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The Quantum Infinite Correlationalism, Contingency and Necessity

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At the very beginning of *Less than Nothing*, Slavoj Žižek states that his aim is not simply to return to Hegel but, more broadly, to repeat Hegel (Žižek, 2012: 18). This cuts against the grain of much of contemporary philosophy that tends to see in Hegel an elaborate, but unsuccessful, attempt to develop a holistic idealism. This is exemplified in one of the most recent trends in philosophy, that of speculative realism, spearheaded by Quentin Meillassoux. For Meillassoux, the problem with Hegel is that,

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.. This is precisely what separates the factual from the dialectical – or to put it more generally...what separates the speculative from the metaphysical. (Meillassoux, 2011: 80)

This paper seeks to address why, and how, Žižek continues to view Hegel's philosophy as more relevant than ever. Through an analysis of Meillassoux's break with 'the Kantian problematic', it will explore the way in which Žižek articulates a Hegelian approach to the question of contingency. From here it moves to an analysis of the classical (pre-Socratic) notion of *Den* and to how this can contribute an understanding of what might be called the quantum infinite.

Romancing the Bone - Meillasoux's Anti-Correlationalism

Meillasoux begins with a basic deconstruction of the correlation/absolute distinction. Correlationalism affirms the finitude of our understanding and engagement with the world. But if all understanding is limited by the correlate (the 'for us'), then this limitation is an absolute one. Meillasoux thus takes the opposite stance of Rorty. Where Rorty maintains the need to come to terms with the finitude of our engagement with the world (through the correlates of language, culture, history and so on), Meillasoux argues that it is through this finitude that we acquire 'the absolute knowledge that the world might be other than we think' (Harman, 2011: 27-28). It is precisely because every finitude (correlate) is an inherent failure – i.e. a delimitation of possibilities that exceed it – that a path to the absolute is opened. But, as he points out, 'it is not the correlation but the facticity of the correlation that constitutes the absolute' (Meillasoux, 2011: 52). In other words, it is the radical ontological contingency (facticity) of the correlate – i.e. that the in-itself can always be something other than the given – that renders the absolute.

Meillasoux does not return to any philosophy of a substance-behind-the-veil, but neither does he remain within the confines of standard correlationalism. By changing the terms of engagement, the correlationalist limitation becomes the very point of escape via the affirmation of radical facticity:

facticity will be revealed to be a knowledge of the absolute because we are *going to put back into the thing itself what we mistakenly took to be an incapacity in thought*. In other words, instead of construing the absence of reason inherent in everything as a limit that thought encounters in its search for the ultimate reason, we must understand that this absence *is*, and can *only* be the *ultimate* property of the entity. We must convert facticity into the real property whereby everything and every world *is* without reason, and is thereby *capable of actually becoming otherwise without reason*. (Meillasoux, 2011: 53)

Notwithstanding the absoluteness of contingency and the elevation of ignorance to an ontological principle (the apprehension that reality can be

other), Meillasoux insists upon privileging one form of discourse that is able to slice through all correlational ambiguity and open a gateway to the great outdoors: the discourse of science. Science is distinguished from all other discourses because of its ability to provide access to what he calls the ancestral. Ancestrality refers to a time that existed before our being and consciousness and thus, by definition, a non-correlated time – a kind of mute existence untouched by human mediation that is empirically indicated by prehistoric bones and fossils. Indeed his entire project appears to boil down to a kind of reclaiming of a substantialist (uncorrelated) form of ontology:

I refuse this 'Real without realism', because if I don't have a rational procedure to discover specific properties of the Real, those properties threaten to be arbitrarily posited. (Meillasoux in Brassier *et al*, 2007: 435)

He goes on to say that 'what contemporary philosophy lacks is not so much the Real as realism: the Real *with* realism is the true challenge of philosophy' (Meillasoux *et al*, 2007: 435). Everything here depends on the status of the Real. For Meillasoux, the Real is something that can be captured, and represented, in positive terms by the realism of scientific thought. Through a continuous refinement of its discourse, science is able to advance upon its quarry of the 'specific properties of the Real'. Although Meillasoux divests the world of any underlying or hidden Reason – there is only the 'manifest gratuitousness of the given' (Meillasoux, 2011: 63) - he nonetheless maintains a rather traditional view that the world can be divided in terms of reality and appearance, or what he calls primary qualities (i.e. properties of the Real) and secondary qualities (i.e. sensible/pathological properties). Scientific discourse is able to strip away the secondary qualities of appearance and to get at the primary non-pathological (or uncorrelated) properties. Substance re-emerges here not so much as a fundamental entity but as a kind of consistency of form to contingent phenomena which science and, in particular, mathematics can access and codify the infrastructure of all being.

For Meillasoux, the very positing of the gap as a transcendental becomes itself a way of bridging the gap in positive terms. The Real (what there is

whether 'we are or not') and the entire datum of unreason qua contingency are effectively re-mastered by rational determination. Does this not reflect a rather classical Enlightenment ambition: i.e. to overcome all remnants of the mystical and to establish the reign of (scientific) reason? In eschewing the absolute, Western critical (correlationist) reason has created a climate of cynicism and ironic distancing which has inadvertently opened up the very space for new types of dogmatism and revelatory ideologies to flourish. Through its abandonment of the in-itself, modern philosophy has allowed the absolute to become further mystified and to become prone to all those discourses (cults, fanaticisms, neo-fascisms and so on) that would make some claim to it. It is crucial, therefore, to reclaim the absolute within the terms of universal reason (Meillasoux, 2011: 49). In fact, Meillasoux's vision could be considered to be even grander than that expressed in Enlightenment thought. On the basis of absolute factuality, where there can be no destiny or necessary entities, Meillasoux affirms the possibility of a future World of justice (beyond matter, life and thought) in which the dead could be resurrected to a state of immortality and where a virtual God (or even Gods) can arise as 'the last-born of humans' (Meillasoux in Harman, 2011: 231).

The real problem in Meillasoux is arguably the opposite one. That is to say, it is because so much emphasis is placed on the virtues of practical empirico-scientific engagement that the more abstract dimensions tend to be sidelined, put into parenthesis. This is reflected in his assertion that we need to 'revoke the transcendental' (Meillasoux, 2011: 26). For Meillasoux, the transcendental – and, in particular, the transcendental subject - can only be thought as something that 'takes place' under concrete spatio-temporal circumstances (Meillasoux, 2011: 24-26). The transcendental is thus conceived as something secondary to, a function of, the 'time of science' (i.e. the contingent interplay of objects and circumstances). The 'time of science' emerges precisely at the point where the transcendental exhausts itself and is shown to depend on particular conditions of possibility.

Yet does not Meillasoux already rely upon an implicit notion of the transcendental: i.e. contingency itself as a transcendental, or absolute,

exception? Moreover, does contingency constitute the absolute as such? Both Meillasoux and Badiou share a view of contingency-as-absolute (though in different ways) and to present this in terms of a mathematized infinity. For Badiou it is presented as the multiplicity of multiplicities where being is conceived as 'a mathematically thinkable pure multiplicity' (Badiou, 2011: 30). For Meillasoux it is the idea that 'whatever is mathematically conceivable is absolutely possible' (Meillasoux, 2011: 117). From any starting point, we can proceed in an infinity of directions with an infinity of sequential permutations and outcomes. In the Cantorian sense, every infinity leads to another infinity.

The problem that emerges here is a conceptual separateness where infinity tends to be viewed implicitly as something over and above the given and which, in some sense, can be grasped in mathematical terms. Hegel approaches this problem in a different way, beginning with the question of otherness: the other is always-already internally inscribed and the in-itself is precisely the constitutive failure of something to be itself in positive terms. Things always indicate an other; an other which is also something and which in turn indicates a further other and so on *ad infinitum* (Hegel, 1991: 149).

Yet for Hegel this conception of infinity as an unending number of instances and combinations, which is simply opposed to the finite in positive-independent terms, is a spurious one (Hegel, 1991: 149). It does not touch upon the true dimension of infinity. One should not approach infinity in terms of multiplicities that simply over-run any singularity or finite-ness. In the first place, infinity should not be thought of as something above or apart from finitude. It is not as if 'one is situated *here*, and the other over *there*', it is rather that 'the True, or the genuine Infinity, is determined and expressed as the *unity* of the infinite and the finite' (Hegel, 1991: 151 & 152). But this 'unity' is not any kind of identity, but precisely the opposite: it is the name of a radical tension, or impossibility, that forever bars any identity as such (in this sense it has the same kind of structural logic of Lacan's subject-subjectivity 'unity'). In other words, infinity grows out of finitude (and *vice versa*). Infinity emerges as a consequence of the failure of the finite to fully constitute itself; it is the inherent dimension of impossibility-negativity in every finite. Likewise, the

finite is not an independent actuality but a continuous process of re-constitution against the infinite threat of immanent dissolution. Thus it is not a question of a finite combination of multiples versus an unending multiplicity of possible combinations, but rather that every multiplicity is itself sustained/generated by an infinite 'singularity': the persistence of an infinite self-relating negativity within the finite. Put in Lacanian terms, the infinite arises as the not-all of the finite (and *vice versa*).

And this is why for Lacan 'mathematization alone reaches a Real' (Lacan, 1999: 131). But the Real here is nothing substantial, and certainly not any pre-subjective or pre-discursive reality. The Real that mathematics is able to give expression to is not anything substantial or pre-given but precisely the opposite: it is incompleteness, inconsistency and lack. What mathematics achieves is the 'signifying of dispersal and unraveling' (Lacan, 1999: 128). Far from capturing any solid non-correlated ground on which to base a diachronic narrative of development, mathematics marks the very point(s) at which fantasy has to intervene in order to patch up the inherent inconsistencies of reality. More generally, what follows from this is that science (in its everyday applied forms) functions ultimately along fantasmatic lines. That is to say, science serves to generate/reproduce an autopoietic consistency that is capable of rendering 'reality' as something communicable as a field of effectivity (Lacan, 1993: 63). Science, like the language of Joyce, has a self-referential structure where terms like 'atom', 'electron', 'quark' and so on, only make sense as relational categories (Lacan, 1999: 36).

Other examples might include the use of satellite navigation, the conducting of surgical operations remotely via robotic technology and so forth. The point is that with science and technology what we have are self-referring networks of signification (information data, instrumentation etc.) that not only provide consistency to the order of being but which enable the pursuit of human objectives. Science is incapable of yielding the *signatura rerum* or any externally given reality. Rather science weaves its signification(s) for 'the world' in such a way that human endeavour and purpose is rendered effectual. This is why Lacan conceives the subject of science as the subject of

unconscious: i.e. the subject of science is coterminous with signification as such and behind which there is nothing. Scientific discourse, in this sense, is always *in medias res* and makes no purchase on anything outside of its own paradigmatic terms. In this regard, Meillasoux's 'time of science' – where there is an immediate access to pre-discursive reality – is strictly a fantasy.

On these grounds, Meillasoux's conceptualization of contingency is similarly flawed. Contingency emerges in Meillasoux as the exception. Everything is subject to contingency except contingency itself, and thus contingency is ascribed the status of an absolute that is set apart. But from a Hegelian perspective this leads inevitably to an idealization of contingency; precisely, the necessity of contingency. In Hegel contingency is not something that can be set apart as a self-constituting exception, and thus it cannot be considered absolute or necessary. On the contrary, what is necessary is not contingency but internal differentiation where every particular thing is, in its very essence, constituted in and through its relation with its other. This means that finitude does not mark any external or temporal frontier - that can be overcome potentially through science and mathematics - between givenness and independent (pre-/post- subjective) reality. Just as finitude already holds infinitude (self-relating negativity) within itself (and *vice versa*), so too contingency and necessity should be thought together. Contingency arises because of the necessary constitutive failure of necessity to establish itself in its own (absolute) terms; necessity arises because of the contingent dislocation(s) that inhere as a necessary possibility within contingency as such. As Žižek puts it, what we are confronted with is the mutually interdependent and constitutive not-All of *both* necessity and contingency:

Not-All is necessary, which means that, from time to time, a contingent encounter occurs which undermines the predominant necessity (the space of possibilities sustained by this necessity), so that in it, the "impossible" happens. How do these two non-Alls relate? Since reality is contingent, we should begin with the non-All of contingency: it is out of contingency that, contingently, necessities arise. (Žižek, 2012: 636).

The Big Idea

Something similar can be said about the traditional subjective/objective distinction. Hegel makes clear that it is absurd to 'to consider subjectivity and objectivity as a fixed and abstract antithesis' (Hegel, 1991: 273). Rather we should consider the two as dialectical moments of each other where objectivity functions as the other of subjectivity and vice versa. This also informs Hegel's approach to the Idea:

The Concept, which is initially only subjective, proceeds to objectify itself by virtue of its own activity and without the help of an external material or stuff. And likewise the object is not rigid and without process; instead, its process consists in its proving itself to be that which is at the same time subjective, and this forms the advance to the Idea. (addition in Hegel, 1991: 273).

The Idea is a kind of logic of objectification without any object; it is processual not given or substantial. There is no external criterion or measure that is already there awaiting discovery. The point of 'origin' is rather a pure posited-ness or mediated-ness as such. In this regard, the human condition is one of ongoing processes of differentiation(s) that enable the effective navigation of such mediated-ness. Through science, art, philosophy, politics and so on, the mysterious alien character of 'nature' is overcome/sublated in the pursuit of historical objectives.

The Idea effectively recasts objectivity (the sense of the external) in a way that reveals the paradigmatic form of conceptual-subjective engagement. The Idea is manifested as the essential unity of Concept and objectivity and as the unity of the ideal and the real (Hegel, 1991: 286 & 288). In its mute existence, the objective realm of 'nature' is experienced as an absolute externality, the negation of subjectivity. Through dialectical engagement, this experience is sublated – there is a negation of the negation – and a consequent transformation of *both* subjectivity and objectivity. Subjectivity does not simply become reconciled with objectivity (as if mastering the mysteries that are already there); nor is there – which amounts to the same thing – an ideal synthesis of subjective-objective relations. In this regard, Hegel's philosophy is not interpretivist. That is to say, it is not as if things happen objectively, in a realm of actuality, and which are then interpreted through subjective

discourse. The point is that the very experience of objectivity already depends upon a certain subjective inscription, or what Lacan calls the gaze (where the 'I' is already included in the picture). The Idea, in this sense, signals mediateness as such and gives rise to its own sense of immediacy (or objective encounter). An eclipse of the Sun, for example, is experienced in its very objective immediacy as a certain kind of event from the position of subjective engagement (location, perceptual capability and all the forms of meaning – portent, horror, wonder, scientific opportunity etc. – that constitute its eventness).

This distinguishes Hegel from the postmodern thought of people like Rorty who tend to retain an implicit form of Kantian noumenality: i.e. that although we are bound by interpretivist discourse there is nonetheless a world 'out there' that exists in independent (unknowable) terms. For Hegel any such independence is a delusion. Just as the north and south poles of a magnet exist only in relation to each other, being itself can only be achieved through the basic principle of distinction (i.e. through constitutive otherness).

Developing this metaphor further, we might say that reality itself is structured as a kind of magnetic field that is generated by the scissorial tension between the poles of subjectivity and objectivity. These poles have no particular content in and of themselves, yet their mutual dependence and mutual thwarting is capable nevertheless of producing a tensional field of phenomenal reality.

It is against this background that we can understand Hegel's notion of the absolute Idea. The absolute Idea has no content of its own but rather reflects the point at which content passes over into a pure kind of form that is revealed as for-itself, or as self-reproducing. What is shown in the absolute Idea is not anything substantial but its very 'system of determinations' or 'currency of moments' (Hegel, 1991: 304). The absolute Idea represents the point at which the subject-object field of reality is perceived/experienced as something that is delimited as a frame of being. It is the whole that organizes and makes sense of the particular moments as a characteristic for-itself economy/configuration. In a way, it is both pure form and pure content. That is to say, the absolute

Idea expresses both the nature of form as a particular kind of content (i.e. delimitation as such as the universal content) and of content as a particular kind of form (the characteristic articulation of its moments as universal form). What is real for Hegel is the process of differentiation as such, and the delimited fields of differentiation that emerge from it historically in the guise of necessity.

'Absolute knowing' in Hegel has, consequently, nothing to do with 'knowing everything' (Solomon, 1983: 639). It is not a question of a development in the quantity of knowledge but of its quality (Solomon in Solomon & Higgins eds, 2003: 193-194). Absolute knowing is rather the recognition of the absolute limitation of the frame of being as such. The In-itself can never be grasped in a tangible sense because the In-itself is nothing but the frame of being produced through delimitation. Put in other terms, what absolute knowing 'finds' ultimately in the search for the In-itself is the field (or field-ness) of the search itself.

Meillasoux's desire to throw open the doors to the great outside is thus a false undertaking. We might say that he remains too wedded to the quantitative model of knowledge – where science is viewed as something that gains progressively on the uncorrelated real – and misses precisely this qualitative shift in the unfolding of knowledge towards an appreciation of absolute limitation. In Lacanian terms, what is missed is an appreciation of the Real-as-absolute limit; as something that is coterminous with, and constitutive of, the field of knowledge as such. The problem of epistemology is thus ultimately a problem of ontology. This has been demonstrated in the quantum physics of people like Niels Bohr who has shown how the more science closes in on the basic units of material existence; the more indeterminate they become (Barad, 2007: 127-28). It is not that epistemology reaches a certain limit while reality remains 'out there' in full independent terms (so that we have multiple 'interpretations' of something that already exists); it is rather that reality itself is ontologically, and constitutively, incomplete. The indeterminacy and incompleteness of reality cannot be epistemologically overcome (however far into the future); they are rather the very in-itself of reality as such. Nor is this a

problem that can be resolved by trying to eradicate the subjective dimension with a view to distilling the purely objective. As Žižek argues,

“objective reality” (the way we construct it through science) is a Real which cannot be experienced as reality. In its effort to grasp reality “independently of me”, mathematized science erases ‘me’ from reality, ignoring (not the transcendental way I constitute reality, but) the way I am *part* of this reality’ (Žižek, 2012: 924).

This evidently does not mean that everything can be reduced to subjective points-of-view - this would result in a banal form of perspectivism (Deleuze, 1972). The point is rather that subjectivity and objectivity are inextricably bound up with each other. Objectivism and subjectivism are equal impostors in this sense.

From Meillasoux to M-theory - Hegel in the Eleventh Dimension

Despite his stated intentions, Meillasoux does not appear to escape the Kantian universe. For Kant, the in-itself (or objective reason) resides in an independent noumenal sphere that is shrouded in eternal mystery. The world can only be experienced as a correlate of limited subjective engagement that can never arrive at the level of objective reason. Meillasoux argues that by maintaining the facticity of the correlate, the inherent incapacity to access objective reason actually becomes the way out - the Kantian incapacity is merely a reflection of a basic absence of reason. The absolute is nothing but this absence. It is on this basis that Meillasoux wishes to restore science and mathematics to their proper status as disciplines capable of disclosing the primary properties of un-reason and of describing the work of radical contingency in a way that transcends the given or subjective.

Yet Meillasoux’s critique of Kant only goes so far. That is to say, his absolute refers only to the subjective side of matters, not to the objective or substantial side. By elevating *our* incapacity to find objective reason to the level of the transcendental, contingency itself is made the ideal object of knowledge; something which is subject to the privileged jurisdiction of mathematical encoding. The very thing that remains an ontological constitutive limit for

subjectivity (i.e. radical contingency) is consequently re-epistemologized as a problem that *is* solvable ultimately through enlightened science (the Real as reconciled with realism). In this sense, Meillasoux de-Kantianizes metaphysics but only to re-Kantianize science.

Hegel, by contrast, marshals a two-sided approach and effectively dissolves the Kantian universe through the affirmation that both subjectivity and objectivity are traversed by the same lack/negativity. For Hegel there is no self-contained world or independent outdoors that can be accessed. As he puts it, both subject and substance need to be thought together:

The disparity which exists in consciousness between the 'I' and the substance which is its object is the distinction between them, the *negative* in general. This can be regarded as the *defect* of both, though it is their soul, or that which moves them. That is why some of the ancients conceived the *void* as the principle of motion, for they rightly saw the moving principle as the *negative*, though they did not as yet grasp that the negative is the self. Now, although this negative appears at first as a disparity between the 'I' and its object, it is just as much a disparity of the substance with itself. Thus what seems to happen outside of it, to be an activity directed against it, is really its own doing, and Substance shows itself to be essentially Subject. (Hegel, 1977: 21).

The outcome of the processes by which this insight is historically realized – i.e. that substance is essentially subject – results finally in a manifestation of objective spirit. The truth of the phenomenology of spirit is something that shows itself in the '*form of simplicity* which knows its object as its own self' (Hegel, 1977: 22). Does this amount to a teleology (as many commentators have claimed) in which there is ultimate reconciliation between subject and substance. Do these processes result in a 'pure form' whose moments are '*necessary and eternally stable*' (Harris, 1997: 88). Put another way, is this the highest expression of idealism?

In fact, Hegel breaks decisively not only with the Kantian opposition between subjectivity and substance *qua* external (noumenal) entities, but also with the entire idealist problematic. In Hegel, subject and substance do not stand independently of each other, and neither has a positive content of its own.

There exists rather an economy of movement between subject and substance. This economy remains impossible in the sense that there is no final outcome other than the disclosing of its own economization as such. For Hegel, essence is this economy. Subject and substance do not achieve any simple unity or identity; subject is not absorbed into substance (e.g. as human genome), nor is substance absorbed into subject (e.g. as generator of reality). There is not, in other words, a dialectical unfolding towards an absolute; rather the absolute is the dialectical unfolding itself.

In his analysis of the various forms of judgement (the interplay of the Concept and its particularities), Hegel shows how the subject is linked to some form of finitude – its content relies upon particular predicates either positively ('the rose is red') or negatively ('the rose is not red'). In a sense, the subject and the predicate may be said to be always in a game of tag with each other and only touch each other at certain points. The subject can be said to be universal insofar as it can always escape its particular predicative contents. On the other hand, the predicate can be viewed as universal because it can always outrun any particular subject (it can be applied more broadly). There is a basic ambiguity which means that everything depends on circumstance. But when it comes to the infinite judgement, things stand very differently. In infinite judgement there exists an 'empty identity-relation' which finds expression in such propositions as 'the spirit is not an elephant' or 'the spirit is spirit'; propositions which are 'correct but pointless' (Hegel, 1991: 250).

These forms of infinite judgement – which collapse in on themselves and thereby reveal the empty form of all judgements – express 'the total incommensurability of the subject and the predicate' (Hegel, 1991: 250). In other words, the subject exemplifies an impenetrable self-relating negativity that can never be fully captured or configured within predicative substance. But again, this does not mean that subject is independent of substance-predicate. Hegel is very precise in his use of the term 'incommensurability'. The subject is ultimately revealed in this form as a result of the inability of substance to complete itself. Subject emerges as the feral excess of the movements of substance.

Meillasoux reflects a long-standing Enlightenment tradition where the subject – from Marx’s universal class to Habermas’ collective rational communicator through to Fukuyama’s last man of history (and Meillasoux’s own version of this where ‘God will be the last born of humans’) – is viewed as capable of overcoming all alienation from the substance. But for Hegel, the point is rather that substance is already alienated in-itself and the subject is precisely an effect of this alienation. As he puts it,

the living Substance is being which is in truth *Subject*, or, what is the same, is in truth actual only in so far as it is the movement positing itself, or is the mediation of its self-othering with itself. The Substance is, as Subject, pure, *simple negativity*, and is for this very reason the bifurcation of the simple; it is the doubling which sets up opposition, and then again the negation of this indifferent diversity and of its anti-thesis (the immediate simplicity). Only this self-*restoring* same-ness, or this reflection of otherness within itself – not an *original* or *immediate* unity as such – is the True. It is the process of its own becoming, the circle that presupposes its end as its goal, having its end also as its beginning; and only by being worked out to its end, is it actual. (Hegel, 1997: 10).

In showing the essential connectedness of subject and substance through non-identity, Hegel advances beyond Kant. Subject is not a separate entity, but the inherent negativity of substance itself. Equally, substance has no independence ‘out there’; it is rather a continuous process of differentiation driven by this negativity. When Harris speaks of Hegel as positing a ‘self-moving substance’ (1997: 87), we should perhaps add two further points: first, in its basic nature, substance is nothing but movement; second, this movement is generated by a kind of absolute inertia: namely, inward opposition and the essential failure of substance to achieve full being. Contradiction itself becomes that which ‘moves the world’ (addition in Hegel, 1991: 187).

From this point of view, science cannot be regarded as a continuum of neutral knowledge that gains progressively on an indifferent world/substance; precisely because there is nothing substantial to be gained. We cannot penetrate to an underlying pre-subjective reality because we are already included within the negativity that moves the world and thus do not have an

independent standpoint. In this sense, we are always in a condition of being *in medias res*. The first quantum theorist, Max Planck, also makes this point: 'Science cannot solve the ultimate mystery of nature. And that is because, in the last analysis, we ourselves are part of nature and therefore part of the mystery that we are trying to solve' (Planck, 1981: 217).

The move from Kant to Hegel is something that continues to be played out at every level in science. That is to say, what science is tending to reveal is not the structure of an indifferent external world, but rather a world without form or purpose and without any independent markers of certainty; in short, science is revealing the nature of substance as subject. Not only do we have 'ecology without nature' (Morton, 2007), we also have bio-engineering without Biology (the capacity to directly synthesize bacterium and to create living forms), neuro-science without experience (the direct instilling of states of consciousness), mathematics without order (the capacity to manipulate the world through meaningless numbers/formulae) right through to quantum physics and its affirmation of the inherent indeterminacy of all reality (creating the possibility of artificially generating universes without God). In this context, Nature is dissolving and the world (to borrow a term from Kant) is being rendered increasingly sublime. Far from apprehending any ideal in Nature, science is revealing the unsettling presence of the void that, in turn, de-idealizes science as such: i.e. it shows it to be part of mediated-ness without any external point of reflection.

In other words, science is not gravitating towards any teleological outcome or hidden substantialization but rather the Hegelian absolute. What is being reached is an understanding of infinite otherness (that everything relies upon a certain differentiating cut that produces its other). As in the Lacanian traversing of the fantasy, science is not achieving a final breakthrough into a realm of noumenal substance, but rather an appreciation of absolute limit/infinity – the empty frame as the 'object' of all objectivity (an object that 'requires' subjectivisation – the presence of the observer). From this viewpoint we might say that while Meillassoux still hopes for (unmediated/pre-subjective) objects, Hegel affirms that there exists only the empty frame. Or to put in

Lacanian terms, there exists only object-a (the counterpoint to the subject-as-void).

The Hegelian logic is also to be found in the recent developments surrounding M-theory - where 'M' stands for 'membrane' but which is also colloquially referred to by scientists as variously 'mystery', 'mad' and 'mother' – and the conceptual discovery of an eleventh dimension. This dimension is not merely one in the series of dimensions but is closer to a kind of dimension of dimensionality as such. If our universe is a membrane then the eleventh dimension is that which contains all possible membranes; in short, it is the very frame of the multiverse or parallel universes. What is found here is a kind of cosmic *disjecta membra* where the night of the world meets the night of the multiverse. This dimension is not a tranquil free-flowing realm. On the contrary, it is a realm of basic conflict and violence where membranes encounter each other as turbulent waves. Occasionally these waves crash into each other and there occurs a 'big bang' in which a new universe, with new forms of matter, emerges (potentially) as a by-product. Far from the cosmic harmony of the spheres, the multiverse is something that reveals the madness of the membranes. The dialectical twist here would be that all these M-mobilizations are themselves the result of an inherent failure/inertia: that is, a basic incapacity of the multiverse to complete itself – its dynamism arises from being essentially jammed. Of course, it may well be the case that M-theory is ultimately wrong or incomplete. Yet the Hegelian wager is that whatever theoretical approximation comes to the fore it will always reflect this aspect of primordial constitutive madness and/or inconsistency.

Against this background, the big bang can no longer be considered as a singularity; rather it is something that itself results from an ongoing process of splitting and differentiation. Our universe does not function in its own terms but is something that achieves its consistency through distinguishing itself from its Other. This can also be seen in the most fundamental sense of gravity that is neither internally generated nor closed within our universe. The physicist Lisa Randall (2006) explains that the weakness of gravity is something that results from a certain tensional differentiation wherein gravity

leaches into our own universe (indeed it warps and structures it) via the eleventh dimension and the presence of other (parallel) universes. It is the almost negligible differential force (the incredible weak field of gravity) – the very ‘stuff’ of splitting and differentiation - that is absolutely decisive in the constitution of the universe. Viewed through this lens, we might argue that Hegel is the most consequent of quantum theorists.

In Meillassoux, and even in Badiou, there is arguably an implicit kind of holism at play. Notwithstanding the emphasis that is given to contingency and pure multiplicity, the basic idea is that mathematics is capable of capturing/representing the latter in authentic terms as a full disclosure (Meillassoux, 2011: 103; Badiou, 2005: 43). But from a Hegelian viewpoint, this is not the heart of the matter. It is not that there are real contingent possibilities/multiplicities that are awaiting discovery by mathematics. For Hegel, the point is that such possibilities are the result of interior distinctions. Difference does not reside in any realm of the transfinite or order of being (and which would *then* be subject to representation). Rather it is an effect of differentiation itself: that is, a *process* of inherent tension, splitting and struggle. Taking Heraclitus’ standpoint that ‘everything flows’, Hegel affirms that the flows that take place are simply between something and its other but, crucially, within the something itself. This inward otherness – the essential contradiction of being-there – produces a basic alterity that drives every something beyond itself (Hegel, 1991: 149). Contradiction, alterity and movement are intrinsic; the very stuff of Hegelian dialectics.

Much ado about *Den* - The Organon of the Undead

There is no entity that can coincide with itself. And this also extends to nothing as such. Nothing is the mother (or, perhaps, mOther) of all differentiation. In quantum physics, the widely held view is that the universe came from nothing (Kaku, 2006: 93-96). This nothing is not simply empty but manifests itself in two distinct modes: false vacuum and true vacuum. In each case, the nothing reaches beyond itself and, along the lines of Hegel, externalizes its own limit

(its failure to coincide with itself) in the emergence of something. In a false vacuum, there is the appearance of symmetry and stillness. But, like water that is contained in a dam, this stillness is the result of highly concentrated pressure-energy. Nothing exists here in a state of compression and which, if pierced, can release torrents of energy and matter at an exponential rate. In this way, universes 'can spring out of the vacuum almost effortlessly' (Kaku, 2006: 94). This is precisely the context for a big bang. In this aspect, nothing is constituted as an intense containment of (potential) something(s).

In a true vacuum there already exists asymmetry and differentiation, but the total amount of energy-charge adds up to (near) zero - the positive and negative charges balance each other out. The true vacuum is a kind of dialectical reversal of the false vacuum. In the false vacuum, enormous amounts of energy are required to sustain its zero charge (absolute symmetry). In a true vacuum, it is the differential movement itself – the constant recycling of positive and negative charges – that results in the zero-sum of energy. The true vacuum is analogous to a gyroscope in which, as a consequence of the continuously spinning energy, the forces balance each other out and a dynamic stability is achieved. In this aspect, nothing results directly from something but this time as something that is continuously re-configured through cyclical motion. In other words, the differentiated character of the universe is one that is produced through drive and whose net result is zero. This nothing is the ultimate substance upon which the subject (as pure drive) can never finally gain and which, at the same time, actively produces the subject as something that is always in excess of substance. Differentiation in, for example, the form of fossils does not speak to any pre-subjective reality but rather to the paradoxical something-in-drive whose object-cause is nothing. The fossil of all forms of differentiation is differentiation itself. From an energy perspective, something is cheaper to maintain than nothing (the false vacuum). Something, as Žižek puts it, is actually less than nothing (Žižek, 2012: 945). From the viewpoint of the cosmos, something-in-drive is more efficient than nothing.

We can also see how the logic of the two vacuums is played out in the field of politics. In very broad terms, totalitarian regimes tend to reflect the structure of the false vacuum in the sense that the state and the people are placed under immense pressure to ensure that nothing disturbs the power regime. With modern democracy, by contrast, the model is closer to the true vacuum in that the people are bombarded with demands to participate in all kinds of political and socio-cultural activity in order to neutralise any real action.

In this context, however, Hegel can be said to have reached a limit and needs to be supplemented by Freud. As Žižek points out, Hegel does not reach the level of pure mechanical repetition, or repetition as its own economy (Žižek, 2012: 491; Daly, 2007: 10). While there is repetition in Hegel, this tends to be of a transformative nature (Caesar dies as an individual but the title is repeated at a universal level). With Freud, and as developed by Lacan, there is a new and fundamental emphasis on death drive as a pure empty form of repetition that is self-sustaining (e.g. the compulsive gambler whose goal is the next win but whose essential aim is the perpetuation of gambling as such). In Hegel, the central idea is that being and nothing have to be thought together as a continuous process of becoming (Hegel, 1991: 141). This becoming is always towards something other and is the very basis of Hegelian dialectics. Here negativity tends to be thought in terms of the deforming and reforming of the positive (negation is always, at some level, negation of something). But as Žižek argues, this renders Hegel unable to grasp the 'non-dialectizable core' of dialectics itself (Žižek, 2012: 493). That is to say, what is overlooked in Hegel is the way in which negativity is not simply a transformational moment (or series of moments) but is also something that achieves animation in its own terms: the death drive of pure repetition. In this way, all differential movement is simultaneously accompanied by the spectral persistence of negativity itself as a kind of *danse macabre*; this 'obscene infinity...of the living dead' (Žižek, 2012: 493).

This is also why we should be suspicious of Brassier's perspective on thought and extinction. Like Meillasoux, Brassier maintains the capacity of thought 'to think a world without thought' (Meillasoux, 2011: 28). This capacity is derived

from what Brassier calls the 'organon of extinction' (Brassier, 2007: 239). Brassier begins with the Freudian notion of death drive, defined as a 'primordial pull back towards the inorganic' (i.e. the way in which life is drawn towards the lifeless void or aboriginal death) (Brassier, 2007: 235). By securing this notion, Brassier argues, thought comes to the realist realization that 'inanimate things existed before living ones' (Freud quoted by Brassier, 2007: 235). In other words, the death drive testifies to an inorganic order of things, an underlying objective reality, as the effective in-itself from whence all organic life (all sense of purpose) springs (Brassier, 2007: 235-36). In this way, thought is able to achieve an '*adequation without correspondence* between the objective reality of extinction and the subjective knowledge of the trauma to which it gives rise' (Brassier, 2007: 239).

But as Žižek makes clear, the Freudian death drive can also be given a Lacanian reading. In this context, death drive has nothing to do with any kind of organic death; rather it is an inexorable 'will to begin again' (Lacan, 1992: 212) that persists beyond both life and death. The drive is not towards death but towards *itself*. Far from referring to an aboriginal death, the death drive is more an aboriginal cyclicity; a self-referencing incompleteness (an asymmetrical striving for symmetry) that gives rise to the tensional phenomenological field of subject and object-a. The repetition in the death drive does not mark an eschatological return to the in-itself of a pre-given inorganic-ness; it is the repetition *as such* which is the in-itself. The repetition does not testify to any underlying order but precisely the opposite: an empty stuck-ness that nonetheless persists. Put in other terms, what needs to be grasped is not the organon of extinction but the organon of the undead.

The drive, or compulsion to repeat, is symptomatic of a fundamental blockage: 'we repeat because it is impossible directly to affirm' (Žižek, 2012: 493). This blockage connotes a kind of pre-ontological excess. While Hegel does not directly address this dimension of excess it is, to some extent, implicit in his argument concerning the way in which being and nothing continuously interact in the process of becoming. What needs to be added

here is that (un-)becoming not only flows between being and nothing but is inherent to nothing as such.

Žižek argues that there are, in fact, two nothings that exist in a relation of parallax (Žižek, 2012: 949-50). The Hegelian form of nothing exists essentially as a negation of something; an emptying of content. Yet there is also a further step that can be taken which is not exactly a negation of the negation but is more of a subtraction from nothing. This subtraction from nothing is neither nothing nor something, but results in a kind of magnitude-in-nothingness; it is the void in-itself that contains nothing as one of its possibilities. This nothingness is the *den* of which Democritus speaks. While nothing refers to (and depends on) the absence of something, nothingness-*den* subsists in its own terms as 'a thing of nothing' (Žižek, 2012: 60). *Den* can be seen as a kind of pure unrest that reflects the unrest of the multiverse. It exists as a pre-ontological excess that overflows both nothing and something. It is simultaneously 'more than Something and less than Nothing' (Žižek, 2012: 493), and inscribes a basic imbalance/disturbance in every world. This nothingness-*den* is not zero, where zero would represent a certain balance of inputs and outputs. On the contrary, it is that which undermines all balance and symmetry. *Den* is not empty, it potentially contains 'everything' in its aspect of non-all – the spectral abyss of inconsistent multiplicity that shines through all being. From this perspective we might also say that *den* functions as a kind of embodiment of blockage itself – a pure form of impedance/inconsistency – that continuously tries (and fails) to resolve itself. It is both excess and impedance that sets nothing and something to work in dialectical economies. As such, *den* is a primordial surplus without any original measure.

The pre-ontological nothingness-*den* is the very 'ground' from which the dialectics of being and nothing spring; it is something that first has to be negated in order for nothing to emerge as a basic background against which something can then appear (Žižek, 2012: 945). *Den* as cause is a basic distortion that is not simply originary but is co-extensive with every order of being (in this respect it is consonant with the Lacanian notion of the Real).

The generation of 'reality' takes place as a distortion of this distortion through the presence of subject – a subject that serves to delimit a field of phenomenal consistency. Yet here we are returned to Hegel. In his engagement with the atomistic perspective of Leucippus and Democritus, Hegel affirms that the void and the atom, and the vacuum and the plenum, should not be conceived in external terms (as if the atom/plenum constituted an independent positivity filling up the negative void). For Hegel, atoms are not indivisible and 'the plenum has likewise negativity in itself' (Hegel, 1995: 305). Far from being uniform or linear in its development, the plenum is inwardly (objectively) differentiated and there is no point of external reflection upon it. As part of the same 'stuff', our engagement with this plenum (and void) is equally one of differentiation and cut.

In a way, Meillasoux remains at the level of the atomists. That is to say, he wants to provide a kind of external narrative, through mathematics, on the development of contingency. In doing this, he overlooks the contingency of narrativity/engagement as such; in quantum terms, the way in which the plenum is 'resolved' into a certain phenomenal consistency. His hyperchaos is ultimately a limited one because he does not take on board the contingency of differential cut (of narrativity/engagement); a cut that is effectively the subject in its incommensurability with substance. Science is not something through which we proceed to mathematical mastery or virtual divinity, but a notional field that progressively refines our relationship with the cut. All complexity and necessity is derived from the contingency of the cut. It is through this cut that infinity shows itself, not after but through finitude.

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