasion of cohomologies, groups or metrics be calibrated is decisive. (372-3)

Number and the Question of Measure

When three stones are lying on the ground and a volcano spits out other two stones, neither the number 3, nor the number 2, nor the concept of sum are there – there are some stones on the ground, and that’s it. These will be five stones for the practical action of whatever being decides to cut them apart from their background, as we do (unlike the tick, for example).

When a lion, in a group of three or four, hears five or six distinct roars in the distance, it prudently changes course, in order to avoid an uneven conflict – or so the ethologists tell us. The lion “isolates” an invariant of praxis, a praxis wherein memory helps it to compare different active experiences, from vision, hear and smell. However, the lion does not possess the concept of number, it merely builds – but this itself is no mean feat – an invariant of action.

When we make the difficult, and very human, gesture of an open hand with five outstretched fingers symbolizing a numerical correspondence, and we refer to it in language, we are giving ourselves the concept, further stabilized in writing. Number is not already “inscribed in the world”, not even in the discrete material of the stones on the ground, not before

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they are isolated from their background - pragmatically as many animals know how to, as well as in mythical-theoretical manner, through language, as we have learned how to.

Number is not to be located in the biological rhythms that regulate the time of the living either (Chaline 1999; Longo and Montévil 2014). What is however interesting is the association that Brouwer makes between the construction of the concept of number and the “two-ness” of temporal discreteness: that moment which passes by and becomes another (Brouwer 1975) in the discrete succession of a musical rhythm, the rhythm of the living, a proposal that evokes the Pythagorean intuition of number and music. This picture is incomplete though: only a plurality of active experiences permits the constitution of an invariant, of that which does not change in the transformation of one experience into another. The rhythm that organizes time into the discrete, the “small counting” (the comparing and counting of small quantities) which we share with many animals (see Dehaene 1998), the spatial ordering of different objects, together with the sense of movement associated with order (Berthoz 1997) - all of these precede and contribute to the constitution of the (practical and conceptual) invariant, being different active experiences. The passage, the transit, the transformation of one into the other are necessary in order to produce the invariant. All Pythagoreanism, holding number as intrinsic in the world, is misplaced: a brain, embedded in its preferred ecosystem - the body of a human, historical and dialogical being - is needed, along with a plurality of praxis from which to distill an invariant in memory and then produce (in language) number, in order to stabilize a concept resulting from a practical invariance with a long evolutionary history.

Such constituted invariance comes into play even more when it comes to analyzing processes and dynamics, where one needs to remember that in physics and, a fortiori, in biology there is nothing but dynamics. We need then to measure this or that observable pertinent of the selected process, a theoretical proposal, also fixing a moment of measure, and decide a beginning and an end of the process - a far more

complex act than that of counting five stones. So measure necessarily is, because of physical principles, an interval. Thermic and gravitational fluctuations, as well as quantum non-commutativity, do not allow us to associate a number with their dynamics and with the pertinent observables, but only approximations, changeable intervals. There is no intrinsic number in no physical process: it is we, through the difficult gesture of measurement, who associate numbers with certain dynamics, as couples, extremes of rational intervals, as concepts and as writing, constructed in language. And then, with an eminently mathematical passage to the limit, one which took 2.500 years to be achieved in relative completeness, we have proposed numbers without jumps nor gaps, the Cantorian continuum, one of many possible continua where the intervals of measure could converge.

The mediation or interface between mathematics and the world requires the selection of a frame of reference and measurement, the production of a number which is not in the world but which must be extracted or proposed in order to organize the world. In some cases a structure, a geometry, can organize the world “without numbers”, so to speak. That’s precisely what happened in the various facets of the “geometrization of physics”, of which I spoke above - from Riemann to Poincaré and Einstein, from Weyl to Connes - structures that were somehow derived, as I said, from the problem of measurement (ruler and compass, rigid body, Heisenberg’s non commutative algebras). This method can also be found, for example, in the symplectic geometrization of the visual cortex (see Petitot 2008; Citti and Sarti 2013). But like the others, even this organizational proposal, a proposal of intelligibility that justifies the co-constitution of Gestalt with and within the world, must then allow us to analyze fluxes, to study functionalities and the dynamics of vision, analogously to physical processes. And so geometry too requires numerical measure, with all the characteristics I mentioned, as does every access to the structures of geometrized physics - with its difficulties and limits: classical, relativistic and quantum (and in this case, biological).

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The flat (unidimensional) computationalists who see algorithms and numerical calculi as coinciding with the world should first reply to the provocative question I addressed to the Pythagoreans, (see Longo and Paul 2010 for a formulation of it) since they seem not to care about the issue of whether the fundamental constants of physics are computable real numbers. How unfortunate that Planck's h is not a whole number, with G and c whole multiples of it! Is that God playing tricks on us? And these "constants" (approximated invariants of measure and theory) are present in all the significant equations, those that define the alleged "computable functions" of physical processes. We also suggested to fix $h = 1$, a legitimate move, modulo some transformation in the metric of energy or time, but then the computationalists are not able to compute G or c as exact real numbers, stuck, like everyone else, in the interval of the new measure. If I were to go out on a limb, I would bet that the fundamental constants are "random real numbers" à la Martin-Löf (see Calude 2002), that is, strongly uncomputable real numbers, since they have a Lebesgue measure of 1 ("probability" 1) in every interval of the reals. It should be said that "randomness", for real numbers, is a notion that has a meaning only to the infinite limit: these incomputable reals are therefore an asymptotic jeu de hazard, an infinitary dice game, available to God alone - and this capable of convincing even Einstein.

I defined the partisans of the "computational world" as "unidimensional", since the question of dimension is at the heart of their flattening of knowledge. A first way of being in the world and of constructing the intelligibility of the world with other disciplines, indeed, is to appreciate its "dimensionality", in the entire semantic richness of the word. To begin with, it should be observed that everything changes, in biology but also in physics, with the Cartesian dimension. From Poisson's equations of heat, a standout case, to all physical and biological processes, the spatial dimension within which a process is analyzed is fundamental: its fixing precedes every theoretical analysis - it functions as its condition of possibility, we should say with Kant. In general, the

choice of a Category or of a Topos and their embedding in a relative universe of Categories, with transits, functors, and “natural” transformations to move from one to the other, is a fundamental theoretical passage.

Consider the poverty, in speaking about the world, of a Category, that of Sets, as an alleged ultimate universe of fundamentals of intelligibility, where the set R of the reals is isomorphic with R_n : the dimension being irrelevant for the analysis. Or, even worse, the parody of a universe postulated by the computationalists: the Category of discrete sets and computable functions, where N is isomorphic with N_n . These isomorphisms are essential to the theories in question: in the first case they allow us to speak of cardinality, in the second they allow the definition of Universal Machine, one of Turing’s great ideas, which led to the production of compilers and operative systems of informatics. Personally, I have found technical work in this latter Category, and its Types (see Rogers 1967; Barendregt 1984; Girard et al. 1989; Odifreddi 1989, 1999) very interesting, as explained for example in Longo and Moggi 1984. The second Category is also well correlated to the first one, once some algebra is added to it (see Longo 1983). Computability and Types, from Church to Girard, are at the origin of – and are still capable of giving mathematical sense to – the extraordinary machines we have invented; we need, however, to always try and offer correspondences between their category and others of different nature (see Asperti and Longo 1991).

Yet there are still those who want to analyze the Universe, the brain, and the organism (the latter being codified by the discrete structure of DNA) by remaining within N and its finite, isomorphic powers. Now, the minimal structure one needs to assume in order to correlate mathematics and the world is a topological invariance, that of dimension. So, if we consider, on R , the so-called “natural” topology, that of intervals, the structure forbids the absurd isomorphisms mentioned above: an isomorphism between two topologically open sets of two different spaces forces the same dimension of these spaces, which is then a topological invariant. This

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is a simple but beautiful correlation between topology and physical measure, since natural topology derives from classical physical measure, an interval. This allows us to come back to what I mentioned above about measure, and how such a topological invariance has no meaning upon the discrete, where the access is exact, absolute, and far from any form of measure and access to physical and biological processes. When we hope to ground the intelligibility of the world upon one-dimensional, codifiable mathematical universes, as the strings of bits that codify an image on a computer screen, we break the symmetries that make the world intelligible (Longo and Montévil 2014; 2014a).

Synthetically, one could say that that which is geometric, and therefore a fortiori categorial, is “sensitive to coding”: form, structure, the diagrammatic Gestalt, and organicity are not invariants of coding, their entire sense is lost by coding, as instead are information or digital computation, where independence of coding is their mathematical strength. It is therefore licit to claim that no physical process computes (Longo 2009). In order to build one such process, the digital computer, we had to invent the alphabet, modern logic from Boole to Frege, Hilbertian formalisms, and Turing’s and Gödel’s formidable codings. We thus individuated a new fundamental invariant, the notion of computable function, independent from the formal system. We had to inscribe these calculations, codify them in a machine with discrete states, and make the latter stable and insensitive to the codings and fluctuations I mentioned above, forcing an electromagnetic dynamics into the discrete, channeling it into an exact interface. So every process in digital machines can be iterated in an identical manner, via the implementation, on structures of discrete data, of “term-rewriting systems”, i.e. systems of alphabetic writing and rewriting, the most general form of computability (see Bezem et al. 2003). This is a massive amount of science and engineering, which includes the Lambda Calculus, with and without types (see Barendregt 1984; Barendregt et al. 2013) to which we gave, with many others, a geometrical significance in adequate Topos, bringing them back to bear upon

that geometrical organization I insisted upon, far from the monomaniacal obsession with the computable discrete. This has been a part of the network of constructed relations, the synthetic movement of thought which lies at the heart of the construction of mathematical knowledge, rich in concrete and historical friction with the world.

To sum up, number and its structures are not already in the world, and neither is it “effective computing”, which is nothing but the formal transformation of the writing of number: it is expressed in systems of re-writing, transformations of alphanumeric writing, upon which a machine can operate. Phenomena, in physics in particular, are on the other hand organized by us through non-arbitrary principles of intelligibility, among which conservation and symmetry principles that have dimensions and pose the problem of access and measure. More precisely, I want to recall how the conservation of energy and momentum (that are theoretical symmetries) allow us to write the Hamiltonian, from which to derive, for example, Newton’s equations – a specific case but of great historical importance. From these, indeed, we can proceed deducing the orbits with Keplerian properties.

This backward reading of history (starting with Noether-Weyl’s symmetries, and going back to Hamilton, Newton, and Kepler) makes us appreciate the beauty and unity of this strongly geometric construction of physico-mathematical knowledge. This holds even if the planets and the Sun are not identifiable with a material point mass, even if the phenomenal continuum is not made of Cantorian points (see Weyl 1987 on this topic) and thermic and gravitational fluctuations make physical trajectories different from mathematical ones, especially when there are two or more planets (Poincaré’s problem). The system, then, is chaotic and unpredictable in modest astronomical time-frames (see Laskar 1994). And the mathematics of “negative results”, as Poincaré rebutted to Hilbert, makes such phenomena intelligible. Only on a computer screen does a trajectory made of pixels – even the chaotic one of a double pendulum – follow exactly the path dictated by the numerical solutions of an equation and can iterate it exactly – a physical nonsense. The symmetries of

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a computational model are different from those of the continuum, as we observed (see Longo and Montévil 2014a). So the digital trajectory quickly diverges from that of the mathematical continuum and from the “real” one. Moreover, restarted with the same digital approximation, on the same number, it repeats itself again and again, identical to itself, in *secula seculorum*, something that never happens in physics – and even less in biology, a science of radically non-reversible and non-iterable onto-phylogenetic trajectories, cascades of changes of symmetry: a science of correlated variations (Darwin).

Towards Biology: Problems and Conjectures

1- Variation, Continuum

I already talked at some length of the revolutionary role, in contemporary mathematics, of sheaves and pre-sheaves. These allow, in particular, for the construction of a new outlook on variation, on the continuum and on the relation between local and global. It is thus possible to break free of the dictatorship of a continuum qua set of points and “punctual” variables which do not make jumps nor sink into gaps – a beautiful construction we owe to Cantor and Dedekind, one of the most profound constructions of mathematics, but very far from the continuum of phenomena. Weyl (1987) has already explained how absurd it is to consider such a mathematical universe as congruent with the phenomenal continuum – the temporal continuum in particular, which is certainly not made of points. It is meaningless, Weyl argued, to isolate in a point a present moment that is not there anymore (as Augustine would have it), even if he admits that, at the time, he was inevitably subordinated to that exact construction of mathematics. Today, we can do better, even though Cantor’s and Dedekind’s construction is still profoundly entrenched into our mathematical imagery, and it is indeed the common sense of every school-educated person. Attempts (that

of Lawvere-Bell for example, see Bell 1998) to introduce the Topos-theoretic vision into university educational programs have had, for now, scarce success.

Perhaps the very general form of variation (or sheafification, as Zalamea puts it) on a continuum not composed of points (and without “enough points”, as morphisms of the terminal object upon the one in question) can fall back upon the phenomena and help us make intelligible the “continuous variation” considered in biology, just as complex numbers – imaginary objects of algebra – have helped us to understand microphysics. I said that variation is (one of) the fundamental invariant(s) of biology, and that the mesh of biological and ecosystemic relations channels this variation and forces a permanent determination of the local by the global (and vice versa), in a permanent critical transition which, for the time being, resists a general and efficacious mathematization.

It is not obvious how to apply new instruments such as Grothendieck’s in a theoretical-biological field, and I personally know of no successful attempt to do so. I have not seen, and I do not know how to bring about, a passage from “set-theoretical punctuality to the actions of non-commutative monoids in Grothendieck topoi” (223-4) as applied to a satisfactory theory of organisms: it may be a job for a next generation. The first obstacle, following our approach, is the genericity of the physico-mathematical object and the specificity of its trajectories. The objects and the transformations in and on the Topos have the physico-mathematical character of genericity and specificity: this is reversed in biology, as we said, with a duality which represents a major conceptual challenge.

What type of categorial, technical, duality can reflect this theoretical duality and produce a new outlook on biological phenomena? I would be wary of shortcuts and of the arrogance of anyone who would master such a beautiful mathematics: the living is an extremely hard subject matter, a difficulty of a different kind than the one faced by the beautiful mathematics we have discussed. We must first appreciate the richness of the Theory of Evolution, the only great theory in biology, as recounted by many great contemporary evolutionists – to

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observe the complexity of the embryogenesis of a fly's leg, or the possible embryogenetic bifurcations of a zebra-fish - in order to fully understand why the competent and honest experimental biologist is unable to give an answer to 80% of the questions that the theorist poses to her when visiting the lab. This is not the case in physics.

Perhaps another duality can be more easily grasped through new structures. From Hamilton to Schrödinger we have become used to understanding energy as an operator (the Hamiltonian, the Lagrange transformation) and time as a parameter. I hold that this approach, in biology, should be inverted: here time is the fundamental operator, constitutive of the biological object by way of its phylogenetic and ontogenetic history, while energy is nothing but a parameter, as it indeed appears in scaling and allometric equations (see Bailly and Longo 2009; Longo and Montévil 2014). If we clear our mind of the classical schemes in which Hamilton's and Schrödinger's operators - and Pauli's controversial theorem, which partially formalizes the distinct physical role of energy and time, (see Galapon 2002) - are given, we can perhaps begin to see the whole in a new, dual way, as required by the phenomenality of the living - by its historicity, in this case.

Another theoretical path that needs a new outlook in terms of continuity, density (as the rational numbers in the reals) and of analysis of the local vs. the global is that of "extended criticality" (see Bailly and Longo 2011, Longo and Montévil 2014). Critical Transition Theory, in physics, is an extremely interesting discipline - born within the fold of post-War quantum mechanics yet further developed also in a classical form - for analyzing phase transitions through the application of (quite a bit of) mathematics. The dominant framework, obviously formalized on Cantor-style real numbers, describes the "transition" as punctual, and this punctuality is essential to the methods of Renormalization (see Binney et al. 1992; Laguës and Lesne 2003). These deal with a cascade of models which describe changes of scale and of pertinent objects, with a change of symmetries (both breaking and construction of new ones) at the punctual limit of the transition, where the

local appears imbricated with the global. The most familiar examples are the formation of a crystal or of a snowflake, the para-ferromagnetic phase transition, and Ising's transition, all mathematized as punctual transitions.

The criticality of the living, on the other hand, is extended: it is always in a state of “phase transition”, in a permanent reconstruction of its internal “symmetries” and in correlation with the environment (see Longo and Montévil 2014). Indeed, in an organism every cellular reproduction has the characteristics of a critical phase transition, for internal reconstruction and of the surrounding tissue. And within the cell itself, molecular cascades pass through critical values which can similarly be seen as phase transitions. The slight modifications that always follow it are part of adaptive biology, including ageing (the increase in metabolic instability, oxidative stress). An organism is somewhat like a snowflake which reconstitutes itself in permanence, partially modifying its symmetries, jointly to the correlations with the ecosystem. In short, an organism is not merely a process, a dynamics, but is always in an (extended) state of critical transition, permanently reconstituting local and global “symmetries”. An interval of criticality can give some idea, as I am trying to convey it, but the density that would be necessary to describe it cannot be the “point by point” density of a segment of Cantor's line in respect to every pertinent parameter – or if it is, it is only so in an inadequate manner. In any case, renormalization methods cannot be applied, as such, to a classical interval of criticality. A reasonable objective could be that of replacing the Cantorian interval with the variation in/of a point-less (pre)sheaf, thus giving a representation of density adequate to renormalization, suitably extended.

2 - Measure

I have already discussed the crucial role and the theoretical and experimental richness of measure in physics, the sole form of access we have to the world (including perceptual

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“measure”), an interface between mathematics and phenomena. In biology the situation is even more complex. In the first instance, a difference must be drawn between “in vitro” and “in vivo”, a difference which has no meaning in physics. Moreover, over the last few years we have seen the development of refined techniques of three dimensional cultures: cells or tissue fragments from an organism are developed in collagen suspensions from the same organism, giving rise to matrixes or parts of tissues impossible to observe in traditional and “bidimensional” Petri dishes. Thus both observation and measure are profoundly changed, as if (but not quite as if) we were somewhere in between the “in vivo” and the “in vitro”.

In any case, the duality I examined between generic and specific, between biology and physics, radically changes the meaning of a measure. The biological object is not an invariant either of experience or of a theory, unlike the mathematical and physical object. It is specific and historical and, to a greater or lesser degree, individuated. Of course, the individuation of a monocellular organism or of a single cell in a tissue is minimal compared to that of a primate. And yet a cellular culture is prepared, by biologists, with a full awareness of the history of cells: cells from a given tissue are labelled, and the descendents are distributed with the utmost care throughout the world in order to reflect, collectively, on the iterability of an experiment in reference to the history (i.e. the specificity) of each cell or tissue. The same goes for lab rats, labelled and traced along families as offspring of a same couple, so that they will have a common, or at least known, phylogenetic history.

In an ongoing project, between laboratory experience and theory, Mael Montévil is working on a theoretical analysis of what he calls the “controlled symmetrization” of the biological object factually practiced in laboratories, in order to deal with its specificity and to make it as “generic” as possible. One of the consequences of biological specificity is that the Gaussian distribution of a measure does not have the same meaning that it does in physics. For example in physics, in general, deviations from or situations marginal to the Gaussian can be seen as noise and decrease, relatively speaking, with the

increase of the total number of samples. In biology “deviations” are “specific cases” that can have great significance for (cellular) differentiation and speciation, and increase as the number of samples grows: enlarging the samples from one population of cells, or rats (or of humans) to another may radically change the response (to a therapy, say), a major experimental and theoretical challenge. Only the “control” (the normal cell, or rat, used as control), an unknown notion in physics, can help us understand the significance of a variation, which is biological variability. And I want to insist that variability, in biology, is not noise: it is at the origin of diversity and therefore of the biological resilience of an individual, a population or a species – and that this takes place even in a population with a small number of individuals: even in a population of a few thousands, individual diversity contributes to evolutionary stability.

Which mathematical instruments should we use, or create, starting with contemporary mathematics – that is to say, going beyond mere systems of (at best non-linear) equations, and statistical methods invented at the end of the 1800s? When Connes proposed non-commutative geometry he stood on the shoulders of early 1900s giants. A highly refined theoretical work then transferred the problem of quantum measure to Heisenberg’s matrix calculus, correlated with Weyl’s algebras and Hilbert’s spatial continua, both used by Schrödinger for his equation. As in relativity theory, or perhaps even more so, the problem of measure had produced an imposing theoretical edifice. This is certainly not the case in biology, where practically no theory, as far as I know, accompanies or guides extremely stringent experimental protocols, whose originality and rigour are truly astounding for the theorist who happens to visit the laboratory.

In short, I believe that it is necessary to first clarify what “to measure” means before being able to imagine a process of co-construction of mathematics and biology in a way vaguely comparable to what took place between mathematics and physics in the last four centuries. The physicalist who denies the existence of a properly biological problem, or the Pythagorean

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who claims that “number is already there”, should look elsewhere. To associate a number with five stones, six roars or five fingers, i.e. to build an invariant, is a long historical process. To associate it with a physical or biological process is a task which lies at the heart of experimental work, and represents a major theoretical challenge, in biology even more than in physics.

Conclusions on Zalamea’s Book

14.3.2. For mathematicians, logical axioms delimit a playground. But which game are we going to play next?

7.4.1. Desire, and the resistance of the object, are what mathematicians ordinarily use to distinguish mathematics from logic.

7.5.1. Grothendieck is rather like the Freud of epistemology.
(Lochak, 2015)

I hope I have managed to give the reader an appreciation of how the immense shadow of Grothendieck dominates Zalamea’s book. A French mathematician, the son of internationalist revolutionaries, migrating throughout all political turmoils in Europe between the Russian revolution of 1905 and the Second World War, Grothendieck comes to France when twelve years old, while the latter war was raging. He first lived with his mother, and then in hiding. His life is as original as his mathematics (see Lochak 2015). Without going into the - mostly dramatic - details of the first, it is interesting to note how Grothendieck is the only one of eleven French winners of a Field Medal, who have had their university studies in France, to have neither studied nor taught at the ENS in Paris, yet another touch of originality.

Following Grothendieck, Zalamea’s book gives priority to the structures of mathematics, to their transformations and deformations, and to the construction of meaningful

invariants. Taking this focus on structures, invariants and transformations as the way to do philosophy of mathematics – the philosophical sheafication I mentioned above – we move away from set theoretical, logicist and formalist absolutes (still grounded on the myth of the “discrete” and the “finite” as absolutes) programmatically outside of the world.

We should however add that Grothendieck’s work goes beyond these speculations on symmetries, invariants, and transformations. He had an exquisitely refined sense of the “purity” of a mathematical definition. He was able to avoid, arguably as no mathematician before him could, every “contingency” in the structures and proofs he proposed. All his notions intrinsically encapsulate, so to speak, the maximal invariance of a concept, to the extent that there is no need to prove it, by identifying the adequate transformations: they are intrinsic to the definitions¹².

Grothendieck’s approach unifies remote constructions in mathematics, by proposing invariants which are surprisingly shared by groups, topological spaces, manifolds of different sorts (differential, geometric ...), and by constructing, as “bridging” notions, new mathematical structures. It is more than a unification by generality, as the new objects proposed have an autonomous, robust and profound mathematical structuring. This allows to “circulate” in mathematics and to propose and transfer common mathematical meaning to apparently unrelated mathematical constructions. As Grothendieck observed, sheaves on suitably changing sites allow the circulation between continuous and discrete structures – beyond the “the founding aporia” of mathematics, to put it in Thom’s terms.

As Zalamea’s book reminds us with regard to physics, yet pushing beyond Zalamea’s arguments, it seems to me that the

12 A typical example is the notion of “étale topology”. It is defined on a category as a category, whose objects are morphisms on which schemes act (as morphisms): the topology thus is given in a relational way, which forces its right level of invariance. The notion of Topos as well is given in a “category-theoretic” way: these are sheaves on sites (a small category with a covering) .

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foundation of mathematics must take nourishment from the dialogue with the theoretical foundations of other disciplines. Not only in the dimension of historical analysis, but also in the positive work of scientific creation, where epistemology becomes entangled with the analysis of the construction of knowledge. This construction is the result of a protensive gesture which organizes the world, rich with desire for (knowledge of) the real and constitutive of the mathematical object through which it can be made intelligible; a real which resists and channels mathematical invention, together with its history. The analysis of this protensive gesture, and of its historicity, is part of epistemological reflection, qua analysis of a construction in fieri. The wandering of mathematical work beyond any relation with the natural sciences is yet an essential component of this construction, even more so if it gives rise to new spaces for creation, new correlations and abstract structures - like Set or a new category of pre-sheaves. The mistake is to take one of these creations and "put it back", as ultimate foundation, as a kind of Cantorian paradise outside the world. In doing so, one loses the meaning of the whole edifice, a network of relations of intelligibility, by absurdly turning it upside down and making it stand on (perhaps unidimensional) feet of clay. I am not here insisting on the exigency of "foundations" as locus of certainty, but rather on the necessity of the analysis of conceptual and cognitive roots, of structures of sense as correlations, tracing their constitutive and historical path (broadly construed, as to include its pre-human dimension). This project is far from pursuing those "unshakable certainties" sought by Hilbert in a time of great non-Euclidean uncertainties: on the contrary, there is nothing more uncertain than the cognitive foundations of mathematics - as uncertain as any biological or pre-human dynamics, as uncertain as a physical measure. However, drawing upon a plurality of correlations of knowledge, an historical epistemology of the interface between disciplines construes them as mutually supportive, as epistemological and epistemic webs: networks of meaning where the meaning of one helps us understand and constitute the other. An

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epistemology, moreover, that helps us discern, in an original, critical and ever-renewed way, the road to be built ahead, which is what matters most.

Grothendieck's unifying methodology, within mathematics, based on the construction of new and often complex deep structures, is also a remarkable example within the foundational analysis and the practice of other disciplines: reduction, say, rarely applies, while unification by new and difficult theories marked the growth of science.¹³ Science is not the progressive occupation of the real by known tools, in a sort of fear of the novelty, but the difficult construction of new theoretical frames, objects and structures for thought, conceptual bridges or even enlightening dualities, such the specificity of the biological vs. the genericity of the inert, with its major consequences for a close analysis of measurement, as suggested above.

My analysis has been inevitably superficial and incomplete; even Zalamea's large book is incomplete when it comes to the richness of contemporary mathematical invention. Zalamea's style, informal and philosophical, may irritate some readers, due to what could be considered as frequent flights of rhetorical fancy. Personally, I find it an extremely efficacious way to express the enthusiasm that such mathematical abundance deserves. As for rigour, when it comes to those fields in which I can claim some technical competence (Types, Categories and Topos, ... Girard, Lawvere...) it all seemed to me to be presented in a coherent and pertinent way, within the limits imposed by the limited space dedicated to the numerous themes transversally touched by Zalamea, who demonstrates an outstanding breadth of knowledge.

I would like, finally, to commend the two associated publishing houses that published this volume: Urbanomic and Sequence Press. In this as in other publications – as for example

13 Newton unified Galilean falling apples and planetary movements, by inventing brand new mathematics and theories. Similarly, Boltzmann unified mechanics and thermodynamics at the asymptotic limit of the ergodic hypothesis and the thermodynamic integral. Connes aims at the unification of quantum and relativistic fields by a reinvention of (differential) geometry

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the forthcoming English retranslation of Châtelet's book (an extremely hard work as Cavazzini, who recently translated it into Italian, knows all too well) – they certainly seem to favour the creation of a critical space, by promoting originality, and offering an alternative to debates as well-established as they are sclerotized in an oscillation between this or that Scylla and Charybdis, even when the latter approach would promise immediate success and, therefore, an high Impact Factor – a factor that is having a very negative impact on science (Longo 2014).

Acknowledgements

I would like to thank Fabio Gironi, for his careful and patient translation, and Robin Mackay, who for a long time has followed, with great acuity, my philosophical speculations. Andrea Maffei and Olivia Caramello made a competent reading of, and many comments to, a draft of this essay, still highly incomplete in comparison to the mathematics they master. I would also like to thank Sara Negri, Sara Campanella and Sara Franceschelli for their critical observations. Sara (Longo) has helped me understand the movement from Francastel to Arasse in the construction of a “point of view” in art theory, so close to its construction in the sciences.

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Answer to Giuseppe Longo

Synthetic Philosophy of Mathematics and Natural Sciences

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TO BEGIN WITH, I MUST THANK Longo for his unusual generosity. It is extremely rare for someone to write such a lengthy commentary, while correctly highlighting a monograph's central ideas and, on top of that, to place them within a myriad of alternative mathematical considerations. And if that wasn't enough, Longo's subtle, critical and analytic scrutiny of what concerns my text *Synthetic Philosophy of Contemporary Mathematics* extends to the scope of a synthetic vision that encompasses the mathematics of biology. In many senses, Longo's remarks deserve to be understood then really as an appendix to my book which *opens* it, densely and broadly, to both the natural and mathematical worlds.

From Longo's many ideas, I would like to concentrate here on five broad themes that the wise Italian (yes: wise men are still among us!) emphasizes throughout his commentary: (1) The fundamental role played by the notions of *perspectivity*, freedom and purity in contemporary mathematics; (2) the *pendular equilibrium* required between processes of synthesis and analysis, between genericity and specificity, for the progress of knowledge; (3) the importance of the notion of action, both technically and epistemologically, for a thorough understanding of our world; (4) an emphasis on human *multidimensionality*, friction and contingency within the mathematical domain; (5) the importance of *gesture* and of 'metaphorization' for

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mathematical thinking. In what follows, I shall tackle these topics in order, and proceed in proximity with some of the various (quasi musical) variations in Longo's text.

1. Longo recognizes the central role that Grothendieck's plays in my monograph. Times have changed, and what Hilbert once was to Lautman, Grothendieck must be to us. Sixty years after his first great works, it is time that the community of philosophers of mathematics awakens. Longo highlights three great tendencies that Grothendieck's work has consolidated into pillars of contemporary mathematical thought. First of all, we have the construction of a relative mathematics, where a sophisticated *network of projections* allows us to couple, on the one side, mathematical structures and, on the other, explain the *back-and-forth* between these structures and the world. In Longo's words, "we only see perspectives, albeit coherent and profound ones; points of view on fragments of the world, we organize and make accessible small corners of it". Thus, the geometric network of perspectives according to Grothendieck is bound to a fascinating reincarnation of the idea of *freedom*, of *purity*; as Longo indicates: "Grothendieck proposed notions and structures of an intrinsic mathematical 'purity' free from any contingency requiring proof of invariance". By moving away from a framework of specific relations, and delving into the general, so-called *free objects* may in effect be projected in the whole categorical context that envelops them. For Longo, the iterated process of amplification, generalization, transformation and projection "is legitimate because, in this theoretical back-and-forth, our friction and action upon the world are real: the world resists, it says 'no', and channels our epistemic praxis, which is of an eminently *organizational* character, and it is always *active*". In this way projectivity, freedom, and purity become the ideal conditions for the emergence of mathematical activity, something that we could

directly relate to the mathematician's very *creativity*. In fact, abstraction, for Grothendieck, far from constituting a gratuitous act of ascent, is the very ground of invention. Proud to have provided over a thousand new definitions in mathematics, Grothendieck understands the realm of elevation, of projectivity, of purity, as the natural setting to become *exactly free*, distanced from the constraints of circumstance. Far from being a mere gratuitous artifice, abstraction thus becomes the *natural* environment so as to proceed without shackles. The rising tide that dissolves the nutshell turns out to be much more natural than the overwhelming and gimmicky hammer which shatters it into pieces. Grothendieck knows and declares himself heir to Galois: the V function that incorporates *all* root differences, and through which each one of them is represented (allowing the introduction of the Galois group transformations — in the original manuscript, the creative highpoint of the young genius) is an example of projectivity, freedom, and purity that Grothendieck has extrapolated to his fabulous techniques in schemas, topoi, and motifs.

2. The main objective of my book *Synthetic Philosophy of Contemporary Mathematics* consists in trying to open the dialog between mathematical philosophy and alternative perspectives, which are *non-dominant* in the field. I orient myself towards non-standard themes and processes, described Longo's terms as: "The realm of a plurality of Categories", "the constitution of concepts and structures", "a geometrical inspiration" which "makes us appreciate the structural sense of mathematical construction", a fight against a "ruinous disintegration of sense" proper of analytical perspectives, a study of "the difficult notion of border", an appraisal of "organizational gestures of correlated mathematical universes, correlated by a web of transformations". The established, constant task is that of seriously reading *Alice Through the Looking-*

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Glass and of studying thus the *obverse* of concepts. The *opening* towards contemporary mathematics, synthesis, category theory, sheaf intuitionist logic, negativity (non-commutativity), deformation, Gromov's cloud — forms that are counterpoised to those of classical and modern mathematics: analysis, set-theory, classical logic, positivity, heirarchization, Hilbert's tree — encourages the exploration of underlooked *counterparts* in the history of philosophy and mathematics. The *initial task* consists then in *configuring the pendulum* of analysis and synthesis so that a thorough dialectic can be established between opposites. In what concerns my monograph, as Longo correctly notes, this is done by underlining diverse back-and-forths that make up a *general Galois theory* with multiple levels of linkage: languages and geometries, proof and structural synthesis analysis, symmetries and ruptures, specificities and genericities, 'smoothnesses' and frictions, universalization and contingency, cosmos and humanity. Now, once the initial task of *situating* alternative perspectives is overcome, the truly important task in the future will be that of creating entire new branches of thought bound to the *mediation* of analysis and synthesis. With Roberto Perry, we call horosis (horotic transformation) this mediation (from *horos*, border), and our great project for the next five years (2015-2020) consists in providing *a systematic organization of the mathematical, philosophical and artistic constitution of horosis in the 19th and 20th Centuries*. Just to give one example of the enormous richness at stake, if the Greek tension between the One and the Many becomes incarnated in Cantor's definition of the set as that which is *analytically one and many at the same time* (*ramified tree*: level $n+1$ = One = set; level n = Many = elements) and also in category theory through the motto (Yoneda's lemma) that objects are in reality their representable functors (synthetically one and many at the same time: an object is identified with the crown or aura of its morphisms), a similar situation should

obtain in turn for the horotic understanding of the One and the Many. It is worth mentioning that the *axioms* of set-theory (particularly the axioms of separation, pairs, union, and powerset) are immediate consequences of the analytic definition of the set, just as the *axioms* of category theory are the immediate consequences of the synthetic view of representable functors. Once we obtain a *well defined metaphor* of the objects pertaining to horosis (neighborhood, borders, etc.), the natural axioms for a general border theory (much more fundamental than Thom's cobordism) should emerge, as the new Century will quite probably demand. Just to give one additional variation on this subject — as suggested by Longo when referring to Gödel's incompleteness theorem, orienting us towards searching “*only* by looking closely to its proof” — it is surprising how the first paragraphs of Gödel's Doctoral Thesis (1929-1930), in parallel to his completeness theory (for first-order classical logic), already *explicitly* indicate the possibility of his incompleteness theorem (for arithmetic) for *natural intuitionist* reasons. There have been many betrayals of Gödel throughout the twentieth Century (perhaps only Georg Kreisel has understood him in depth) and the *disappearance* (imputable to Hahn) of the initial paragraphs of the Thesis in the later article (1930) is one of the many moments in which a *fully triadic* Gödel (*at the same time* intuitionist, logicist and formalist) has been conveniently reduced and simplified by questionable ‘philosophers’ of mathematics. Gödel's extraordinary *phantasmagoria* (magnificently studied by Pierre Cassou-Noguès) lives in fact within an *essential border* between saturation (completion) and compression (recursion, ground of incompleteness), classicism and intuitionism, linguistic minimization ($V=L, c \aleph_1$) and harmonic maximization ($\text{Compl}(V), c = \aleph_2$). In fact, all of Gödel's work can be understood as a *fascinating incarnation of the horos*. Gödel's pendulum, oscillating between satisfiability and refutability, numeralization

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and representation, ennumerability and transfinitude, classical and intuitionist translations, analytic irradiation and phenomenological irradiation, and between the living and the dead, shows us the complexity of a character and of an oeuvre that can only be understood in depth by *shattering* our habitual categories and prejudices. In this sense, perhaps only novel ways of doing philosophy will be able to understand Gödel's approach in the twenty-first century (remember his famous motto: "Philosophy today is, at best, at the point where Babylonian mathematics was").

3. An outstanding point in Longo's commentary concerns his subtle consideration of the place that *action* holds, both for processes of knowledge in general, and for mathematics in particular. For Longo, "science is not a testimony of, but an *action upon* the world, aimed at organizing it and giving meaning to it". In fact, action is indissolubly bound to the *projective exercise of reason* and to the *pendular sway of knowledge*. Action places us in warp-zones of relations with respect to 'something' (Peircean secondness) and constricts us to finding mediations that refine these warp-zones (Peircean thirdness). Longo highlights "the constitution of invariants that lies at the heart of the construction of (physic-mathematical) knowledge, in continuity with *action upon* the world, yet not in the world itself". Action imposes a *distance* — a constitutive element of intelligence, according to Aby Warburg: [t]he conscious creation of a distance between oneself and the exterior world may be considered as the foundational act of human civilization" (this is the famous first line from the *Introduction to the Mnemosyne Atlas* [1924-1929]) — from which originates, in Longo's words, "the mediation or interface between mathematics and the world". We find ourselves then in a fully relational domain, relative, projective, free, which of course takes us back to Grothendieck, but that is clearly expressed in

many past thinkers, from Novalis to Cassirer, through Peirce, Valery, Warburg, Florenski, Benjamin, and so many other modern masters, attentive as they were to exploring the relational networks of understanding and of sensibility. The analytical inquisitions, a thousand times futile, concerning the ontological and epistemological status of numbers and sets have little to do with the activity of mathematics on the world. Much more real and coherent are the investigations of the last decades (Petitot, Berthoz, Citti and Sarti, Longo, etc.) that highlight a *protogeometry* prior to number and to language in what concerns the essential acts of our understanding, something that for Longo is summarized in “a plurality of praxis from which to distill an invariant in memory and then produce (in language) number, in order to stabilize a concept resulting from a practical invariance with a long evolutionary history”. The *primordial protogeometry* of human imagination is very well expressed in some of the greatest works of 20th Century literary fiction, such Robert Musil’s *Man Without Qualities* (1921-1942), or Hermann Broch’s *The Sleepwalkers* (1930-1932). Broch, who studied with Gödel at the University of Vienna, at the end of the 1920s, explains how “the internal relations of mathematics are projected into a logical sphere and then can be mirrored in turn as reflexive projections, projections of projections; it is also possible to imagine an infinite multiplicity of ‘relations of relations’ between the mathematical and logical spheres” (Manuscript, “On Syntactical and Cognitive Units”, not dated). The active, projective, and relational character of mathematics (and of its logical sub-fragments) *forces a continuous knowledge, plastic, approximate*, and is at the same time linked to the fact that no real measure in the world is punctual, governed by classical or entirely determined laws — as Longo indicates, “*measure necessarily is, because of physical principles, an interval*”. The natural logical of continuity, of plasticity, of intervals must be in truth topological.

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The logic of Peirce's existential graphs, intuitionist logic, the logic of complex variables, categorical logic, and the logic of sheaves — topics extensively examined in my *Synthetic Philosophy of Contemporary Mathematics* — become thus new (topo)logical pillars for the understanding of a multivalent, multidimensional, complex reality. Parallel to this, Longo highlights other trends in the theory of computation, in the compression of neuronal organizations, and in interfaces with biology, all of which would require important advances towards a sort of *logical smoothening* of the kind that analytic philosophy utterly ignores.

4. One of the most beautiful emphases in Longo's remarks is to be found in what we may call his *ode to humanity*. The Italian wise man unleashes his poetic drive in various moments, as his true *love* for human intelligence surges forth. Longo teaches us that mathematics is especially beautiful owing precisely to the profound philosophical obstacles it must overcome: its friction with the world, its contingency, its historical evolution, its swaying creativity. Far from indulging in those artificial dissections and false dialogs common among the sect of so-called 'analytic' 'philosophers' of mathematics, Longo incarnates in the human — in an almost Nietzschean ode to the most human — the extraordinary force of mathematical imagination. We face the exact opposite situation to that found in the *spectacular countersense* offered in the *Oxford Handbook of Philosophy of Mathematics and Logic* (2005), where *not a single mention of real mathematics appears*, and where man, history, the world, creativity, beauty and metaphysics disappear under the arid scalpels of those surgeons who have sought to eliminate, in their disparate linguistic investigations, the soul and heart of deep mathematical thought (Galois, Riemann, Poincaré, Grothendieck, Lawvere, Connes, Gromov, etc). For Longo, "[a] first way of being in the world and of constructing

the intelligibility of the world with other disciplines, indeed is to appreciate its ‘dimensionality’, in the entire semantic richness of the world”. A *true comprehension* of the semantic multidimensionality of the world and, in particular, of the spatial and structural multidimensionality of mathematics, is without doubt one of the greatest tasks facing the twenty-first century. In order to attune itself to its outside, philosophy must escape from Babylonian times (Gödel); it must become open to the myriad of fabulous mathematical techniques invented in the twentieth Century, *liberate* its conceptual and imaginative flight, and project its inventive arsenal towards the thousand forms in which contemporary culture shapes and submerges us. In times of unparalleled scientific invention, but also of fascinating artistic explorations — science and art being both amputated under analytic perspectives — we *demand* new odes to humanity, as that delivered to us by Longo. According to Longo, the process of invention “assumes an historicity that serves to highlight the sense and the relationship of mathematics vis-à-vis the real: mathematics (where it does work) and has meaning because it is constituted through a human — all too human — praxis”. And he reiterates: “I would go as far as to say that mathematics helps us to construct objectivity precisely *because* it is contingent, the result of the ‘history’ of a real friction with the world”. The extraordinary accuracy of Longo’s argument incites us to marvel at what has been called, in manifold ways, the *miracle* of mathematics: its *horotic status* between the necessary and contingent, the ideal and real, the theoretical and the applicable. The force behind Socratic *surprise*, and the true love for mathematical philosophy, lies precisely at the *edge of this abyss*. The best definition of mathematics is possibly found in variations around this Gödelian *border*, so characteristic, between the universal and the particular, between what Longo calls “the *genericity* of objects and the *specificity* of their trajectories”. Far from the

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allegedly deductive character that defines mathematics (Russell's banal definition), it is rather the *forms of deduction* it deploys (the *interior* of proofs, according to Longo) and its forms of retroduction (Peircean *abduction*) that are fundamental. In truth, one of the most provocative contemporary investigations on mathematical foundations, Voevodsky's homotopy type theory (HoTT, 2006-present), seriously considers the idea of observing the interior of proof procedures, and proposes to take as primitive the trajectories of objects, *before* the objects themselves. We have here in truth another sophisticated expression of a *subjacent protogeometry*, one which could transform, within the next decade, our understanding of the mathematical world.

5. The creative impulse of metaphors in mathematics ought never to be underestimated. Galois' *theory of ambiguity*, where the indiscernibility (obstruction) of the roots from the base field becomes conceptually *inverted*, and opens the way to its transformations (transit) codified in the *Galois group*; Riemann's negative harmony, where the multivalence (obstruction) in the logarithmic function of a complex variable becomes in turn inverted and opens the way to its extension (transit) over the relevant Riemann surface; Poincaré's structural networks, where Poincaré's sphere serves as a counterexample (obstruction) to the attempt of characterizing homologically the sphere $S^3 \subseteq \mathbb{R}^4$ and gives way to the possibility (transit) of characterizing it homotopically (Poincaré's conjecture), these are all examples of great 'metaphorizations' that combine *general imaginative flight* and precise, particular techniques. Bound to the power of metaphor lies the primordial dominion of the mathematical *gesture*, oftentimes underlined by Longo, in reference to "that masterpiece that is Châtelet's *Les Enjeux du Mobile*", an appraisal with regards to which we are in full agreement. We must note here the excep-

tional enterprise advanced in this moment by Guerino Mazzola who, after his monumental *The Topos of Music* (2002), has opened a gigantic, alternative path in his *La verite du beau dans la musique* (2007). We are dealing with nothing less than the attempt to establish a thorough pendular sway — a Galois adjunction — between score and interpretation, where the study of interpretative gestures is realized through a sophisticated homotopy theory within very general categorical frames. With bravery, by means of the anti-postmodern motto “the truth of the beautiful”, Mazzola expresses his vocation to approach the archetypes of musical invention.

6. It is about time for the philosophy of mathematics to begin to redraw the map of the great contributions in the discipline bestowed to us in the 20th Century where, it must be said, the place of France acquires an ever-growing projection. Lautman, Châtelet, Petitot, or Badiou, just to mention a few particularly original views, go incomparably farther than their English-speaking counterparts, although the latter go by the more “popular” names of Quine, Putnam, Field or Maddy. The reason is simple: the former observe mathematics in action (Hilbert, Riemann, Grassmann, Hamilton, Thom, Ehresmann, Cohen, Grothendieck, as outstanding figures), while the latter only observe fragments from logic and crosslink references, associated to secondary literature. The example of Giuseppe Longo, so attentive to the Italian and French traditions in the philosophy of science, as well as the technical advances achieved in recursion theory and in the biological work of his English-speaking colleagues, must serve as a guide to shatter comfortable frameworks. Following Benjamin’s typography in *Passages de Paris*, the philosophy of mathematics must “Awaken”.

Reviews

Book Review

Christopher Norris, *Derrida, Badiou and the Formal Imperative*

London: Continuum, 2012.

197+vii pages

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I

DO “WE” NEED, TODAY, A RAP-
prochement between analytic
and “continental” philosophy?

If so, from what philosophical and critical imperatives does such a need arise, and to what kinds of actual problems, political and social as well as theoretical, should it respond? Might giving a critical response to contemporary social and political problems require remapping familiar division lines between the analytic and continental traditions, sometimes in ways that will initially appear surprising and unfamiliar to those convinced of the legitimacy of the old traditional boundaries? To what extent might this require a creative rethinking of the boundaries and structural implications of formalism and of the kind of formalizing project so characteristic of one strand of the analytic tradition? And who might be the “we” (mentioned in the first question) that could

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emerge from such a critical remapping of methodological and thematic territories, as inheritors of the legacy of both traditions in twentieth century philosophy and practitioners of a new kind of philosophy drawing on the best resources of both? These are some of the questions raised by Christopher Norris's useful and potentially important book, *Derrida, Badiou and the Formal Imperative*. In particular, Norris makes the heterodox but ultimately convincing argument that the work of two of the most important contemporary and recent "continental" philosophers, Jacques Derrida and Alain Badiou, responds in both cases to a "formal" imperative by developing the implications of classical formal and logical structures to the "breaking point" of structurally inherent aporias and paradoxes. It is at this structural breaking point that the possibility of transformative structural and political change opens up, and its identification and location in strict and rigorous accordance with the canons of traditional bivalent logic and with an unflinchingly realist ontology is therefore a cardinal task for contemporary philosophy in a critical mode.

Given contemporary patterns of reception and widespread interpretative assumptions, this suggestion will seem, to many, incongruous at best. For example, those who are convinced on the basis of hearsay or misreading that Derrida's deconstruction aims simply to renounce or abandon logical rigor or formal approaches in the service of its much-cited goal of "overturning" traditional binary oppositions will find the suggestion of an underlying formal/logical register central to deconstructive methods initially hard to swallow. Similarly, those inclined to relegate Derrida's project to the extra-philosophical domain of literary criticism or to regard it (somewhat in the manner of Foucault's now-classic polemic with Derrida) as an empty and politically ineffectual practice of infinitely deferred textual "reading" will be surprised at the claim that deconstruction is in fact largely an application of the critical and philosophical implications of traditional logic. Norris provides, however, a detailed and convincing argument for both claims, citing both Derrida's own avowals

of his fidelity to the consequences of classical logic and rationality and essential internal aspects of deconstructive methods and results. For example, in his deconstructive readings of classical philosophers such as Rousseau as well as twentieth-century ones such as Saussure and Austin, Derrida is centrally concerned, as Norris shows, to apply the bivalent logic of oppositions such as those between speech and writing, syntax and semantics, and meaning and force up to the point at which the text itself suggests inherent and structurally determined aporias or incoherencies in the possible application of these concepts. In practice, this demonstration operates at specific textual sites. But it has a more general structure that can be extracted from these particular readings and is itself determined by some of the most important results of formal reflection in the twentieth century. For instance, as Graham Priest and others have argued, Derrida's important neologisms *différance* and *trace* are structurally based in formally tractable limit-structures and structurally necessary contradictions related closely to the formal/metalogical method of diagonalization.¹ And the central deconstructive category of the "undecidable" is itself based explicitly and directly on Gödel's formal argument for the necessary existence of undecidable sentences (i.e. well-formed sentences that cannot be either proven or refuted) in formal systems of sufficient complexity, which is at the root of his two "incompleteness" theorems.²

This link between rigorously formal reasoning in accordance with classical logic and the demonstration of inherent points of aporia and paradox which call for (and make possible) fundamental structural change is even more evident in the case of Badiou. Norris takes Badiou's project in *Being and Event* and *Logics of Worlds* as a methodological inspiration and leading example of a kind of interpretive/critical practice that,

1 E.g. Priest, "Derrida and Self-Reference," *Australasian Journal of Philosophy* 72 (1994), 103-111 and *Beyond the Limits of Thought* (second edition, New York: Oxford U. Press, 2002), esp. 235-246.

2 Paul Livingston, "Derrida and Formal Logic: Formalizing the Undecidable," *Derrida Today* 3:2 (2010), 221-39.

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in accordance with the formal results of analytic philosophy, could offer a particularly useful model for new philosophical methods in the future. In *Being and Event*, Badiou identifies ontology with mathematics in the form of the standard Zermelo-Fraenkel axiomatization of set theory. The point of this bold identification for Badiou, though, is not primarily to provide a reductive metaphysics or “totalized” ontology, but rather rigorously to consider the complex relationship between such stable structure and that which contests and holds the possibility of radically transforming it. Thus Badiou applies some of the main results of twentieth-century investigation into set theory to the question of the relationship between ontology, thus conceived, and the structure and possibility of what he calls the “event,” a kind of discontinuous interruption that, when its consequences are followed out rigorously by what Badiou theorizes as the procedure of a “faithful” subject, can produce radical and fundamental changes in the organizing structure of an underlying situation. Specifically, Badiou applies the results of set theoretical consideration of the structure of the multiply infinite hierarchy of transfinite sets discovered by Cantor, including the demonstrable points of impasse and near-paradox inherent to it. By doing this, he can show, as Norris puts it, how a formal passage through these points turns “paradox into concept,” thereby creating new structures and forms of organization in a completely novel but nevertheless formally determined way. In the domain of politics, such a procedure can, as Badiou argues, lead to the phenomenal visibility of a formerly invisible or “indiscernible” subset of the existing situation. It is this work of tracing the indiscernible, which Badiou himself identifies (in a 2005 eulogy for Derrida as well as in *Logics of Worlds*) with Derrida’s deconstructive procedure, that itself can result, under particular structurally determined circumstances, in a radical transformation in the existing “transcendental” or underlying structure of a political community or situation.³

3 Badiou, “Jacques Derrida,” in *Pocket Pantheon* (London: Verso, 2008), and *Logics of Worlds*, trans. Alberto Toscano (London: Continuum, 2009), esp. 545–46.

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As Norris argues, both Badiou and Derrida thus centrally exploit the consequences of classical formal and logical structures which, when pushed to their aporetic limits, formally demonstrate the real possibilities of transformation inherent in the actual logical structures of existing situations. Since these formal structures have been most completely and rigorously worked out within the tradition of analytic philosophy developing from Frege and Russell or by logicians and mathematicians whose work is closely related to it, it is reasonable to expect, as Norris argues, that an appreciation of the significance of formalism in the work of these two “continental” thinkers could provide a useful and appropriate “way in” to their thought for many analytics. The formal and structural basis of this demonstration in both cases, as Norris argues, turns on the actual underlying existence and real effectiveness of the relevant formalisms in structuring actual ontological and political (and not merely textual or epistemic) domains. Accordingly, it is essential to both philosophers, as Norris demonstrates, that the relevant logical structures are not constrained, in anti-realist, verificationist, conventionalist or constructivist fashion, by the contingent or empirical limits of human knowledge, conventionally structured practices, or communally determined assertibility conditions. Thus, Norris argues that both philosophers must be taken as realists in the sense of Dummett’s powerful logically based framework for discussing disputes between realism and anti-realism in various domains.⁴ On this framework, the realist position in any particular domain is the one that upholds the unrestricted application of the principle of bivalence. According to this principle, each proposition in the domain is determinately true or false, quite independently of our ability to know or verify (or our community’s tendency to assert) its truth or falsehood. Because Badiou and Derrida both rest central aspects of their arguments on the ultimate consequences of the application of such a classical, bivalent logic, both must,

4 “Realism” in *Truth and Other Enigmas* (London: Duckworth, 1978), 145–165; see also Dummett’s preface to *Truth and Other Enigmas*.

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as Norris argues, be understood as applying a steadfastly realist position, and thus sharply distinguished from those thinkers, both analytic and “continental”, who have sought to reduce truth to verifiable truth, warranted assertibility, or personal-subjective evidence.

This strand of Norris’s argument provides, once more, an important and refreshing corrective against presumptive interpretations of recent continental philosophy, and of Derrida in particular, that are prevalent in analytic and continental circles alike. On the one hand, for instance, Norris convincingly disputes, on this basis, Lee Braver’s interpretation of Derrida, in his detailed *A Thing of this World*, as a leading example of what Braver sees as a nearly monolithic regime of “continental anti-realism” since Kant (p. 3).⁵ On the other, by identifying the actual realist orientation underlying Derrida and Badiou’s projects, Norris can sharply distinguish them from various analytic philosophers (including, for example, Putnam in his “internal realist stage,” Kripke in his communitarian solution to the rule-following problem he finds in Wittgenstein, Quine in his arguments for “ontological relativity,” and Dummett himself) who have argued for anti-realist positions over the past several decades. From this perspective, quite to the contrary of the usual stereotype of the sloppiness and unclarity of continental philosophy, Derrida and Badiou are, as Norris argues, in certain respects more rigorous in their application of formal and logical structures, or at least in their tracing out of the consequences of a formally based realism, than are these paradigmatic analytic philosophers.

Moreover, as Norris demonstrates, the faithful development of these consequences provides powerful arguments against the kinds of communitarian, conventionalist or anthropologicistic assumptions that are arguably in many ways characteristic of widespread culturally dominant practices and

5 Braver, *A Thing of This World: A History of Continental Anti-Realism* (Northwestern U. Press, 2007). Braver has since discussed what he calls “transgressive realism” in continental philosophy in “A Brief History of Continental Realism,” *Continental Philosophy Review*, 45:2 (2012), 261-289.

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conceptions of collective life and behavior today.⁶ In the case of Badiou, in particular, the development of the implications of a rigorous bivalent logic provides a far-ranging critique of contemporary liberal-democratic practices and forms of social organization, and of the usually presumed forms of “ethical” thought and behavior that routinely accompany them. This is not only because, as Badiou argues and Norris emphasizes, the official rhetoric of democracy and human rights often operates as a “smokescreen” (p.62) for the massive structural inequalities and disparities of wealth and power that characterize the actual contemporary global situation, but also in that the liberal-democratic legitimation of this situation often turns on a limitative pragmatism or culturalist communitarianism that sees linguistically shaped and conventionally determined “social practices” as the ultimate horizon of social reality. Against this, Badiou points the way to a transformed politics capable of resisting what he calls, in the opening pages of *Logics of Worlds*, the “axiomatic” of prevailing contemporary belief, according to which “there are only bodies and languages,” and opens up the possibility of an alternative set of transformative subjective practices suspended, as Badiou argues, from the structurally demonstrable point of the possibility of verification-transcendent and culturally independent truths.⁷

II

Over the past 30 years or more, there have been many attempts of different varieties to bring representatives of analytic and continental philosophy closer together. These attempts are laudable, since there is no good philosophical or methodological motivation for the division between (what are treated as) the two “types” of philosophy to begin with, and since there is no major area of philosophical concern that has not been deeply and illuminatingly discussed by figures

⁶ See especially chapter 2.

⁷ *Logics of Worlds*, 2-8.

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on both sides of the divide in the twentieth century. Today there is plentiful evidence that the attitudes of many have changed since the “bad old days” of the 1960s when partisans of each side routinely dismissed the other without argument, and that the attitudes and assumptions underlying divisive episodes such as Carnap’s attack on Heidegger’s discussion of the Nothing in “What is Metaphysics?” and the problematic polemic between Searle and Derrida in the early 1970s no longer characterize the state of the discussion between the two sides.⁸ Nevertheless, the division persists as a deeply entrenched sociological fact of life in academic philosophy departments in the U.S. and elsewhere.⁹ Especially in view of what some have seen as the contemporary exhaustion of the original projects and philosophical motivations of the project of analytic philosophy, it is reasonable to think that a successful revitalization of philosophy in the twenty-first century will depend largely upon the development of new modes of analysis, interpretation and argumentation that recognizably continue important strands of both traditions as they have been practiced in the twentieth century. But if the hope for a genuine overcoming of the divide is to be motivated by more than a bland ecumenicalism or a general preference for unity over dissent, it will also have to develop what are identifiable as genuine rather than merely “academic” areas of critical philosophical concern. These plausibly include, among other things, those actual problems of a “social,” “ideological,” or “political” nature that most deeply characterize the organization of intersubjective life and practices around the planet today.

8 For a vivid portrayal of the marginalization of continental philosophy and themes in these “bad old days” see, e.g., Hubert Dreyfus’s recent Dewey lecture, “Standing up to Analytic Philosophy and Artificial Intelligence at MIT in the Sixties,” delivered at the Pacific Division APA meeting on March 28, 2013.

9 For a convincing argument that the divide between analytic and continental philosophy as it exists today is merely sociological in character, see William Blattner, “Some Thoughts About ‘Analytic’ and ‘Continental’ Philosophy,” on-line at: <http://www9.georgetown.edu/faculty/blattnew/contanalytic.html>.

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Early in his book, Norris points to the need to preserve a sense of unresolved problems in projects that attempt jointly to inherit the best outcomes of the two twentieth-century “traditions”:

My argument here is that the analytic/continental ‘dialogue’ - if that is the right term, with its somewhat too placid or emollient character - had best keep a sense of those unresolved issues that still have the power to strike sparks in any mooted convergence of the twain. It stands to benefit less through an outlook of benign ecumenism or a flattening-out of troublesome differences than by focusing on just those points where a meeting of the two philosophical cultures can be seen to generate conflicts or at any rate symptomatic tensions of precept and practice. (p. 2)

From this perspective, such contemporary divide-crossing interpretive projects as “California” Heideggerianism or “Pittsburgh” neo-Hegelianism, though certainly steps in the right direction, may be seen (though Norris does not say so explicitly) as not going far enough. For although they often suggest grounds of convergence on purported results of theory between pairs of figures such as Heidegger and Davidson, or Sellars and Hegel, these projects do not always foreground the equally deep aspects of tension and downright aporia that also characterize the projects of all of these philosophers, both individually and in relation to one another. More obviously, projects in the spirit of Richard Rorty’s neo-pragmatist attempts at synthesis, and other “postmodernist” or “end of philosophy” positions that see philosophical problems as illusory remnants of a classical tradition to be surpassed or left behind rather than engaged, seem unlikely to produce anything like a viable joint continuation of analytic and continental philosophy in their critical modalities. This is where, as Norris argues, the kind of formal approach represented, in different ways, by both Badiou and Derrida could prove especially useful. For the rigorous application of formalism that both philosophers make does not amount simply to the imposition of a pre-determined logical framework or a

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forcing of philosophical issues into the procrustean bed of a single, pre-existing type of analysis. Rather, in both cases, the application of formalism elicits and demonstrates the essential problems and paradoxes of the application of formalism at its own limits, including to the constitutive tensions and aporias that structure and run through the landscape of philosophical thought and argument today.

One of the immediate and salutary results of this application of reflective formal reasoning, as I have argued elsewhere, is to provide general terms in which large-scale and widely shared positions in recent philosophical thought, cross-cutting the usual analytic/continental divide, can be recognized and compared.¹⁰ This allows, in particular, for these positions to be elicited in their formal structure with respect to their most basic ontological or metaphysical commitments, and for widely shared orientations with respect to the underlying relation between thought and being to be identified and discussed. A useful model for this kind of work is provided, in particular, by Badiou's identification, in *Being and Event* and in *Briefings on Existence*, of what he identifies as three large-scale "orientations of thought".¹¹ Each orientation represents a specific position with respect to the underlying relation of thought and being, and the three can further be distinguished as positions with respect to the thinkability of the totality of the universe. Whereas the transcendent or onto-theological orientation sees the consistent thinkability of the whole as guaranteed by a transcendent absolute inaccessible to human cognition, constructivism is characterized by the attempt to delimit the totality from an accessible position simply outside it, and thereby to trace or delimit the boundaries of the thinkable in a regulative fashion. Both are to be sharply distinguished from Badiou's own "generic" orientation, which, applying the lessons of

10 See my *The Politics of Logic: Badiou, Wittgenstein, and the Consequences of Formalism*, especially chapters 1 and 10.

11 Badiou, *Briefings on Existence: A Short Treatise on Transitory Ontology*. Trans. Norman Madarasz (Albany, NY: SUNY Press, 2006), esp. 52–55, and *Being and Event*, 282–85.

set-theoretical exploration of Cantor's transfinite hierarchy, points (as we have seen) to the actual possibility for thought and action, under determined conditions, to break through any determined configuration of normative practice and belief by a subjective operation of force dependent upon a situation-transcendent truth.

Badiou's rigorous formally based identification and criticism of the constructivist orientation in *Being and Event*, though it is misleading in some respects (see section III below), provides, as Norris points out, useful terms for the discussion and critique of widely held contemporary commitments in both analytic and continental philosophy. In particular, recognizing the constructivist orientation as the one occupied by thinkers as diversely located as Kant, Russell, Rorty, Carnap, and Foucault allows the positions of these diverse thinkers of both "analytic" and "continental" persuasions to be identified on the level of the real point of their underlying and shared ontological commitment to a limitative or regulative use of the forms and categories of language and logic in demarcating the boundaries of knowledge and sense. This provides (as I have argued elsewhere) a useful corrective to currently popular but vague discussions of "correlationism" as an attitude privileging a kind of relationality of subjects and objects, or denying the possibility of thought having "access" to reality as it is "in itself."¹² By contrast with this, as Badiou demonstrates in *Being and Event*, the constructivist orientation can be rigorously modeled by reference to Gödel's development of a specific kind of model for the set-theoretical universe, V , in which the existence of power sets is strictly regulated by their submission to the boundaries of what can be named in a regularly defined (non-impredicative) language. As a formal consequence of this restriction, the generalized continuum hypothesis is demonstrably true in such a model, and the very existence of a "generic procedure" capable of transforming the situation by identifying what was formerly indiscernible is rendered structurally impossible.

12 Livingston, "Realism and the Infinite", *Speculations IV*, 99-107.

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By reference to these formally based facts, Badiou can thus argue rigorously that partisans of constructivism and (more broadly) critical anti-realists of various descriptions leave no room for the possibility of structural transformation in this sense, and thus that the various constructivist projects which have allied themselves to projects of sociopolitical critique and liberation since Kant will fail in these goals, given their inability to acknowledge that constitutive dimension of the universal (and the possibility of progress toward it) that Badiou calls “truths”. Just as importantly, however, it verifies that the answer to the political deadlock of the various forms of anti-realist, social-constructivist, anthropological, culturalist, “correlationist” and humanist thought which seem capable only of replicating the structure as well as the inherent contradictions of the dominant regime of liberal democratic capitalism is not to be found (as has been suggested) in the retreat to a pre-critical realism, for instance in the return to a Cartesian conception of mathematicized space as absolute, or in a mystifying Humean skepticism that affirms “pure contingency”.¹³ Rather, it is to be found in the kind of reflexive intensification of the critical problematic, beyond constructivism’s regulative strictures, which results when the structures of formalism are subjected immanent critique at the point of their own structurally inherent limits, and to which the methods of both deconstruction and Badiou’s own generic orientation rigorously point.

For these reasons and others, it appears that a development of the consequences of the “formal imperative” that Norris rightly identifies in Derrida and Badiou could prove uniquely useful in overcoming the continental/analytic divide and leading to a future practice (or set of practices) of philosophy more genuinely capable of addressing the real structural problems of the contemporary situation. But will it, in fact, do so, given the continued and frustratingly entrenched sociological reality of the analytic/continental distinction in academic

13 For both suggestions, see Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. Ray Brassier (London: Continuum, 2008).

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philosophy, and the apparent persistence kinds of mutual prejudice and stereotyping that continue to hold in place? As Norris trenchantly argues, given his extensive and accurate development of mathematical and set-theoretical results, Badiou is a philosopher who can easily be read by analytics, and given the way that his arguments offer to reconfigure key debates within the analytic tradition (including that between realism and anti-realism), he certainly should be. Whether Badiou will, in fact, be read by a significant number of analytic philosophers is, of course, a different question. The actual reception of Badiou's work in the U.S. over the last decade, it must be said, does not appear to offer much hope: since it began to be systematically translated into English (in the late 1990s) Badiou's work has in fact been almost exclusively received in the U.S. context by self-identified continentals rather than analytics. As Norris notes, this may result, not only from analytic philosophers' characteristic resistance to new and "radical" movements of thought, but also from the presumptive judgment that the kind of application that Badiou makes of formal results and structures to political and social questions is an obvious nonstarter or a category mistake at the outset. And the reception of Derrida in the "analytic" context is, of course, even more complex and vexed; though there are a few notable exceptions (such as Graham Priest and A. W. Moore, both of whom give clear, illuminating and sympathetic readings), most philosophers who identify as "analytic" are still content to dismiss deconstruction, without much reading or argument, as obscurantism, irrationalism, or worse. In view of these continued problematic facts of reception, it is probably too much to hope that a greater appreciation of the formal imperative in Derrida and Badiou by analytic philosophers can lead to anything like a general and widespread reconciliation of analytic and continental philosophy as such, at least anytime soon. Nevertheless, what may for the first time be possible, as is attested in clear and suggestive fashion by Norris's argument, is a practice of philosophy that, though it may certainly be marginal at first, is for the first time in decades genuinely and appropriately "pluralistic" – that is, a practice that recognizably continues,

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equally, the best methodological and thematic outcomes of both analytic and continental philosophy, and that systematically develops new methods and vocabularies for clarifying and pursuing the deep and unresolved problems that are common to both.

III

If there is going to be (as I have argued) a genuinely useful future practice (or practices) of philosophy that inherit the best outcomes of both twentieth-century traditions, the motivation of this practice will have to be, for obvious reasons, two-sided. Rather than simply appropriating or assimilating elements of one tradition to the other, it will be necessary to create genuinely new languages and methods that draw on the major outcomes of both. In this respect, it is probably necessary at this point to go beyond the idea of “bridge building” between the traditions and to employ a different metaphor: not so much the building of bridges between two distinct territories, but a confluence of streams that have run apart but in parallel for much of the twentieth century and could run together again.¹⁴ At any rate, it will be necessary not only for analytic philosophers to appreciate the formal dimensions of the projects of thinkers such as Derrida and Badiou, but also for continental philosophers to appreciate the deep problems that the analytic tradition itself bequeaths to a philosophical future. As I shall argue briefly in this final

¹⁴ Compare Dummett’s metaphor, in *The Origins of Analytic Philosophy*, for the relationship of Frege and Husserl: “Frege was the grandfather of analytical philosophy, Husserl the founder of the phenomenological school, two radically different philosophical movements. In 1903, say, how would they have appeared to any German student of philosophy who knew the work of both? Not, certainly, as two deeply opposed thinkers: rather as remarkably close in orientation, despite some divergence of interests. They may be compared with the Rhine and the Danube, which rise quite close to one another and for a time pursue roughly parallel courses only to diverge in utterly different directions and flow into different seas.” Dummett, *The Origins of Analytical Philosophy* (Cambridge, MA: Harvard U. Press, 1996), 26.

section, these problems are not limited (as one widespread stereotype holds) to dull, scholastic disputes, linguistic recreations, empty technical devices, or mere “logic-chopping.” Rather, they point, just as much as do the relevant “continental” problematics, to the deeply unresolved issues of sense, intelligibility, regularity, formalism and realism that characterize (and also problematize) collective social, political and economic practice around the world today.

It is here, however, that in many respects Norris’s treatment falls short, tending unfortunately to replicate stereotypical and sometimes misleading characterizations of the analytic tradition and its results. On Norris’s telling, in particular, several important strands of the analytic tradition running through its history, including (he says) “purebred logico-semantic analysis in the Frege-Russell line of descent;” “Wittgenstein-sanctioned deference to the problem-solving wisdom enshrined in ‘ordinary language;’” and “the appeal to ... thought-experiment as affording access to truth or knowledge through the witness of ‘straightforward’ (rational or common sense) intuition” all have in common “the tendency – indeed the fixed determination – to prop up the existing conceptual and institutional status quo against any too drastic departure from its own governing norms.” (p. 15). This tendency to conceptual conservatism, according to Norris, itself has its root in the analytic tradition’s systematic aspiration to the kind of “logical self-evidence” purportedly embodied by analytic sentences, truths or judgments (in Kant’s sense of “analytic”). Furthermore, Norris argues that it entangles the tradition’s methods in a “generalized version” of the “paradox of analysis” first pointed out by G.E. Moore, according to which any logical analysis of a sentence, if correct, cannot be informative (since it can only replicate what was originally meant by the sentence to begin with). This leads, Norris suggests, to a recurrent constitutive commitment on the part of analytic philosophers to projects that can ultimately yield only “a somewhat more perspicuous (logically accountable) rendition of existing ideas or idioms” and is to be sharply contrasted with the position, which

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Norris associates paradigmatically with Deleuze, according to which the “philosopher’s task [is] one of ‘creating concepts’ rather than subjecting ready-made concepts to analysis on likewise ready-made terms.” (p. 16). Relevantly to the larger argument concerning the formal imperative, Norris also identifies Derrida as a philosopher allied with Deleuze, in this respect, against the main lines of the analytic tradition, in that he, like Deleuze, centrally maintains “the power to invent or create new concepts whereby to challenge received habits of thought.” (p. 15).

The view according to which various strands of the analytic tradition must be politically conservative in that they systematically lack the capability or ambition to challenge established aspects of language, usage, or practice has relatively deep roots in recognizably ‘continental’ thought. Though it may have other sources, it goes back (at least) to Marcuse’s critique of Wittgenstein and other analytic philosophers in *One-Dimensional Man*.¹⁵ In more recent discussions, critical theorists including Habermas have accused the analytic tradition of an empty scholasticism and a general incapability to deal critically with socio-political problems, and John McCumber has argued that the dominance quickly achieved by the analytic tradition in the U.S. after World War II owed largely to its apolitical and hence “safe” status in a political climate dominated by McCarthyism.¹⁶ Similarly, Badiou himself, in *Being and Event*, associates “positivism” with the constructivist project of “the measurable fine-tuning of languages” and with a “statist” politics that “protects people, in times of order,” from recognizing those potential resources for change and transformation that exceed the scope of what can be said in a particular existing language.¹⁷

15 “The Triumph of Positive Thinking: One-Dimensional Thinking” in *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Societies* (Boston: Beacon Press, 1991).

16 See, e.g., Jürgen Habermas, *Communication and the Evolution of Society*, (London: Heineman, 1979) and John McCumber, *Time in the Ditch: American Philosophy and the McCarthy Era* (Northwestern U. Press, 2001).

17 *Being and Event*, 292–93.

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To all of these claims, it should be pointed out not only that the analytic tradition is in fact historically founded in the strongly progressivist project of the Vienna Circle whose aim was much more to reconfigure social relations and construct a new society than simply to protect or reflect established social patterns and usages, but also that explicitly critical reflection on existing usage and practices has remained an essential feature of analytic methodologies ever since.¹⁸ This is the case not only when this critical reflection has been explicitly marked as “ethical” or “political” (for instance in philosophers like Rawls and those who have developed political philosophy in an explicitly “analytic” way) but, more profoundly if less obviously, in many of the wide varieties of analytic projects that have taken up in one way or another the question of the structure of language and linguistic meaning and sense as it figures in, and bears on, our lives and practices. These projects, including Quine’s investigation of the consequences of radical translation, Sellars’ “pure pragmatics,” Austin’s penetrating analysis of performativity, and (in exemplary fashion) the later Wittgenstein’s profound re-examination of the ordinarily assumed conceptual foundations of subjective privacy and of (what is called) following a rule, all point in direct ways to deep and genuine problems, paradoxes, and aporias about the linguistic foundations of ordinary intersubjective practices.¹⁹ In a direct and fairly obvious sense, these problems matter to collective conceptions of the foundations of widely shared collective practices, ideologies, and motivations for action, and their further development can underwrite significantly the development of critical thought in all of these domains. In light of their existence and endurance, to simply presume the generalizing caricature of analytic philosophy and philosophers as conservative and protective of existing situations

18 For a useful corrective discussion of the political roots and ongoing ethical and political implications of analytic methods, see Hans-Johann Glock, *What is Analytic Philosophy?* (Cambridge U. Press, 2008), chapter 7 (“Ethics and Politics”).

19 Cf. my *Philosophy and the Vision of Language* (New York: Routledge, 2008), especially chapters 1 and 9.

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or prejudices is to risk ignoring some of the best and most important outcomes of the tradition. One may thus come to feel that Norris's argument would have benefitted from a clearer and more developed sense of these outcomes, and that with respect to their critical implications in particular, the stark alternative he sets up between essentially conservative and regulative analysis and bold concept-creation in the Deleuzian mold may represent (at least) one alternative too few.

Although Norris's focus is not primarily on the history of analytic philosophy (but rather on Badiou and Derrida), these significant omissions and mischaracterizations thus pose problems in the context of a book which has as one of its major stated aims to bring analytic and continental philosophy closer together. Indeed, one can feel that their consequence in the course of Norris' argument is to render his argument for the overall thesis - that there can be a useful rapprochement between analytic and continental philosophy on the (at least partial) basis of formal considerations - significantly less convincing than it might otherwise have been. If, in particular, Norris can convincingly argue that the various logical-structural aporias involved in our relation to the structure of language demonstrated by Derrida have both a rigorously formal determination and a set of radical "political" implications, it is disheartening to see discussion of the structurally and formally very similar aporetic position reached by Wittgenstein in his consideration of rule-following described repeatedly, in the same pages, as "humdrum and conceptually undemanding" (p. 7); "sterile or doldrum-prone" (p. 99); as having the main purpose of restoring "a communally sanctioned sense of what constitutes apt or proper usage" (p. 31) or, again, as involving commitment to the view that "there is simply no way that thinking can get some critical, diagnostic, or corrective purchase on language." (p. 13)

With respect to Wittgenstein, Norris may be guided in his interpretation, in part, by interpreters such as Kripke and Rorty, who have read Wittgenstein as a "communitarian" or an anti-realist thinker of the primacy of "social practices."

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This interpretation is opposed, however, by commentators such as Cavell, who emphasizes the ways in which Wittgenstein, in his inquiries into private language and rule-following, can and should be read as a critical “philosopher of culture,” as well as those, like Diamond and Putnam, who have emphasized (what is actually) the strongly realist orientation of Wittgenstein’s later philosophy.²⁰ More generally, one proximal cause of this tendency to misread and underestimate the formal depth of the aporias involved in central projects of analytic philosophy in the wake of the linguistic turn is Norris’s tendency simply to identify the linguistic turn as such with the types of constructivist, social-pragmatist, anti-realist, and communitarian positions that he joins Badiou and Derrida resolutely in opposing. This identification is itself suggested in various ways by Badiou, and Norris goes along with it for the most part, although as he himself notes it makes for serious difficulties in the interpretation of Derrida himself, who most certainly stands within (some version of) the linguistic turn. In fact, this tension between Derrida’s embracing of the linguistic turn and Badiou’s rejection of it poses *prima facie* problems for Norris’s attempts to characterize the two philosophers as invoking a unitary or similar “formal imperative” in their different projects, suggesting at any rate the necessity of a more exhaustive analysis of the ways in which the structure of language itself might (or might not) be thought to reflect a deep and unavoidable formal dimension of life and practices whose analysis and interpretation can benefit the aims of a critical and potentially transformative analysis of existing situations.²¹

This possibility, however, only comes into view if one is

20 See, e.g. Cavell, “Declining Decline: Wittgenstein as a Philosopher of Culture” in *This New Yet Unapproachable America: Lectures after Emerson after Wittgenstein* (Albuquerque, NM: Living Batch Press, 1989); Cora Diamond, *The Realistic Spirit: Wittgenstein, Philosophy, and the Mind* (Cambridge, MA: MIT Press, 1991) and Hilary Putnam, “Was Wittgenstein Really an Anti-Realist About Mathematics?” in *Philosophy in an Age of Science* (Cambridge, MA: Harvard U. Press, 2012).

21 Cf. my “Badiou contra Derrida” in *The Politics of Logic*, 219–224.

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prepared to consider that language and logic are not simply conventionally instituted and contingent “social practices”; and Norris unfortunately tends, following Badiou and other interpreters, simply to assume that analytic philosophers in the wake of the linguistic turn must make this assimilation. The element of truth in this is presumably the fact that some analytic philosophers who have identified with the thematic and methodological legacy of the linguistic turn (e.g. Carnap) are aptly characterized as holding the regulative and restrictive position formally identified by Badiou as constructivism. But as Badiou himself recognizes, the constructivist orientation cross-cuts the analytic and continental traditions, and so cannot simply be identified with either; and conversely, as I have argued, many of the most important and most problematic results of the analytic tradition’s sustained investigation of the structure of language do not fit comfortably within its ambit. More generally, it seems apparent that if it is to be possible for analytic and continental philosophers, at some future date, to recognize themselves as joint inheritors of a common set of socio-politically relevant and pressing problems, it just will not do to continue to rely on the prevalent stereotypes in either direction. It is therefore to be hoped that careful analyses, such as Norris’s, that aim to make “continental” philosophers more accessible to analytics will also be balanced by equally clear analyses of historical and contemporary analytic methods and results that evince their real significance for the kinds of critical projects and problems that most matter today.

Though it is, at times, repetitive, and there are a couple of regrettable errors in the presentation of formal results, Norris’s book is, overall, clearly written and argued, and will doubtless make some of the important formally based aspects of Badiou’s and Derrida’s arguments accessible to readers who otherwise would have remained ignorant of them.²² And

22 On p. 89, Gödel’s incompleteness theorem is described as showing that “any formal system of sufficient complexity to generate the axioms of (say) elementary arithmetic or first-order logic could be shown to contain at least one axiom which could not be proved within that system or by

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as I have suggested, his careful analysis of the significance of formal themes and results in Derrida and Badiou could contribute significantly to helping shape a philosophical future in which the longstanding divide between analytic and continental philosophy is finally significantly overcome. One of the further salutary features of Norris's book is, as we have seen, the way it outlines the real possibility that such an overcoming could also amount to a substantial overcoming of the anti-realist, social-constructivist, and relativist positions that are so broadly characteristic of contemporary widespread belief and practice, and of the contemporary deadlock of critical thought and transformative practice. It remains to be seen, of course, whether this joint overcoming of the analytic/continental divide and of the deeply held axiomatics of contemporary ideology at the level of philosophical thought and action will, in fact, take place; but it is heartening that philosophers such as Norris have begun to envision it as a possible outcome of the most significant critical and formal imperatives discernible in philosophical thought today.

using its own logical-conceptual resources." What Gödel's first theorem shows is, rather, that for any system sufficient to axiomatize arithmetic there is some sentence which is (by Gödel's argument) true (if the system is consistent) but cannot be proven by that system. On p. 106, a power set is described as a "set that comprises all those subsets that are members (and whose members are members) of some given set"; in fact, a power set is simply the set of all subsets of the given set.

Book Review

Simon O' Sullivan, *On the Production of Subjectivity*

Houndmills, Basingstoke: Palgrave Macmillian, 2012

320 pages

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SIMON O'SULLIVAN'S EXCELLENT book sets out to do two important things. First, O'Sullivan swims upstream against a dominant current in contemporary continental thought by allowing for a key role for subjectivity. With the shift away from the phenomenological subject in recent decades, along with more recent developments in speculative realism where the effort is to move beyond correlationism and thus the relationship between reality as it is in itself and as given to a subject, the result has been a general turn away from the subject. O'Sullivan agrees with most of the concerns that one finds expressed regarding the phenomenological subject, and his interests also bears strong affinities with the work of the speculative realists (O'Sullivan's conclusion compares his project to the work of the leading speculative realists); however, and this is the second important thing O'Sullivan sets out to do, what is often missing in discussions of subjectivity is processual nature of the subject

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as a finite-infinite relation. Most of the approaches to the subject O'Sullivan examines in his series of "case studies" (p. 9) either attempt to move beyond the subject altogether or they erect a bar between the finite subject and an infinite reality that maintains a perpetual separation and lack of relation between them. By drawing on the work of Deleuze and Guattari in particular, O'Sullivan works through discussions of numerous key thinkers in the continental tradition to establish his "fundamental idea...that any subject comes after, or is secondary to, a given process that is primary." (p. 6).

In addition to O'Sullivan's philosophical concerns, there is also an important political motivation at work in this book; namely, rather than falling immediately into line with the processes that produce subjectivities that support capitalist forms of production, O'Sullivan is interested in the "deployment of slowness against the sometimes alienating speed of contemporary living." (4). Although this book "does not attend to the realm of politics per se," (5) it is certainly interested in the exploring the Bergsonian gap between stimulus and response, for it is in this gap, O'Sullivan claims, where one taps into the "virtuality" this gap "implicates [and which] defines our ability to creatively respond to a situation rather than simply habitually react." (141). In other words, O'Sullivan is interested in exploring the philosophical tradition for tools that can facilitate the creativity of alternative subjectivities, and it is the finite-infinite relation that provides the most robust account, according to O'Sullivan, of the processes that are open to producing subjects that are "not reducible to those lifestyle options typically on offer." (1).

In the first chapter O'Sullivan examines the work of three key figures—Spinoza, Nietzsche, and Bergson. The discussions here are brief, as O'Sullivan admits, and thus one may not draw from this or subsequent chapters the detailed scholarly analysis one finds in other books, but one will find that these discussions are put to the task of clarifying the finite-infinite relation. With Spinoza in particular, O'Sullivan is quite right to argue that what is significant about Spinoza's work is the radicalness in which he affirms the relation between the finite

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and the infinite. Whereas Descartes and Leibniz, for instance, maintain that we cannot, as finite subjects, come to know the nature of God as infinite, Spinoza does argue that with the third kind of knowledge we can indeed enter into relation with the infinite God we always already are. The section on Nietzsche extends these points by adding the important role of the unconscious whereby the body “is more intelligent than consciousness since it surpasses the simple – and reductive – idea which the latter has of the former.” (32). The body was also important for Spinoza as well, as evidenced by his claim at 5P39 from the *Ethics* that “He, who possesses a body capable of the greatest number of activities, possesses a mind whereof the greatest part is eternal.” What Nietzsche adds to the mix is the concept of unconscious, and hence of processes that are irreducible to consciousness and to the identifiable states of affairs that are the objects of consciousness. Bergson, finally, is important for O’Sullivan because he provides the concept of the gap and hesitation between stimulus and response, and with this gap as well comes the concept of the virtual, a concept that will loom large in the work of Deleuze and Guattari.

Before turning to the work of Guattari (chapter 3), Deleuze (chapter 4), and Deleuze and Guattari (chapter 5), O’Sullivan explores the similarities and differences between the work of Foucault and Lacan. On the surface Foucault’s later work appears to be quite at odds with Lacan’s, for while the latter sets out to undermine any emphasis upon the ego and turns instead to the production of a subject through processes that “cannot be reduced to a science” (85), Foucault’s ethical concerns that come to the fore in his work regarding the care of the self appear to be focused precisely on the concerns of the ego. With the help of Spinoza, however, or with the finite-infinite relation Spinoza gives us, O’Sullivan shows that the techniques and tools Foucault gives us are not intended to solidify and reinforce the ego but rather they “take the subject of him or herself” (68). Understood in this way, Foucault’s “ethical trajectory” is not at odds with Lacan’s project, and moreover they both provide tools to enable the productions

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of subjectivity that are irreducible to the “lifestyle options typically on offer” (1). As O’Sullivan puts it, for Foucault, one is “to treat one’s life [less] as an enigma – a riddle of desire to be deciphered – than as a work of aesthetic production.” (82).

The third chapter on Guattari is the pivotal chapter of this book, for it is here where O’Sullivan lays out the finite-infinite relation as he understands it. By drawing on Guattari’s *Chaosmosis*, O’Sullivan turns to what becomes an important theme as well in Deleuze and Guattari’s later work, especially *What is Philosophy?* (which O’Sullivan discusses in chapter 5). In this context, the infinite is understood as chaos, and the finite-infinite relations thus becomes the relation between chaos and the order that emerges out of chaos. In *What is Philosophy?* Deleuze and Guattari explicitly define chaos in terms of the infinite speeds with which things emerge and disappear, a speed that doesn’t allow for the connections that establish identifiable states or elements. In *Chaosmosis* as well, Guattari will emphasize the role complexity plays in allowing for the move beyond established patterns of the “subject-as-is” (a term O’Sullivan uses). “The key intention here,” as O’Sullivan summarizes it, “is to complexify rather than reduce the components that make up any given instance of subjectivity.” (104). O’Sullivan’s turn to complexity theory is helpful at this point, and quite in line with what Guattari and Deleuze and Guattari do explicitly in their own work.

One of the strengths of O’Sullivan’s book is that he is able to motivate the move towards Deleuze and Guattari in order to lay out the finite-infinite relation as a process that is irreducible to the subject-as-is, or to any determinate, identifiable state for that matter. There are some residual questions, however, and some points that could use further clarification to flesh out precisely how Deleuze and Guattari account for the finite-infinite relation. First and foremost what is needed is for O’Sullivan to clarify what he means by the infinite. The infinite is used many times by Deleuze and Guattari – they define chaos by its infinite speeds and multiplicity is referred to an infinitely doubled difference – but how is this use of the infinite related to Spinoza’s, or Badiou’s (who in turn draws

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heavily upon Cantor's theory of the infinite)? Within the philosophical tradition, for example, there is an important distinction between what Hegel called the good and bad infinite, which is related to Aristotle's distinction between that which is actually and that which is potentially infinite. Hegel, for instance, will criticize Spinoza for succumbing to the bad infinite, to an infinite that is always in excess of any finite number and is thus not in relation to the finite, whereas for Hegel the good infinite is just that which every finite entity presupposes. With Hegel, in other words, we already have a philosopher who affirms the finite-infinite relation. With the influence Hegel has had on recent philosophers such as Slavoj Žižek (who is also extending the work of Lacan) and Adrian Johnston, it would have further supported O'Sullivan's cause if he had explored these issues a bit further.

Despite the concerns regarding O'Sullivan's account of the nature of the infinite, and hence the finite-infinite relation, the general trajectory of O'Sullivan's arguments are to this reader right on target. O'Sullivan is quite right to draw the line between Deleuze and Guattari, and his own project, and a host of other contemporary philosophers, at precisely this point—do they or do they not allow for the finite-infinite relation. In the case of Badiou, for instance, which O'Sullivan discusses in chapter 4, O'Sullivan correctly argues that despite affirmations to the contrary Badiou does not fully account and allow for the relation between the finite and the infinite. In the end, O'Sullivan argues that for Badiou “the subject is closed off from the infinite of which it is an operator.” (137). This conclusion would have rung much more loudly and clearly had some of the issues regarding the infinite mentioned above been given further attention, but the conclusion O'Sullivan draws is nonetheless an important conclusion and ought to generate further discussion of the finite-infinite relation.

In the final chapter O'Sullivan compares his own project to the work of philosophers in what has come to be called speculative realism. In brief sections on Quentin Meillassoux, Reza Negarestani, Graham Harman, Ray Brassier, and Iain Hamilton Grant, O'Sullivan argues that his own project

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involves a speculative component, engaged as it is in the processes involved in what O'Sullivan calls the "speculative subject" (210). This speculative subject, however, is not the knowing subject for whom the problem is one of access to the real, or of knowing the real as it is in itself rather than as given to the subject; to the contrary, the speculative subject is one with the infinite processes that are the world itself. The Spinozism of O'Sullivan's project comes into sharper focus at this point for the finite-infinite relation is simply the processes of the one infinite substance - what Guattari and later Deleuze and Guattari call chaosmos. The subject-as-is, therefore, is only a secondary phenomenon, as we have seen above, but more importantly is an effect of primary processes that are simply processes of the chaosmos itself. Deleuze will discuss such effects as quasi-effects in order to emphasize the fact that the subject-as-is is not an independent correlate of the primary processes but rather is in reciprocal determination with the infinite substance. The infinite chaosmos is the flip side of the subject-as-is, and it is the side that allows for the transformation of subjectivities, or for the emergence of subjects that are "not reducible to those lifestyle options typically on offer." (1). We can now understand the motivation behind O'Sullivan's claim "a probe of sorts has already been sent in to the absolute and that the name of this probe is the subject when this is understood as specifically not the subject-as-is, but a speculative subject that is always in process, always, as it were, becoming-world." (210).

O'Sullivan's *On the Production of Subjectivity* is an important contribution to contemporary continental thought. What are on offer here are some important tools that allow us to rethink our relations to ourselves, others, and the world. O'Sullivan makes a strong case that now, perhaps more than ever, it is critical to explore ways in which alternative subjectivities may be produced that are not subordinate to the contemporary exigencies of capitalist forms of production. To this extent, therefore, O'Sullivan has fulfilled his hope that his book, "even in its most abstract parts... [become a] point of inspiration - for others in their own lives and in their own project of the production of subjectivity." (222).

Book Review

Graham Harman, *Weird Realism: Lovecraft and Philosophy*
Winchester: Zero Books, 2012

277 pages

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LOVECRAFTIAN. A TERM USED TO describe a story evocative of, or inspired by, the works of horror writer H.P. Lovecraft. Given his widening influence in genre fiction, it is also a term increasingly in vogue. But what do we mean when we say that a short story or novel (or even a poem) is Lovecraftian? In his creative, original take on the possible philosophical implications of Lovecraft's fiction, Graham Harman gives us some clues as to what is meant and implied by the term.

For Harman, there are two philosophical approaches to reality. One is to see a harmony and unity in all things. The pre-Socratic Greek philosophers are a good example of this tendency (Anaximenes, one of the well-known Milesian philosophers, believed everything was essentially reducible to the element water). The other direction is to see division, or as Harman puts it, “gaps” in the nature of reality. In contrast

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to a kind of reductionism witnessed in the monism of Anaximenes, he calls this *productionism*, and this is how he understands Lovecraft: “No other writer,” he says “is so perplexed by the gap between objects and the qualities they possess.” (3)

If there is an essential element that captures the term “Lovecraftian” it is this: the idea that reality is a whole lot weirder and more terrifying than it is possible to understand and, even more so, than it is possible to describe. It is what Harman calls the “notion of a purely oblique access to genuine reality.” (262) Instead of a species of representational realism, with Lovecraft we only have nominal access (in so far as it is possible, which it isn’t) to “weird realism”; as Harman puts it “reality itself is weird because reality itself is incommensurate with any attempt to represent or measure it.” (51)

Lovecraft, Harman argues, is a writer whose style and content form a unity that speaks (almost wordlessly) to the inherently unknowable weirdness of reality. Harman suggests this has larger philosophical consequences: “Through his [Lovecraft’s] assistance we may be able to learn about how to say something without saying it - or, in philosophical terms, how to love wisdom without having it. When it comes to grasping reality, illusion and innuendo are the best we can do.” (51) In order to explore this assertion, Harman analyzes one hundred passages from a selection of Lovecraft’s best-known stories. This is an effective technique and allows him to deconstruct particular passages in detail and slowly develop a rich canvas of Lovecraft’s most characteristic themes and their philosophical relevance.

The first of these passages introduces us to the importance of *time*, particularly a sense of time in the mythos Lovecraft develops that makes all of human history, and the existence of the human species, seem but a glimmer in a cold, eternal and uncaring universe. Haunting as this notion is, an even more arresting discontinuity is the nature of *space* or, more specifically, the incongruous objects that make up this space. Lovecraft is a writer who challenges our basic rational categories and the ability to apprehend the world in a knowable way. Even geometry, the basic shape of space, is subject to uncertainty:

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“Nothing is more Lovecraftian than his repeated vague assaults on the assumptions of normal three-dimensional space and its interrelations [...] could [anything] be more threatening than the notion that something is ‘all wrong’ in the presumed spatial contours on which all human thought and action is based.” (71) In his description in “The Call of Cthulhu” of an “acute” angle that “behaved as if it were obtuse”, Lovecraft offers us the possibility of geometry beyond geometry.

Harman sees as quintessentially Lovecraftian these types of fascinating disjunctions and juxtapositions in his descriptive style. Lovecraft is the purveyor *par excellence* of the bizarre and unknowable. But he does suggest that some beings - those with particular sensitivities and, at times, even animals - can instinctually grasp aspects of the malevolent manifestations of the multiverse he describes through tangential allusions and disjointed cubist pastiche. Harman actually speaks of an asymmetrical form of description in Lovecraft he cleverly dubs “literary cubism.” (234) He consistently characterizes Lovecraft’s style as soaked in allusions, vagaries, incongruity and a general lack of real, true clarity or knowledge. In this manner, Harman builds the case for Lovecraft as a master proponent of “weird” realism.

It is this brief glimmer of insight into the “monstrous nuclear chaos” that Lovecraft puts one in touch with. Harman reminds us that with Lovecraft we enter a weird world where the conventional frameworks of science are insufficient and even inane. Science falls dumb in the face of Lovecraftian forms (which are often “formless”), “color by analogy”, beings that challenge standard biological taxonomies, and objects whose very substance defy clear categorization.

As readers, Harman argues, we find ourselves in a similar place as Dr. Dyer in “At the Mountains of Madness”: “.. it marked my loss, at the age of fifty-four, of all that peace and balance which the normal mind possesses through its accustomed conception of external Nature and Nature’s laws.” (164) Thankfully, much of this incongruous and inconceivable “weird” reality behind our own is largely concealed from us by our banal perceptions. In this respect, perhaps one of

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Lovecraft's most telling passages is the opening line of "The Call of Cthulhu": "The most merciful thing in the world, I think, is the inability of the human mind to correlate all of its contents. We live on a placid island of ignorance in the midst of black seas of infinity, and it was not meant that we should voyage far." (169) Indeed, as Harman notes at various points, many of the narrators in Lovecraft's stories "live on a placid island of ignorance" - they are generally far more rigidly rational and disbelieving, and also more obtuse, than the reader.

And yet, as rational and as "scientific" as these narrators often are, they are on a parallel path of discovery with the mystics and occultists and eventually catch up with the reader in what usually end up as tragic-comic results. Here again we find another interesting Lovecraftian trope - the idea that the conventional schism between science and superstition (i.e. the occult), rooted in a caricature of Enlightenment virtues, is invalid. Science, in fact, is merely a more plodding approach to grasping brief vignettes of the vast and incomprehensible cosmos. In this respect, instinctual and intuitive insights outpace rational ones. It is in dreams and the realm of the unconscious where true glimpses of the weirdness of reality lie.

There is also some genuine literary critique in Harman's treatment of Lovecraft. He suggests a repetitiveness and dwindling stylistic spark in his analysis of "A Shadow Out of Time," a later story he argues starts to lose touch with the essence of the Lovecraftian in its more obvious and direct tone. As he says: "Lovecraft works best when *hinting*, not when explicitly declaring or blandly listing." (223)

So what, then, does all this have to do with philosophy, and what hints do Lovecraft's stories provide as to our condition in the world? Harman argues that Lovecraft, and more specifically the Lovecraftian style, can provide insight into what he calls "ontography" - thinking that deals with the interaction between objects and their qualities. Harman is a proponent of object-oriented philosophy (OOP), a new wave in philosophy that attempts to deal with the tensions between conventional conceptions of realism and a contemporary idealism heavily

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influenced by structuralism and symbolist views. Essentially, Harman argues that with Lovecraft we have a

reality where there are always incongruities between our descriptions of objects and the objects themselves: “We have repeatedly encountered the classic Lovecraftian gesture in which an entity is described as having certain properties while also being said to resist description by these very properties, as if such details were able to give us nothing more than a hopelessly vague approximation.” (237)

This happens in two distinct directions. One is in a *fusion* - and here the parallel is made with (mis)understandings of “space”. Harman’s quintessential example of this comes from the description of the Cthulhu idol in “The Call of Cthulhu”: “If I may say that my somewhat extravagant imagination yielded simultaneous pictures of an octopus, a dragon and a human caricature, I shall not be unfaithful to the spirit of the thing...but it was the *general outline* of the whole which made it most shockingly frightful.” (57) Harman argues at various points that rather than a simple chimera-like amalgam of these three qualities that emerges in stereotypical depictions of Cthulhu in contemporary contexts, we are actually at a loss to fully imagine the object, for these descriptors only make up a general outline, which “never quite crystallizes for the reader into a palpable sensual object.” (237) In this respect, we face the same problem with all objects that are ultimately always more than a fusion; always more than a recitation of their various qualities. After all, with a little imagination our list of qualities of even the simplest objects can conceivably extend out to infinity.

The other direction this apprehension of objects moves is towards *fission*, which “splits the usual relation between an accessible sensual thing and its accessible sensual qualities.” (241) These are the disjointed cubist-inspired descriptions of objects Lovecraft offers which carve them up into various qualities that never come to constitute a unified whole. He ties this phenomenon to *time*, noting that “this is precisely what our experience of time involves - the fluctuations of

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numerous qualities around somewhat enduring (but not permanent) objects that remain the same throughout those fluctuations.” (242) This reminds one of philosopher Henri Bergson’s concepts of *duration* and lived time. Bergson was fascinated by the way in which scientific attempts to break time into regular segments failed to fully capture the elusive nature of its particular flow and totality. Only an act of intuition, not reason, allows us to come to grips with time’s ineffable qualities. In this sense, time is an object encased within this elusive state of fission.

Using these categories and further discussions of the “taxonomic fallacy” (i.e. the argument that understanding objects merely in terms of their relations and origins within a given system (social, cultural, economic) is also insufficient), Harman builds a case for both the importance and the ultimately unknowable nature of objects. This then becomes a characteristic of the world itself, and not just our descriptions of it. He thus makes a lateral move from literature to metaphysics: “Irony and paradox cannot be local particularities of literature then, but are an ontological structure permeating the cosmos.” (248)

Like characters in a Lovecraftian tale, Harman argues we live in a world full of “gaps” - of “black holes” - which are produced when we are deprived of access to the real objects that lurk beneath perception. This may be a frustrating limit to some, and can be seen to have meaningful consequences for epistemology and our general understanding of Nature. But if the Lovecraftian paradigm is to be believed in any respect then our lack of knowledge and inability to fully “see” are blessings in disguise. When it comes to the unfathomable cosmos and the objects Lovecraft has seen fit to populate it with, ignorance is bliss.

Book Review

Patricia MacCormack, *Posthuman Ethics: Embodiment and Cultural Theory*

Burlington: Ashgate, 2012

168 pages

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EARLY IN PATRICIA MACCORMACK'S *Posthuman Ethics: Embodiment and Cultural Theory*, she explains “*Posthuman Ethics* could have been called *Posthuman Bodies*” (1). This switch, from ethics to bodies, is important. It lets the reader know that the book is not going to be concerned with a normative understanding of ethics. Instead, ethics here is a Spinozian ethics, in other words a moral physics, a relationship of bodies to each other and how they affect one another. If that is the ethics, the posthuman should be understood in two senses. First, it means a position that exists, as Cary Wolfe has put it, “both before and after humanism.”¹ In this sense, MacCormack’s work should be read as part of a long line of posthumanist theory, including Donna Haraway’s “Cyborg Manifesto” and *When Species Meet*, N. Katharine Hayles *How We Became Posthuman*, Cary Wolfe’s *What is Posthumanism?*,

1 Cary Wolfe, *What is Posthumanism?* (Minneapolis: Minnesota, 2010), xv.

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and Rosi Braidotti's *The Posthuman*. However, posthuman should also be understood as the ways that all sorts of bodies, including non-human ones, end up entangled in and with each other. In this sense, we can see *Posthuman Ethics* as being part of a continuation that includes Mel Chen's *Animacies*, Beatriz Preciado's *Testo Junkie*, and Jasbir Puar's *Terrorist Assemblages*. MacCormack forces us into the vortex of what Felix Guattari has referred to as "affective contamination," which is the process by which other beings "start to exist in you, in spite of you."² Thus, we are treated to examinations of our entanglements with art and inhuman ecstasy, tattoos and the skin, nonhuman animals, marvelous monsters, mystic queers, and the nation of the dead. So far, so good. But also, I am sure you are asking, how is this book new? Is this just another book of posthuman theory combined with the author's preferred more-than-human objects of inquiry? This is where things get interesting, because despite MacCormack's protests, there is still a normative ethical argument that is slowly developed throughout the present work. MacCormack is concerned with how "regimes of signification" create and produce domination (94). What emerges, then, is an ethics that cuts to the very core of what it means to do philosophy and theory.

The tension that motivates *Posthuman Ethics* is navigating the tightrope between our entanglements with other beings, and the epistemic violence that can occur when we seek to comprehend these nonhuman actors. Édouard Glissant reminds us that *comprehend* is rooted in the Latin for seizing, grasping, and taking. For Glissant, against this colonialist comprehension, we have to have a Relation that respects the right of opacity of "the margins, the rebels, the deviants, all specialists in distancing."³ While Glissant is not mentioned by MacCormack, we can understand *Posthuman*

2 Felix Guattari, *Choasmosis*, trans. Paul Bains and Julian Pefanis, (Bloomington: Indiana, 1995), 92-93.

3 Édouard Glissant, *Poetics of Relation*, trans. Betsy Wing, (Ann Arbor: Michigan, 1997), 156.

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Ethics as an attempt at extending Glissant's argument in a non-anthropocentric registrar. Furthermore, MacCormack displays how the human is quintessentially a being of violent comprehension:

Posthuman Ethics has consistently sought the silencing of what is understood as human speech emergent through logic, power, and signification. Human speech makes the world according to the human, tells the world what it is and speaks for the world, that is, to other humans and to the gods of human speech—religion, science, capital. Silencing human speech opens a harmonious cacophony of polyvocalities imperceptible to human understanding, just as human speech has the detrimental effect of silencing unheard, unthought expression. (144)

Thus, the posthuman is also the world outside of the representational matrix that humans produce.

Though never denounced by name, we can understand that a posthuman ethics exist in tension with a Hegelian or Butlerian ethics of intersubjective recognition. And MacCormack is serious about this rejection, both politically and ethically. So, on the issue of gay rights, MacCormack argues that “by gaining recognition homosexuals (and inevitably all ‘deviants’) lose as much, if not more, than they gain” (105). On the issue of our ethical duties toward other animals, she takes a strong animal abolitionist standpoint, arguing that the only truly ethical relationship comes from “the grace which can only come from leaving alone” (68). Even something that might take us out of the human, the study of the monster, is fraught with peril because “this relation, to know and name the monster, is an act of violence” (92). For MacCormack these are the right political and ethical stances to take because the ethics of intersubjective recognition is not just wrong, it is actively harmful and violent. Intersubjective recognition is a mode of thinking that falls under what MacCormack calls necrophilosophy.

Necrophilosophy is a type of philosophical work that focuses on mourning, on turning its attention to the death of subjectivity, and on representing the world to us. In seeking

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to represent the world, necrophilosophy fixes the identity of the subjects that it explores. In defining these subjects, in comprehending these subjects, necrophilosophy turns the living identity of these beings into something that is already dead. Necrophilosophy turns the living into the dead, even as it seeks to do the opposite. “Necrophilosophy attempts to make sense of death, perhaps in order to deny it, but ethics should be preventing the non-volitional asymmetrical deadening of things rather than transcendently enlightening their being” (123). The only resistance necrophilosophy can offer is the “ineffectual mourning of the dead who are numbered” (133). Against necrophilosophy, MacCormack argues for a vitalistic philosophy. This “vitalistic post-structuralism takes on the seemingly impossible urgency of addressing the unthinkable, responding to the other as an encounter without seeking, needing, or being able to know or nomenclature its singularity, but thinking it nonetheless” (118). Vitalism here refers to something so in excess, it is unthought and unthinkable, it is unspoken and unspeakable. It is, as Deleuze puts it, “a vital power that cannot be confined within species, environment or the paths of a particular diagram. Is not the force that comes from outside a certain idea of Life, a certain vitalism [?]”⁴ Vitalistic philosophy is MacCormack’s attempt to posit a relation to the outside that is still non-transcendental. Again and again in *Posthuman Ethics*, we run into terms that are usually understood to be transcendental in nature, but that MacCormack is repurposing to be taken as immanent. Thus, she writes about angelic and demonic becomings, about queers as mystical, and about art as a type of ecstasy. All of these are figures of events and experiences whose intensities are meant to undo us in some way. More important, these vitalistic forces from the outside are supposed to allow a mode of relation that refuses comprehension. “Relinquishing the powers of comprehension for ecstatic potentialities of thought interiorizes the outside while the outside interiorizes the self” (56).

4 Gilles Deleuze, *Foucault*, trans. Sean Hand (Minneapolis: Minnesota, 1988), 92-93.

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What MacCormack is arguing for is a type of relation and thinking that is fundamentally liminal, and that can interact with the other-than-human world in a perpetual becoming and in-betweenness. Another way she presents this subject position is, following Irigaray, as being mucosal:

Mucosal relations configure the encounter event between self and other as one where ethics is found in the viscous connectivity between the two and where each escapes identity [...]. That the materiality of the relation is mucosal reminds us that opening to the as-signifiable other can be conceived as unpalatable, that even when we flee residue remains, that there are escaping leaky elements which exceed the two within the relation and most importantly, that thought is material and materiality is a thought event. (109-110)

Immanence here becomes rethought of as slime and ooze, and the posthuman body is reconfigured as a porous membrane. In this formulation, there is but a fragile surface separating inside and outside, self and other, and which moving through this world means leaving part of yourself constantly behind while unintentionally picking up bits and pieces of the world with you.

Now, maybe you are still doubtful that a fully liminal and perpetually becoming subject position is possible. And while the average human produces around a liter of mucous a day, maybe you are still suspicious that you cannot figure out how to live in a mucosal relation. I wonder if MacCormack shares these fears, because despite producing several figures of liminality, she ends her book on a radical proposal, a “perversely literal interpretation of Deleuze and Guattari’s call to becoming-imperceptible” (141). Her radical proposal is that we work to end humanity. Not through some sort of transhuman dream of cyborg futures, or some theoretical move to understand ourselves as all animals and end the notion of humanism. No, her argument is all of us who are putatively human beings should, voluntarily, not reproduce. We should try to make this the last generation of humans, and make humanity extinct in the universe. If, as I said in the

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beginning, that this work is motivated by a tension of walking a tightrope between our entanglements and epistemic violence, MacCormack thinks the right choice can be to cut the rope itself, and fall without a net to catch us. This is not her descending into the necrophilosophy she critiques, rather she sees the end of humanity as a celebratory and life-affirming impulse. If we all suffer, as Adorno puts it, from the “guilt of a life which purely as a fact will strangle other life,” than this is a way out of the guilt. ⁵No more mourning, no more melancholia, just one last party, and then *shhh*....

I am tempted to let this review end on that note. After all, it is kind of a beautiful image. And there is much that I am sympathetic to in *Posthuman Ethics*, and that calls to me. But there is also a lot that I am hesitant about. Though I am also hesitant about this very critique, because in a part of the book I underlined three times and put stars in the margin around, MacCormack writes:

Majoritarian culture fuels these issues [in-fighting and disagreements] (particularly academically) to deflect the becoming of these activists. These disagreements annex themselves to majoritarian practices, where thought is founded on consistency and homogenous conformity which is called ‘logic’. In majoritarian logic if an argument or issue is logical it would not include disagreeing elements. (134)

I agree entirely with that statement, and believe that often the most radical move is to figure how disparate elements can co-exist in a broader assemblage. What Freud called “the narcissism of minor differences” has pulled apart more than a few social movements. And yet with all of that said, here we go.

I worry about her easy binary between necrophilosophy and vitalistic philosophy. In particular, vitalism, maybe especially in its Spinozian formulation, seems to produce a kind of biopolitical thinking.⁶ In short, it seems to indicate

5 Theodor W. Adorno, *Negative Dialectics*, trans. E. B. Ashton (New York: Continuum, 1973), 364.

6 For more on this, see Peter Gratton’s “Spinoza and the Biopolitical Roots

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that here are the bodies and relations that are acting lively and produce pleasure in my subject, so I should help those flourish, and these are the bodies that are not doing that, and I need to get rid of. This is of concern because vitalistic philosophy seems to operate as a get out of jail free card to the very issues of opacity and regimes of signification that MacCormack takes so seriously. Take in particular the issue of other animals. She insists strongly that we can never know other animals, and that they will always remain removed from our comprehension. And at the same time she argues that species is a construction that does not exist. If so, how do we know what are other animals and what are humans for her abolitionist position? We need to come to understand both other humans as more opaque, and nonhumans as more affective communicators. Our entanglements and affective contaminations give us both more certainty and less certainty than MacCormack's posthuman ethics seem to allow. And because of that, I doubt there is a way to escape the guilt, mourning, and melancholia that can come from just existing with other living beings. Instead of the innocence of escape from this world, we are just left with the messy and difficult task to construct a different world.

MacCormack's *Posthuman Ethics* is a daring book, and her arguments need to be taken seriously by anyone interested in posthuman and posthumanist theory. Her argument that thinking is material, and as such, already a relationship that requires ethics needs to be recentered at the heart of doing philosophy. If we aim to produce an ethics of posthuman bodies, it will have to done riding the turbulence created by MacCormack's thought.

of Modernity," *Angelaki: Journal of the Theoretical Humanities*, 18:3 (2013), 92-102.



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Gironi, Fabio; Austin, Michael; Jackson, Robert

punctum books, 2015

ISBN: 9780692593974

<https://punctumbooks.com/titles/speculations-vi/>

<https://www.doi.org/10.21983/P3.0122.1.00>