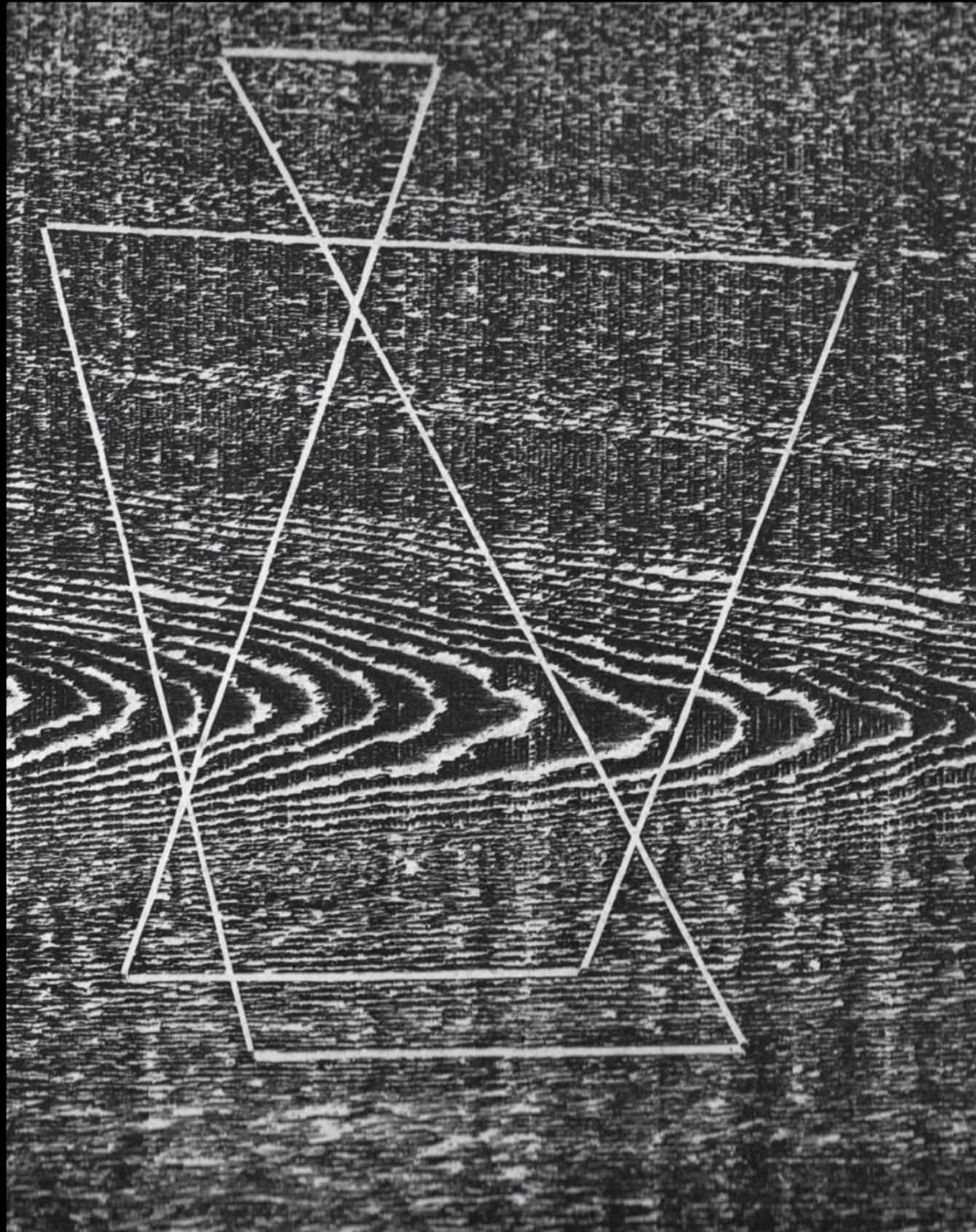


SPECIAL ISSUE 50 APR 17 JIM SCHOFIELD



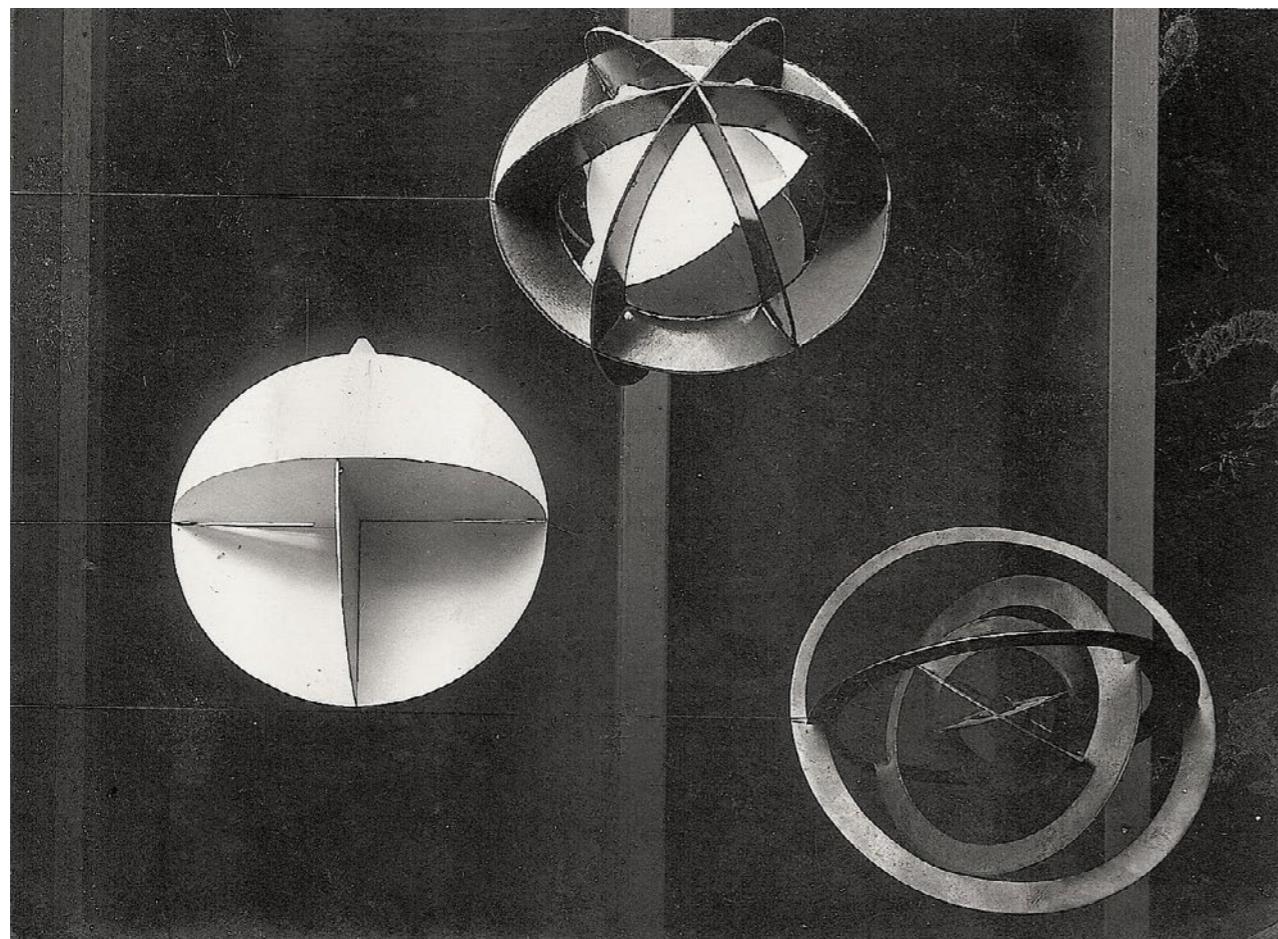
SHAPE JOURNAL

THE ONTOLOGY OF QUANTUM PHYSICS

A CRITIQUE OF SLAVOJ ZIZEK'S CHAPTER 'THE ONTOLOGY OF QUANTUM PHYSICS' FROM 'LESS THAN NOTHING'
HOLISM / THE LIMITS OF ABSTRACTION / DIALECTICAL CONTRADICTION / THE GROUNDS FOR A ZIZEK CRITIQUE

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The Ontology of Quantum Physics

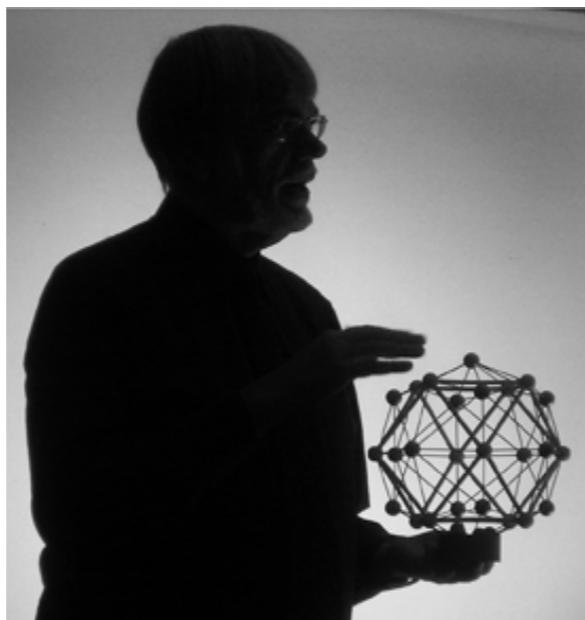
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Introduction

Reclaiming Science From The Idealists



Welcome to the 50th Special Issue of the SHAPE Journal.

This edition comprises a thorough critique of Slavoj Žižek's *The Ontology of Quantum Physics* from his book *Less Than Nothing*, including an appendix of supplementary papers by this author, with the intention of informing the reader of the philosophical bases for this approach.

Ever since Lenin's damning critique of the Empirio Criticism Stance of scientists Poincaré & Mach, early in the 20th century, there has been a crucial, and ever more urgent need, to "complete the job", by tackling the mess that was, and still is, the consensus Philosophy of Physics, which for centuries has been a contradictory amalgam of Materialism, Idealism and Pragmatism.

The writing was already on the wall, even in Lenin's time, following the discovery of the Quantum - a discrete, particle-like alternative to the prior conception of propagating electromagnetic Radiation as an extended wave - in a then still undetected Substrate or Medium, which was termed the Aether.

The problem was intensified further by Einstein's successful explanation of The Photo Electric Effect, entirely in terms of such an entity, and, an increasing number of important experiments were regularly calling the consensus amalgamated-Philosophy into question

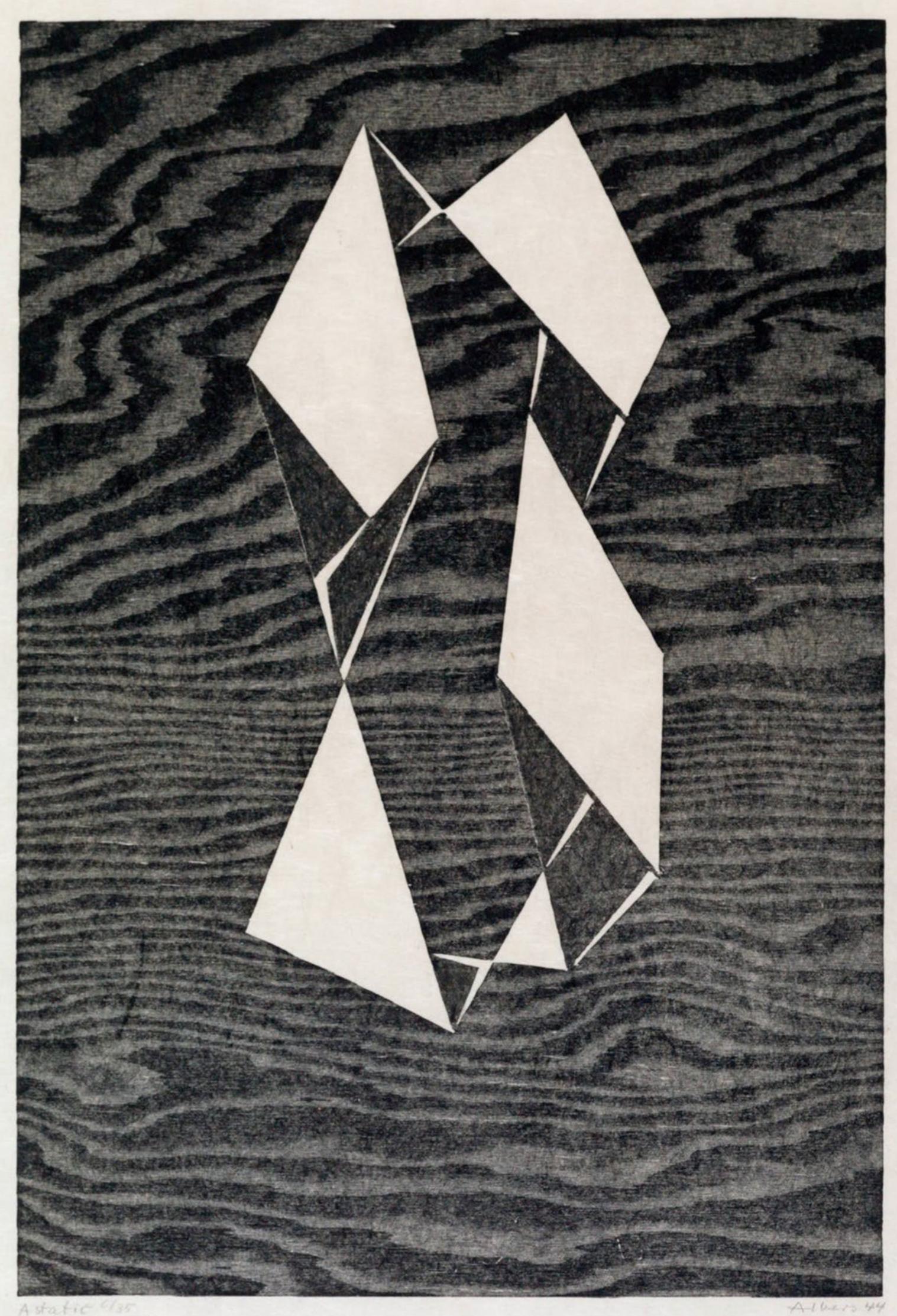
literally all the time. Ever since Hegel, who revealed many important flaws in the universally-used Formal Logic, the search had been on in Philosophy, for a means of making Logic "scientific". Hegel had created Dialectics as a better alternative, and aimed to use it to develop a "Science of Logic".

While, his best student Karl Marx, took things even further by transferring Dialectics, wholesale, from Idealism into a wholly materialist Stance - yet markedly and significantly different from the scientists' universally-employed Mechanical Materialism!

But, neither of these great men succeeded in achieving their objectives, and the reasons were, first, that the Idealist stance was purely based upon Human Thought, while, second, that Science was a contradictory mess, while being entirely appropriate, just as it stood, to be the effective basis of Technology.

Marx correctly concentrated upon first tackling Capitalist Economics, but it, more or less, took him the rest of his Life.

Indeed, the methods he developed were not overtly described and taught. His comrade, Engels, concentrated upon showing how compatible Marxism and Nature





were, without tackling the stance of the scientists themselves, by both establishing and describing the Dialectical Materialist Methodology.

Indeed, if Hegel and Marx were correct: the next step had to be the extension of Dialectical Philosophy to embrace Science, while rigorously fighting to remedy the many contradictions endemic in the current scientific philosophical stance.

But also, at the same time, Marxism, itself, could never even approach being comprehensive, without the conquest and integration of Science into its own heart!

It wasn't done!

And, when Science's Crisis deepened-rapidly, within Sub Atomic Physics, it had nowhere to go, except the major retreat into Idealism embodied in Bohr and Heisenberg's Copenhagen Interpretation of Quantum Theory.

By 1927, at the Solvay Conference, the Copenhagenists won the day against Einstein and Schrödinger, and there wasn't a single Marxist available able to mount a fight to reclaim Science for Materialism via Dialectics.

And worse was yet to come for both disciplines.

The decline in the Marxist tradition due to the victory of Stalinism in the Soviet Union, and the lack of any significant developments elsewhere, either theoretically or organisationally, was mirrored by a steady decline in what was termed "Theory" in Sub Atomic Physics, as the mounting contradictions in the "New Stance," led to increasing amounts of Pure Mathematics, propped up by unfounded speculations - from Superposition, Quantum Entanglement, and Physical Singularities, to String Theory, Quantum Loop Gravity, Super Symmetry and even Multiverses!

Surprisingly, increasing numbers of self-professed Marxists lined up to even embrace the New Physics, and even to claim that it was "Dialectical"!

Clearly, the long awaited tackling of Science by Marxists, would also be the only means of its own salvation!

In Cambridge University, self-professed "Marxists" like Gliniecki, along with many others in the United Kingdom, were now extolling the virtues of Copenhagen, and even the "Marxist" Žižek has written a Chapter entitled *The Ontology of Quantum Physics* in his recent book - taking a similar line.

But, enough is enough!

This fake Marxist must be exposed for what he is, as part of the major task of defeating the Idealist Copenhagen Interpretation, which is now vital. It must be taken on, and completed NOW!

And, after many years addressing this very task, this Marxist, who is also a physicist by profession and experience, as well as a published philosopher, will now commence the final assault by demolishing Žižek.

Jim Schofield
April 2017

A Critique of Slavoj Žižek's *The Ontology of Quantum Physics*

by Jim Schofield

Bases

In a previous essay dealing with a different chapter of Žižek's *Less Than Nothing*, entitled *The Limits of Hegel*, I attempted to deliver the whole of his contribution, word-for-word, interspersed with comments by myself, at key points of difference. The idea was to ensure full justice to Žižek's own stance, while also delivering a critical alternative.

But, it wasn't entirely successful, as the whole trajectory of the interaction was determined by Žižek's own meandering, sometimes confusing, and always academic path, along with his often un-admitted premises, all of which, if left unimpeded, were not at all conducive to easy understanding.

So here, I will revert to setting my own, hopefully coherent trajectory, necessarily inoculated with sufficient and appropriate quotes from Žižek's account, to do justice to both his position and my criticisms. I will, however, always separate his and my contributions, to avoid his methods, which often mean you are not quite sure who is saying what.

I feel it essential, therefore, from the outset, to establish a major difference from Žižek. I am a professional physicist, and he, most certainly, is not!

Before getting into the current task, I must initially admit to a significant difficulty, which has precipitated the present situation.

I'm afraid the extremely long history involved in Marxism's failure to address Science, and its evident philosophical failings, have been made inevitable by the unavailability of any trained physicists - that are also Marxist theorists. Indeed, despite a lifetime in revolutionary politics I never met a single one.

And, to also guarantee that the task would never even be attempted, there was, in addition, the steady but inexorable decline in the necessary and constant attention to the development of Marxist Philosophy itself, or even, remarkably, even in its essential and effective use politically. "Activism still rules OK!", in revolutionary circles.

So, with these two major weaknesses, absolutely nothing was done in combating the canker of the Copenhagen Interpretation. Yet, philosophically, it was certainly the major and essential task for Marxism to undertake.

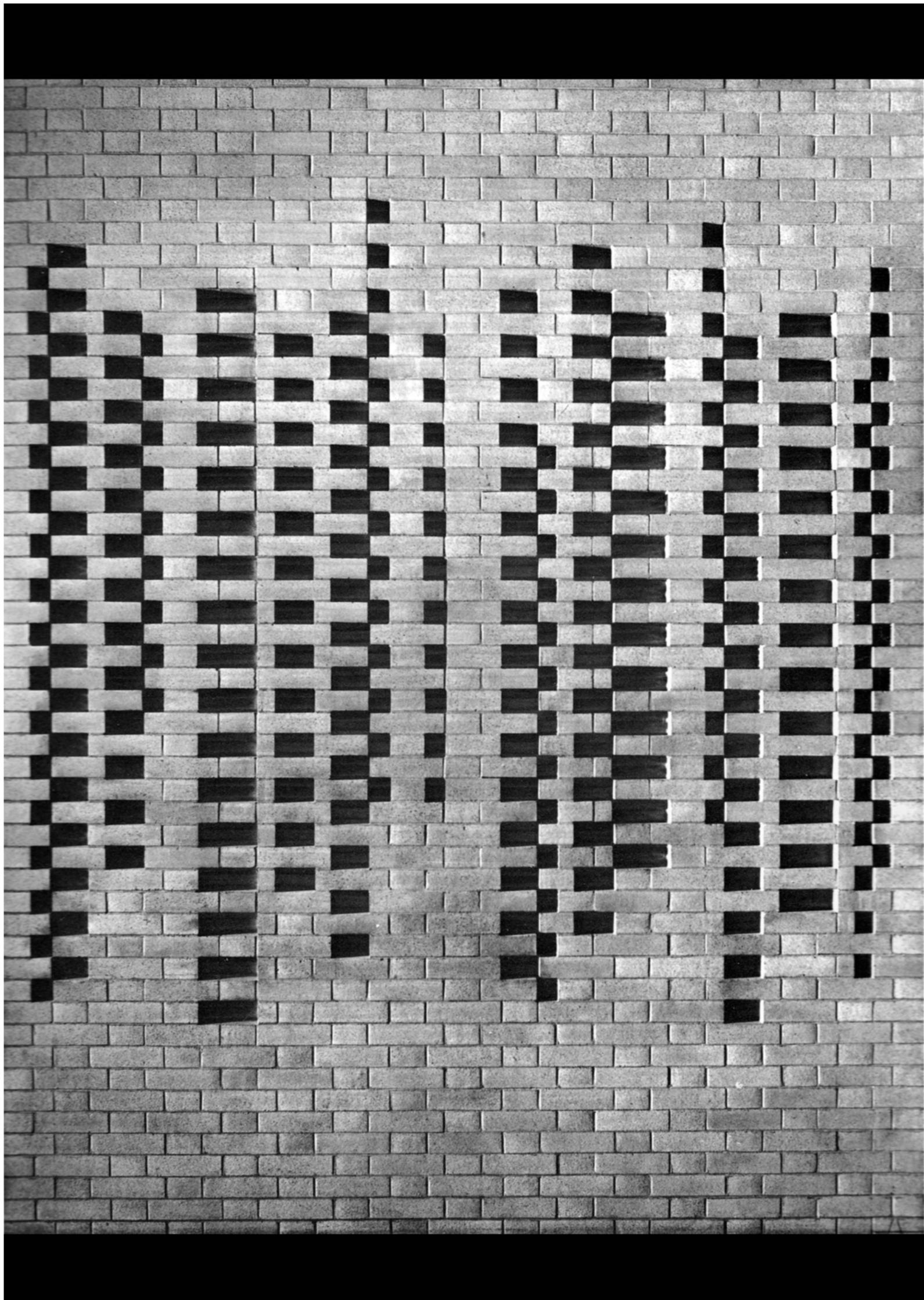
From age 19, as a first year student in Physics at University, I knew that Copenhagen was rubbish, long before I came into contact with Marxism: indeed my opposition to it was the spur to reading Lenin's book *Materialism and Empirio Criticism*.

But, in spite of bringing it up with my comrades after I joined the Movement, I never found any encouragement, or even interest, in my opposition to those ideas. They were considered irrelevant by my comrades: but they were most certainly wrong.

So, let us now take the stance of Žižek - a modern-day, self-professed, academic Marxist - truly prolific in his publications, videos and even films, but a "sort of" supporter of the Copenhagen stance in Physics!

We have to start with Žižek's own initial points in his piece, with a few telling quotes namely:-

"The key question is thus: how is thought possible in a universe of matter, how can it arise out of matter?"



And, in addition:-

"Like thought, the subject (Self) is also immaterial: its Oneness, its self-identity, is not reducible to its material support."

And finally:-

"I am precisely not my body: the Self can only arise against the background of the death of its substantial being, of what it is "objectively"."

So, what ground is he establishing there, for his subsequent ideas upon Quantum Physics? They certainly don't gel with my own conceptions of Marxism.

And, his later rejection of the whole idea of Levels in Reality - the hierarchy that separates Mechanistic Matter, from Life, and later both of those from Consciousness, which Žižek emphatically rejects. Yet, what is his alternative?

As both a-Marxist-and-a-physicist, myself, who has spent a considerable amount of time addressing these questions, to finally come up with a Theory of Emergences - that tackles these problems, via a careful study of Emergent Events at many different Levels, I have come up with a conclusion that is very different to Žižek's.

In every single case that I studied, there was an undoubtedly producing of a wholly New Level, with its own new, causal relations and an evident, and consequent self-maintained stability, achieved by a whole series of interacting subsystems, systems and super-systems, produced by what I have termed Truly Natural Selection - a much more general form of competitive selection, clearly acting upon competing, yet totally non-living processes and systems of processes, and interacting by very different means to those conceived of by Charles Darwin - for living, reproducing and competing populations of life-forms.

Later, Žižek talks about transcendent means for his "immaterial" products, which sounds very dialectical, as much, perhaps, as those found by Hegel, when addressing the rational impasses always caused by flaws in their assumed premises, which every-single-time always generated contradictory Dichotomous Pairs of concepts. NOTE: Pairs such as Zeno's Continuity and Discreteness in his Movement Paradoxes.

But, at this stage, at least, and even later, when he mentions his "Transcendences", he doesn't use it as "transcending the rational impasse" as Hegel certainly does!

He goes on to say:-

"So, again, how can one explain the rise of subjectivity out of the "incomplete" ontology, how are these two dimensions (the abyss/void of subjectivity, and the Incompleteness of reality) to be thought together?"

Do you see what I mean by his un-admitted premises?

He is referring to the impossibility of achieving Absolute Truth in Thought, on the one hand, yet the clear effectiveness of the partial truths resident in the Objective Content that we can, and indeed do, manage to extract, on the other.

What is implicit in this, has to be the nature, scope, power and even the crucial insufficiencies of the Abstractions that we recognise and extract!

He then suggests:-

"We should apply here something like a weak anthropic principle: how should the Real be structured so that it allows for the emergence of subjectivity (in its autonomous efficacy, not as a mere "user's illusion")?"

Wow! From this you wouldn't get even Hegel's conclusions about resolving Dichotomous Pairs by the study and correction of underlying premises, and also, because he isn't a scientist, by the underlying real basis in concrete Reality for Hegel's Dialectical tenets concerning opposites.

Without the necessary scientific understanding of multiple, mutually-affecting causal factors, he has NO non-cerebral explanation for what he finds!

To really understand the holist standpoint, he should go back to The Buddha, himself, where in the brilliant Loka Sutta, he clearly involves Recursion at every single level of processing necessary to grasp the dynamics of change in conceptualising Reality!

Though, he must be at least aware of The Buddha's result when he says:-

"....subjectivity is always already part of the Absolute, and reality is not even thinkable without subjectivity"

It is nowhere near as clear, nor as well-founded, as the modern Marxist developments, based upon the damning criticism of the Copenhagen Stance.

A paragraph follows, in which he mentions Heidegger, Brassier, Meillassoux and Hartmann, in quick succession, who clearly don't agree with him or each other or whatever.

But, surely, a clear and full explanation, of his own basis at this point would be better?

Finding Reality?

Having "established" his bases, Žižek attempts to link in the inventions of Copenhagen Quantum Physics Theory into his "dialectical" scheme, with the following:-

"Shamelessly ignoring the objection that we are confounding ontological and empirical levels, here we must invoke quantum physics: it is the collapse of the quantum waves in the act of perception which fixes quantum oscillations into a single objective reality."

Is Žižek here, in his own words, "shamelessly" invokes the nonsense that it is the "act of perception", which the Copenhageners insist actually switches the nature of a perceived entity between being a "particle" and being a "wave", or vice-versa, and so, which also could exactly be what produces the Illusory-but-somehow-useable-Reality, which we extract when making all our Abstractions?

Clearly, if that is what he is claiming, then he must accept the Copenhagen Interpretation, but, maybe, as a feature of our mind's-perceiving, whereas with the physicists it is certainly a feature of Reality itself - the entity is said to be both-simultaneously, and, with our intervention, we actually cause which aspect is displayed, and hence perceived.

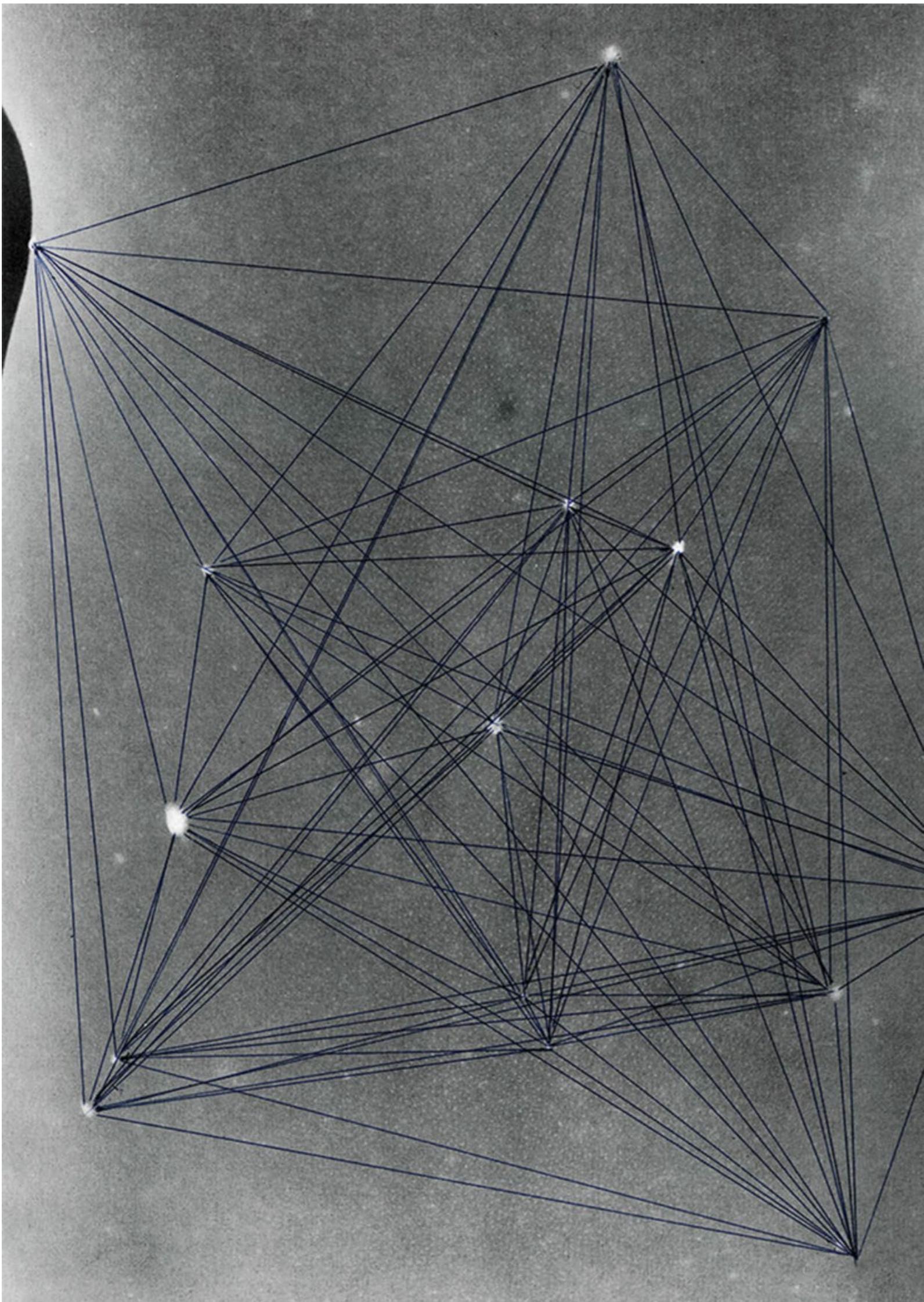
Before going any further, however, it is essential to reveal that this Copenhagen Myth has been debunked by this Marxist, Jim Schofield, in his *Theory of the Double Slit Experiments*, in which he completely resolves all the anomalies that are claimed to irrevocably establish Wave/Particle Duality, via recursive interactions between the causing entities, an actually-existing Universal Substrate, and the Double Slits themselves.

And, further research is also rapidly disposing of the other constructs in the Copenhagen Stance.

It is clear why I condemn Žižek for venturing into Quantum Physics without the necessary understanding of that Science.

Indeed, Bohr and Heisenberg's Interpretation of the anomalies of the Quantum World, was achieved only by abandoning the Materialist strand in the Materialism-Idealism-Pragmatism amalgam that was previously the sorry state of Physics philosophically, and opting, instead, for only the Idealist/Pragmatist stance, with all the alarming consequences that have emerged since.

Many physicists could not accept the new stance, in the first decades of the 20th century, but by still insisting upon the old amalgam as the only alternative, they, therefore, prevented themselves from making



any progress at all! The physicists were totally unable to overcome the problems of the old stance, and, alternatively, were diverted into unavoidable speculation, by the inadequacies of the new stance.

What Science required was, clearly, a major philosophical overhaul, impossible via Academic Philosophy, but entirely possible via the revolutions in Philosophy, started by Hegel, and carried further by Marx.

Yet, the possibilities promised by this were never seriously pursued. The Marxists had other, very-pressing, political priorities, and totally neglected this vital next stage.

And, proceeding with Žižek's account, his unscientific meanderings continue with:-

"How do we know that our Milky Way is not just a speck of dust in another universe?"

Followed by:-

"Why, when we think about aliens, do we always accept that, though they may be smaller or larger than us, they nonetheless live in a world which is proportionally of the same order of greatness as ours? Perhaps aliens are already here, but just so large or so small that we do not even notice each other."

Once more, his ignorance of Science is breathtaking; what he muses about here takes absolutely no account of what is, indeed, already known - particularly about Energy, on literally every scale, and Evolution, as evidenced in billions of years of fossils in the rocks beneath our feet.

Finally he says:-

"...if we were to observe ourselves from too close (or too far), there would be no meaning or thought discernible in our acts, and our brain would be just a tiny (or gigantic) piece of living matter."

Once again, across the Sciences, truly gigantic ranges are indeed observed, studied, explained and inter-related: does he know anything?

And, does anyone still doubt that he is NOT a Dialectical Materialist, but a kind of Hegelian Dialectician, almost totally ignorant of Science, but insistently sticking to his Marxist mask, with his elaborate disguise of complicated,

purely-cerebral Dialectics? And, after a riddle of "In itself"s and "For itself"s he says:-

"How can we pass from appearance For-us to reality In-itself?"

Of course, moving on from Hegel's many revealed rational Impasses, and consequent Dichotomous Pairs of contradictory concepts, that great master not only found individual transcensions via critical searches, criticisms and corrections of the underlying premises involved - each time moving us closer to the Absolute Truth, but never getting there, but also he followed it up with more general and involved studies of Opposites, and the ways to find new balance points between them in particular contexts.

Clearly, it was always a matter of increasing the Objective Content - the partial, relative truths in our conceptions, to constantly, and then regularly, increase their objectivity. It defines the useful-relatives on the way to an unreachable Absolute!

Other throw away lines reveal this "Marxist Rebel", as a most conservative resident within the current consensus in Science. He hasn't said much as yet, but if we add:-

"...if we accept the hypothesis of the Big Bang..... there is, in this case, a zero-point of measurement (the singularity of the beginning) as well as the All (of the finite universe)"

And, this too is *entirely* idealist!

The very idea of a Singularity is lifted directly from Mathematics, where, in the actual total failures of purely formal relations, we get false terminations such as asymptotes (to infinity) or vanishings (to zero), which reflect absolutely NO real world situation at all, but only signal that an actual total failure of means has occurred, but which mathematicians choose to call Singularities.

They don't ever mean anything concrete.

Now, this philosopher(?) calls himself a Marxist?

He is no such thing! Basic revolutionary stances taken by Marx to ground Idealist Philosophy in something concrete, via switching to Materialism, and the beginning of the absolutely necessary integration with the gains

achieved by Science, has been twisted by Žižek into an embracing of the most debilitating aspects of idealism in Mathematics into a betrayal of that glorious intention.

And, he goes on further to say:-

"It may appear that the basic defining feature of materialism is a commonsense trust in the reality of the external world - we do not live in the fancies of our imagination, caught up in its web, there is a rich and full-blooded world open to us out there. But, this is the premise any serious form of dialectical materialism has to do away with: there is no "objective" reality..."

Once more, Žižek abandons Materialism for a version of Dialectics, by ignoring the crucial trajectory of Understanding pursued and unavoidable for Mankind, but brilliantly enabled as an on-going improvable method, for the first time, by Marx's Dialectical Materialism.

I believe that in condemning Mechanical Materialism, he throws the baby out with the bathwater, and is left with his true love - Hegelian Dialectics once more.

He uses the term - "objective reality" as if it is merely primitive Common Sense, and hence a major mistake. But "objective" means Real, and the aim of Dialectical Materialism is to constantly improve the Objective Content - the parts or aspects of the Truth in our current Understanding.

For he puts it as:-

"...every reality is already transcendently constituted. "Reality" is not the transcendent hard core that eludes our grasp, accessible to us only in a distorted perspectival approach; it is rather the very gap that separates different perspectival approaches."

So, which version do you think is correct?

And, Žižek then confirms my assessment of him with:-

"The epistemological passage from classical physics to the theory of relativity did not mean that this shift in our knowledge was correlated to a shift in nature itself...."

But, let us be absolutely clear: Einstein did NOT explain Gravity scientifically. He only described it purely

mathematically - that is idealistically! His Space-Time Continuum wasn't an actually existing thing: it was a brilliant formal analogue only, for something as yet totally unexplained.

It was similar in that respect to James Clerk Maxwell's Model of the supposed Ether Medium, filling all of Space. That too was merely a brilliant analogue of an as yet unexplained "Empty Space".

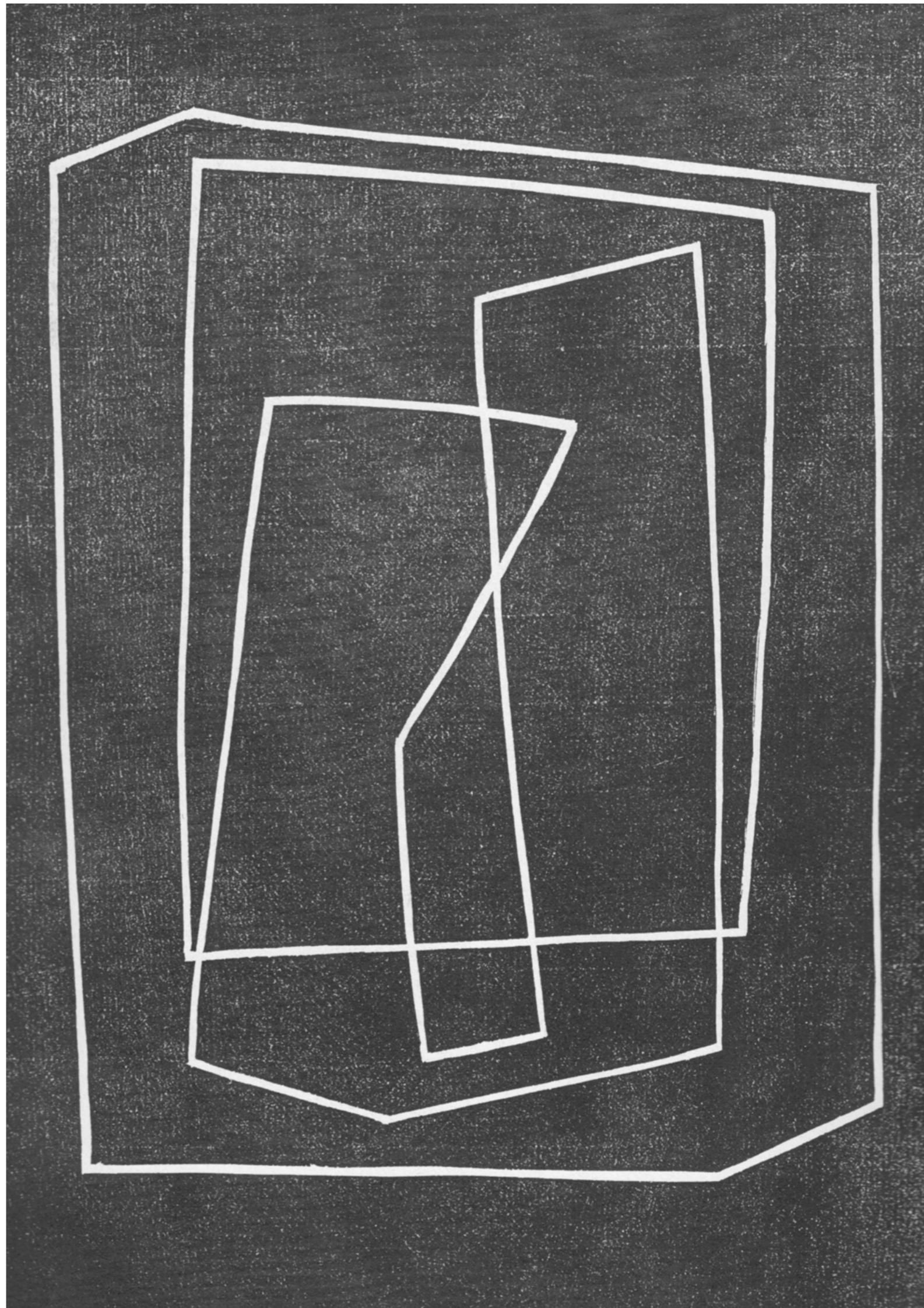
Indeed, if we are to bring in Einstein, we must wonder why, as he steadfastly opposed the Copenhagen interpretation of Quantum Theory, he was unable to win at the Solvay Conference, in 1927, in his battle with Bohr and Heisenberg. It was, of course, because he too subscribed to the old philosophical amalgam, which included Idealist Mathematics. He didn't have the appropriate stance to be able to challenge the reactionary self-proclaimed-revolutionaries in Sub Atomic Physics.

And, in spite of other heroes like David Bohm and Nobel prize-winner, Laughlin; who energetically opposed Copenhagen, they too, and for the very same reasons, were unable to propose a viable alternative.

It is my contention that the only solution to this almighty Crisis and seemingly final impasse, can only be achieved by a radical overhaul of the basic Philosophy of Physics, and we have had the wherewithal for over 150 years.

But, no one, as yet, has completed that intervention.

It certainly isn't Žižek!



The True Nature of Modern Physics

The usual, perennial problem of The Superstructure and the Base is posed by Žižek in the following quote:-

"To a transcendental philosopher, it is clearly too easy to apply here the well-known distinction between the conditions of discovery for a certain scientific theory, and the conditions of its validity"

But nevertheless he insists that:-

"...this does not mean that it (the social circumstances) also conditions the truth-value of the theory of evolution (for example)"

But, what then does he consider his truth-value to be?

It certainly isn't the final word upon the truth of Evolution, for enhancements and even corrections will undoubtedly occur, but, nevertheless, Evolution is definitely *more true* than the correctly-replaced Immutability of Species.

So, to use my own preferred-and-defined way of putting it - it has more "Objective Content"!

Žižek refers back to Hegel for his version, but the real decider, is, surely, to put Hegel's Dialectics into the real concrete World, and look for confirmation there, as Marx insisted, when transferring the whole system to a materialist basis!

Žižek, alternatively, brings up the (Copenhagen) possibility of:-

"reconciling relativity theory and quantum physics in a consistent Theory of Everything."

But, then, goes on to say:-

"All we can do is wait for a contingent scientific breakthrough - only then will it be possible to retroactively reconstruct the logic of the process"

But, of course, as I have stated earlier, both Quantum Theory and Relativity Theory are purely-formal analogous descriptions, and are NOT scientific

explanations, nor will the latter, when finally revealed, be the last word either. His arguments (and in particular, that last phrase in the quote) actually reek of being about Concepts-in-Thought. He, like Hegel, is still an idealist - but theatrically wearing an unconvincing materialist Mask!

He still trusts Hegelian Dialectics above everything else! Then in criticising a rival he insists:-

"excluding the complex of Truth-Event-Subject (means) the return of a naive ontology of levels: (namely) physical reality, life, mind. The transcendental dimension of transcendental materialism prevents this regression to naive ontology."

Now, by transcendental materialism, he means Dialectical Materialism, but the re-naming is actually valid, because he certainly departs from Marx's version, and, may I say, from my own.

And, the changes are significant!

For, Marx never claimed to be a scientist then, and Žižek most certainly is no scientist, now! Though he gladly imports the philosophical retreat of the Copenhagenists, he neither understands, scientifically, what they have done, nor, additionally, does he have the width in scientific knowledge of the present day, to bring in the many developments since Marx across all the Sciences, or even the professional education-and-experience in any of the Sciences to understand their relevance to Dialectical Materialism today.

He is not only restricted to the limited ventures into Science by Marx, but also proceeds without doing the absolutely essential task, as a committed Marxist, of developing that philosophical stance in the light of developments in literally every sphere.

For example, he condemns Levels, which are absolutely crucial in understanding the actual trajectories of Emergences at all possible levels.

[see The Theory of Emergences, Truly Natural Selection, and the Theory of the Double Slit Experiments, as well as the many contributions on all aspects of the Copenhagen Retreat by this Marxist.]

He does, indeed, change Dialectical Materialism, but backwards - to a more strictly Hegelian Dialectic. He is, quite clearly, totally-enamoured with the Interpenetration of Opposites (as a committed Hegelian idealist would always be), but, without the scientific explanations of phenomena, which are the contribution of Science at its best. And, when musing about whether a "chair" actually exists, as such, he says:-

"(there is) no "whole" of which the nail is here a part. Only with organisms do we have a Whole."

And later he says:-

"...the limit between Inside and Outside that characterizes an organism can emerge. And, as Hegel put it, thought is only a further development of this For-itself."

And even:-

"Life proper" emerges at the minimally "ideal" level, as an immaterial event"

Aha! There it is: Žižek's position in a nutshell - you have to have organisms, AND, crucially, some sort of processing of external Reality, which, at its pinnacle, is his supreme processor - Thought! Yet, how about the following morsel?-

"...the form of unity of the living body, which allows it to "remain the same" throughout the incessant change of its material components."

But, then one has to ask, "What about Death?" It isn't always an accident: it is built into all such organisms. So, the full definition of development MUST include Stabilities, and their Crises and ultimate and inevitable total Collapses. How would Žižek weave this into his dialectical fabric? I'm afraid force-fitting Life and Death as opposites would be a wholly man-made construct and NOT an interpenetration of real opposites!

As is evidenced by the following example of shoe-horning Dialectics:-

"The basic problem of evolutionary cognitivism - that of the emergence of this ideal life-pattern - is none other than the old metaphysical enigma of the relationship between chaos and order, between the Multiple and the One, between parts and the whole"

Perhaps, at this point, the stance of the writer of this review should be made crystal clear: for it differs substantially from that of Žižek. Coming from generations of Working Class toilers, but very unusually, in my district, getting first to a Grammar School (where I excelled academically), and then to University, my reaction to Education was significantly different to anyone from a much more privileged background. I had been given the key to the door of Understanding the World, and within weeks of arriving to study Physics and Mathematics at University, I had also committed myself to Marxism, for together they promised what I required. Yet, both sides of this opportunity fell well short of my expectations!

I was taught The Copenhagen Interpretation of Quantum Theory in my Physics lectures, and multidimensional Mathematics to fit. But also, I'm afraid, NO real Marxism from my political comrades.

So, ever since, as an imperative pair of tasks, I have been trying to remedy that lack. And, after a successful life in both areas, ending up in a professorial post in a world-renowned University, I finally had the time to pursue both - full-time and exclusively.

I only finally knew that I was a real Marxist, when I began to successfully demolish the Copenhagen stance using the methods of Dialectical Materialism, which, surprisingly, was finally revealed from my wide-ranging inter-disciplinary researches in my professional occupation.

Clearly, I cannot stomach academic charlatans like Žižek, just as I could not stomach Copenhagenists like Hawking, Penrose and company.

So, my achieved stance in both is that from which I write this important review.



Žižek's Idealist Heart

Žižek then poses a question, which succinctly positions him as an idealist Dialectician, and NOT a Marxist. He asks:-

"How can we get 'order for free:' that is, how can order emerge out of initial disorder? How can we account for a whole that is more than the mere sum of its parts?"

The above-mentioned, supposed "Dichotomous Pairs(?)" betray, just as the same kind of opposites did for Hegel, the assumption of mistaken or incomplete underlying premises. For, both concepts are simplifying and idealised Abstractions, which can, in certain circumstances, help us to cope with particular real situations. But, neither he nor Hegel, were able to call upon Science to throw light upon how a complex, holistic Reality of multiple, interacting factors would naturally-select direct-opposites as potential Dominances, in given qualitatively changing situations.

For, such extensions, as far as I know, are modern (21st century) Marxist developments in Philosophy - in, of course, materialist Dialectics as distinct from idealist

Dialectics. It is a crucial case of what came first "the chicken or the egg", or in this real case "concrete Reality or its simplified and idealised reflection in Human Understanding"

For, by this, Žižek clearly reveals that there must be certain erroneous premises in the above questions. But, they actually reveal the assumption of Plurality, in his Whole and Part dichotomy, and also that of an assumed Initial Chaos in his Order and Chaos dichotomy. And, finally "get Order for Free" implies some kind of necessary "ordering imperative".

He is, at least, somewhat aware of the problem, but offers only:-

"how it is that there is something, a distinct entity, which must adapt itself in the first place?"

He is missing the really crucial question here, which is not available to Philosophy: it is "What brought about The Origin of Life on Earth?" - for, being an idealist philosopher, he hasn't the means to address such a

question. It is about concrete Reality, and its natural development prior to Life!

What chance has an idealist got to ever answer that question?

But, Žižek comes up with an “Engelian answer”!

He notes the tendency to Dialectics in Nature, as Engels did in his Marxist Works, but though important then, as NO direct philosophical assault on Science by Marx, or any other Marxist, had been then attempted, it was, and could only be descriptive, rather than explanatory, and hence only a first step away from the Plurality, which has long been dominating Science.

Žižek then delights in the current emergence of contemporary biologists, who he sees as recognising the Dialectics in Nature, as in the following:-

“...how it is that there is something, a distinct entity, which must adapt itself in the first place? And, it is here, at this crucial point, that today’s biological language starts to resemble, quite uncannily, the language of Hegel”

What? And only a century or two late?

And, clearly, what is required in Marxism today will surely never, ever come, definitively, from such a source.

The necessary, but as yet un-traversed, next step in Marxism must be to demolish the idealist Copenhagen Interpretation of Quantum Theory, at the heart of Modern Sub Atomic Physics, and replace it with a better, more scientific, and less idealistic Theory.

Marxism has to intervene to rescue Science, and, in so doing, free itself from its current limitations, to be ready for the coming crucial political struggles.

When my then colleagues in Revolutionary Politics admonished me for my preoccupations with Physics Theory - they were wrong! That is the crucial and essential next step in bringing Science and Marxism together. Superficial descriptive resonances will not do! Engels did that extensively, but it didn’t, and it couldn’t, forge the necessary Union.

Why is it that there is still no mutually-supporting union between Marxism and Science - the avowed objective of Marx?

It is because of a world-wide deterioration initiated by the triumph of Stalinism in the Soviet Union, and the abandonment of the universal application of Marxism to every serious discipline, and the much inferior imperative of mere Activism as the prime preoccupation.

Anti-intellectualism of the old imperialist countries has been able to push the stalled Philosophy of Marxism out of significance. And, without the necessary tools for the job, it is no wonder that the full potential of every single occurring revolutionary situation has never been fulfilled.

Even the magnificent Arab Spring, instead of being a springboard for the World, has resulted in the present dangerous situation - worldwide.

A crucial Revolution must first occur within Marxism: the current blunted tools just don’t work!

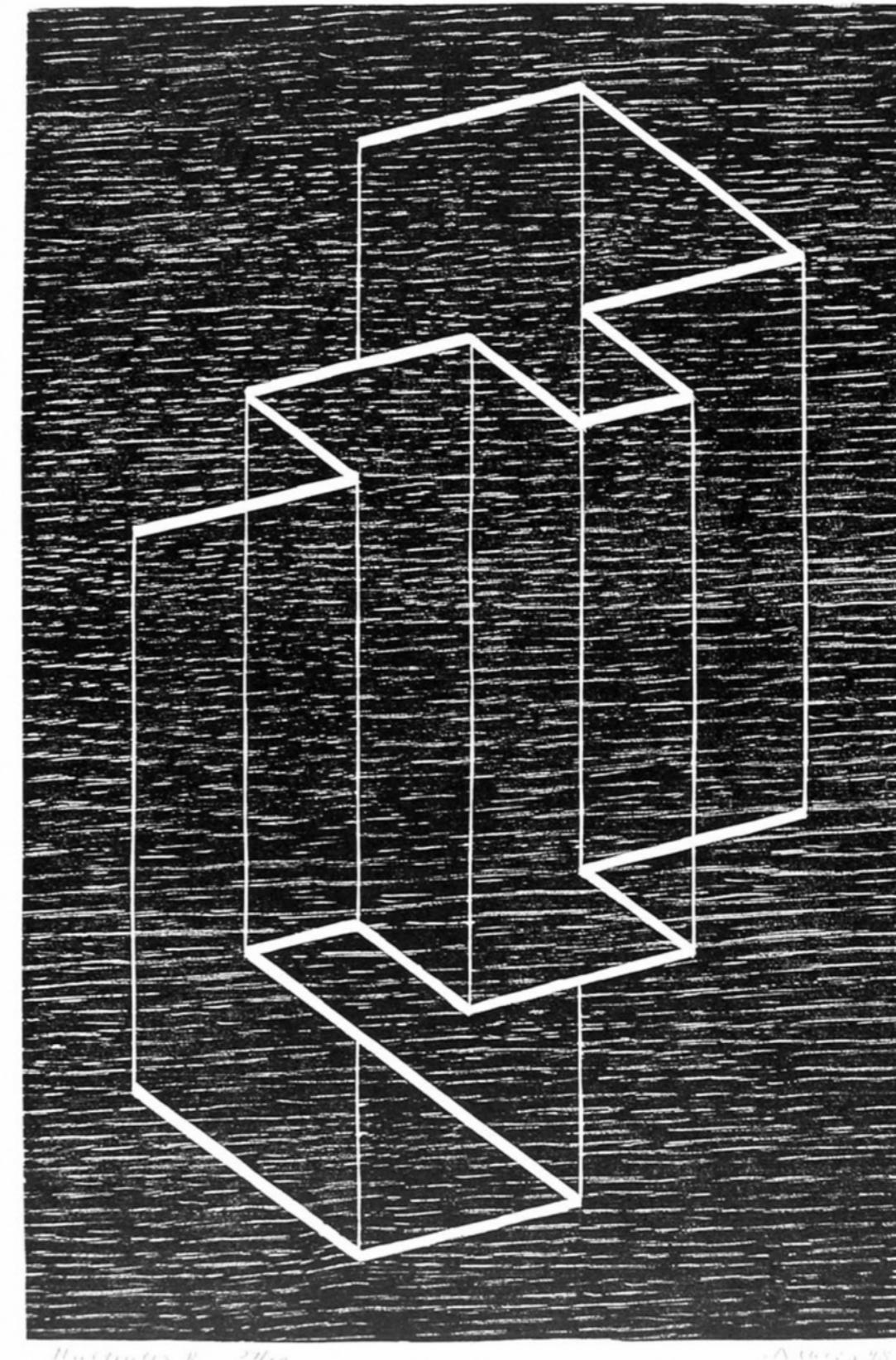
Indeed, so hampered our we by a lack of new theory our “modern Marxist”, Žižek, looks for answers in Copenhagen Physics: he says:-

“This relationship between the empirical (Science) and the transcendental-historical (Dialectical) gets further complicated with the fact that, over the last few decades, technological progress in experimental physics has opened up a new domain, that of “experimental metaphysics.””

I don’t think so! Is he really going to Science for something totally impossible from such a pluralist discipline? The very unsound basic assumptions of Science since its inception make such things impossible.

As a Marxist he should be taking such things to them, and NOT vice versa!

Now, he does at least “doubt” what the physicists are doing, but that is nowhere near strong enough! The physicists have had no choice but to invent their own “philosophy” to prop-up their insupportable idealist modifications to Physical Theory.



Doubt just isn't enough: he should be crucifying their philosophical ignorance, as well as condemning their major scientific retreat!

He mentions Stephen Hawking, critically, for his straying into this invented "philosophical" region, but such things aren't new.

Werner Heisenberg wrote a *Physics and Philosophy*, as have several other leading scientists, and Murray Gell Mann penned *The Quark and the Jaguar*, while mathematician Iain Stewart's *Life's Other Secret* also invaded territory, in which they all were totally ill-equipped to venture.

The fact that they get away with such stuff, not only reveals the poverty of modern Philosophy, but of Modern Marxism too!

"Upon a closer look, of course, we soon discover that we are not quite there yet, almost, but not quite."

What an amazingly mild admonishment from Žižek!
Does he have no "hob-nail boots"?

One idea from Hawking is "model-dependent realism", which has all theories based upon invented models, which seem to fit aspects of Reality, and that is certainly true, but, of course, it leaves such theories (models) as having NO necessary causative basis in Reality. The example given is of two different models, which both deliver the same kind if fit with Reality, thus detaching both of them from being objective.

But, that is certainly not true in Real explanatory Theories, though very true when considering the Equations-first stance of the Copenhagenists, which don't explain why things occur as they do, but only describe how they do it.

The older Explanatory Theories - abandoned by the Copenhagenists, did attempt to say why things behaved as they did, in terms of evident really-existing causes.
While "Obeys this equation" is never an explanation, it is only a description.

There is a major difference between the Copenhagenists and a physicist like James Clerk Maxwell, for example, who had physical bases - such as a Universal Substrate - The Ether, and a functional model of that medium, which enabled him to derive his world famous Electromagnetic Equations.

The major difference is that Maxwell's theory and model had to have what we call Objective Content - some aspects or parts of the Truth. And, progress would only be achievable by new theories and models, which contained MORE Objective Content - a very different stance from that employed by Hawking and the Copenhagenists.

In the work done by the writer of this paper, even the models required were re-named as Analogistic Models, and could only be considered valid if it was the implied causes that led to its devising, and not the mere formalisms required by the Copenhagenists' idea of a Model!

Indeed, the very term Objective Content had to mean physical causes. If the only elements were purely formal, they didn't reach the required standard.

But, Hawking's essential requirements, which he says "attribute the quality of reality" to his qualifying models, is very different from the more-precise, and "containing more Objective Content" models. And, his prime requirement of "accurately predict(ing)" situations, also falls far short of an Explanatory Theory, as it only confirms an appropriate common form, with zero explanatory content.

The proof is in the Copenhagen "Probability Wave", which certainly does not exist concretely, but merely enables their kind of predictions, without, in any way, explaining "Why?" such results occur, or "Why?" they can vanish when measurements are attempted!

The Copenhagenists "philosophical gymnastics", are all they have, because they totally abandoned all explanations, by formulating the Copenhagen Interpretation of Quantum Theory, when presented with the seeming anomalies of the appearance of the Quantum.

And, note what Hawking insists is valid, if two formal models both deliver the correct predictions - for he says:-

"we are free to use whichever model is most convenient"

And that is termed a Theory?

NOTE: This real Marxist feels it necessary to remind Žižek that it was Hegel's brilliant insight, when presented with Dichotomous Pairs of contradictory concepts, that careful study of the premises involved, could reveal the cause of the problem, and appropriate corrections to those premises, could then transcend the caused Impasse. It was this precise method that this Marxist physicist used to discover what was missing in those premises, and when that vital thing was reinstated, every single anomaly, in ALL the Double Slit Experiments, were completely removed.

But, to do it, he needed to be a physicist: a real materialist!

Žižek's view of Copenhagen and the Marxist alternative

Žižek then makes the crucial mistake! He says:-

"we should admit that quantum physics and cosmology do have philosophical implications, and that they do confront philosophy with a challenge."

Now, for all his qualifications, and fairly gentle "Yes, buts", he here admits that the philosophical position implicit in the New Physics demands more from Philosophy.

But, as a physicist myself, I immediately knew, even when only 19, when I first arrived at University, that the Copenhagen stance was a major and debilitating retreat. And, I didn't need a Žižek to tell me why!

Evidently, Modern Sub Atomic Physics could not cope with the new discoveries - in particular, those concerning The Quantum, and had finally decided to jettison all Explanatory Theory as self-kid, and plump, instead, for the purely Formal encapsulations involved in mathematical Equations.

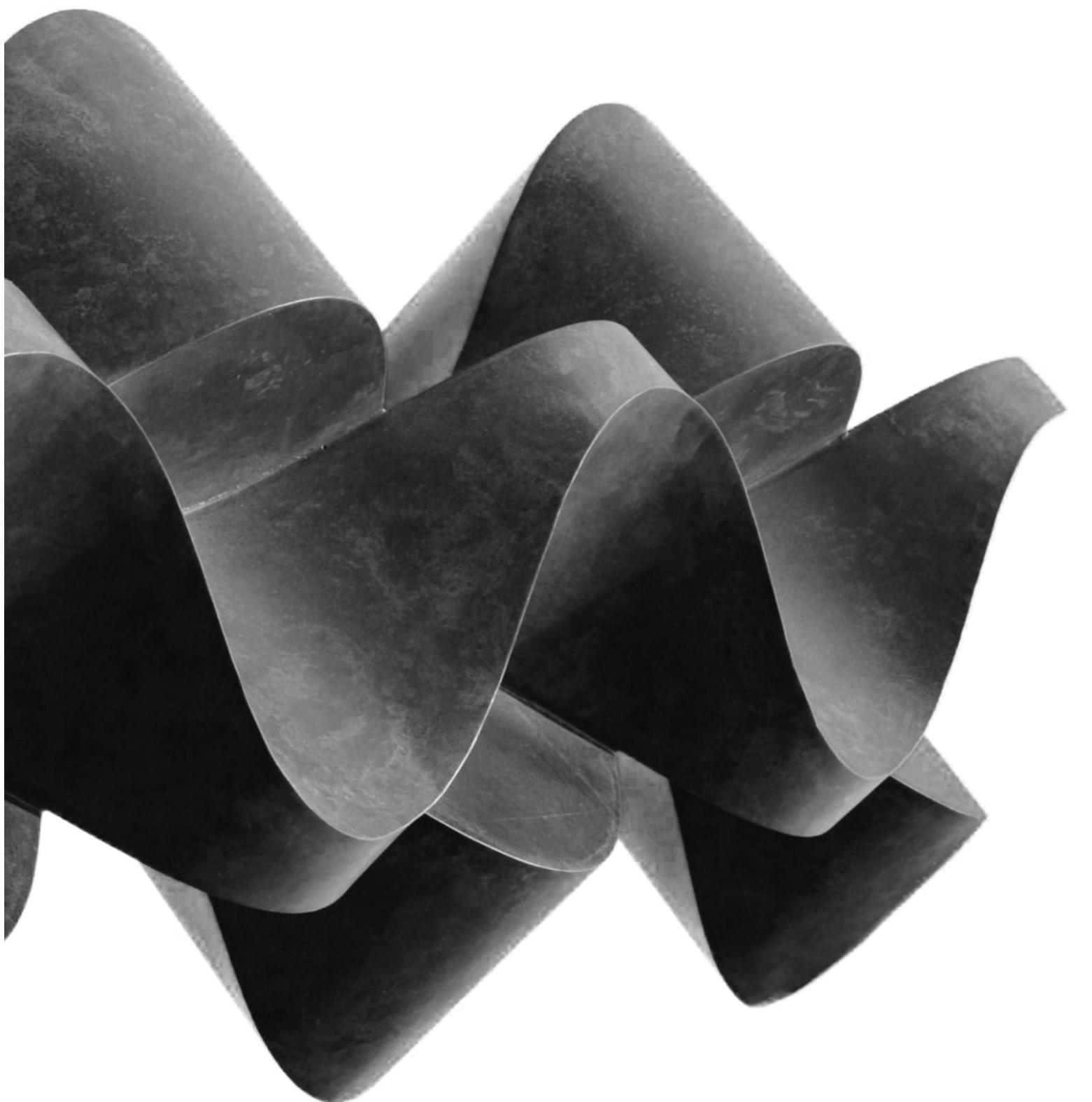
They were abandoning Explanation for mere Formal Description. And, as it turned out, an even more idealist version of Pure Form than was usually allotted to all prior Equations.

An amazing amalgam of Wave Theory and Probability was concocted, which could be used when dealing with sub atomic Particles, which were, henceforth, considered to be both a localised solid entity, and an extended Wave, simultaneously.

The new "entity" was described by Wave/Particle Duality - but NOT *explained* by it! And, this was a major retreat - effacing the idea of 'understanding' itself.

Previously Science had been an eclectic amalgam of both Plurality and Holism, set within a pragmatic duality of Materialism and Idealism.

It was, of course, a philosophic mess, but because of its deepest base, in Pragmatism, it could switch between even contradictory stances, and hence make some kind of "progress".



But, with the Quantum, all these chickens finally came home to roost, and Physics, in its then form, simply could not cope.

The solution taken, by most physicists, was to embrace Idealist mathematical forms, as the driving components of Reality: and the effects upon Theory were calamitous, and not only in Experimental Physics, but in Cosmology too!

The total inadequacies of this stance were soon evident, for, as soon as the predictive powers of such equations were left behind, the only way to fill the increasing number of gaps was with multiple speculations: and they increased both in number and stupidity all the time.

Such things as the definition of a Multiverse in so-called "Explanatory Theory", and of un-provable String Theory, as the probable basis for absolutely Everything, and even Einstein's Space/Time Continuum. They were all mathematical constructs: but still left things like Action-at-a-Distance totally unexplained!

Indeed, finding resonances between Reality and these formal constructs certainly did not make them the actual drivers of concrete Reality - but merely extracted, describable Forms, without-a-Cause!

Perhaps, a short but essential diversion into Mathematics would not be amiss here.

Mathematics was, historically, the very first coherent set of extractions from Reality, but was only possible by both simplifying and idealising what was actually observed, into Forms that were then seen as the "underlying driving essences".

With such a stance, it was natural to relate such forms to one another, and a system of further purely formal relationships were increasingly uncovered.

Amazingly, that very first such system seemed to apply to Everything, though rarely immediately evident, it seemed possible to adjust cruder, naturally-occurring Forms into idealised versions, which were only then eminently susceptible to further investigation.

So, that surprising first step was entirely idealist! Some even validated these forms as "the guiding ideas of God!"

And, slowly, physical, pragmatic sets of imposed conditions, that could be caused to occur, in some local situations within Reality, were found, which could make the display and extraction of these Forms, much clearer to see, and hence much easier to extract.

Remember, all this came first, long before there was anything that could be called Science.

But, its immediate offspring certainly wasn't Science. It was Logic-and-Reasoning. The basic idea behind the Principles of Mathematics in dealing with Primary and Eternal Rules, was carried over into a Reasoning System, which became known as Formal Logic - also having Primary and Eternal Rules - though here applied to Statements, which could never be breached. For such were then termed Contradictory, and banned totally!

Perhaps, the most significant mathematical forms were not the original geometrical ones, but those relating quantitative, measured values - numbers, extracted from the real world in quantitatively changing situations.

For, in a holist World, with most situations produced by multiple, interacting factors, what any measurements represented was the overall effect of those different factors, acting together simultaneously.

For then, any measurement would reflect the momentary, mutually-affecting conflux of such factors, which would vary from moment to moment, though in a stable situation would deliver a overall persisting effect, and investigators soon learned to repeat whole sets of measurements over the same range of a given variable, to find the average relation overall.

This was the very early beginning of Statistics and Probability. And, it was further extensions of this, and also measurements upon randomly-changing situations, that delivered a different form of Mathematics into investigators' hands.

You can see why I have brought all this up!

First, probabilities infer such multiple factor causes! Yet, our investigators prefer a pair of contradictory modes, applied to a single given entity: one, was as you may expect it to be, but the other was probabilistic! And, the latter isn't concrete when applied to an entity's position. It, instead, delivers a range of probabilities

over the whole of an extended area, delivering only the “chance” of the entity in question being in each one of all those positions.

Doesn’t all of this infer that something else must be causing that variability, which we can’t see, study or measure?

This researcher, who is a professional physicist, considered what effect a Universal Substrate might have on the situation, especially if the causality went both ways! He was able to explain every single anomaly presented by the whole set of Double Slit Experiments, and has since explained the quantized orbits of electrons in atoms, and even the fabled Quantum Entanglement, in the same way.

Philosophy and Physics dialectically!

Žižek then mentions a Nicholas Fearn, and highlights one of the chapters in his book, entitled “Postmodernism and Pragmatism”. Now, it remains to be seen what Fearn’s definitions of these terms are, but I cannot think of a more succinct description of what the Copenhagenists offer for Modern Sub Atomic Physics than this apt descriptive heading.

Of course, it matters greatly where Fearn takes his analysis, but Žižek doesn’t pursue it other than how it explains why the Copenhagenists attempt to convert the important philosophic questions into “theoretical scientific ones” instead.

As this critique of Žižek on Quantum Physics is getting rather large, I cannot, as Žižek does, “take on all-comers” mentioning not only Fearn, Badiou, Adrian Johnston and even Lenin.

To cap even this, he has also explained the Propagation of Electromagnetic Energy (Light) through “Empty Space”, the phenomena of both Pair Productions and Pair Annihilations, and even the production of Electromagnetic Fields surrounding a causing charged or magnetised object - again in supposedly “Empty Space”.

And, if this is considered “too theoretical”, how about Yves Couder’s production of persisting entities (his “Walkers”) created entirely from a Substrate and Energy, AND, crucially, his delivery of actual quantized orbits of these entities, at the macro level?

What stance is now looking purely invented?

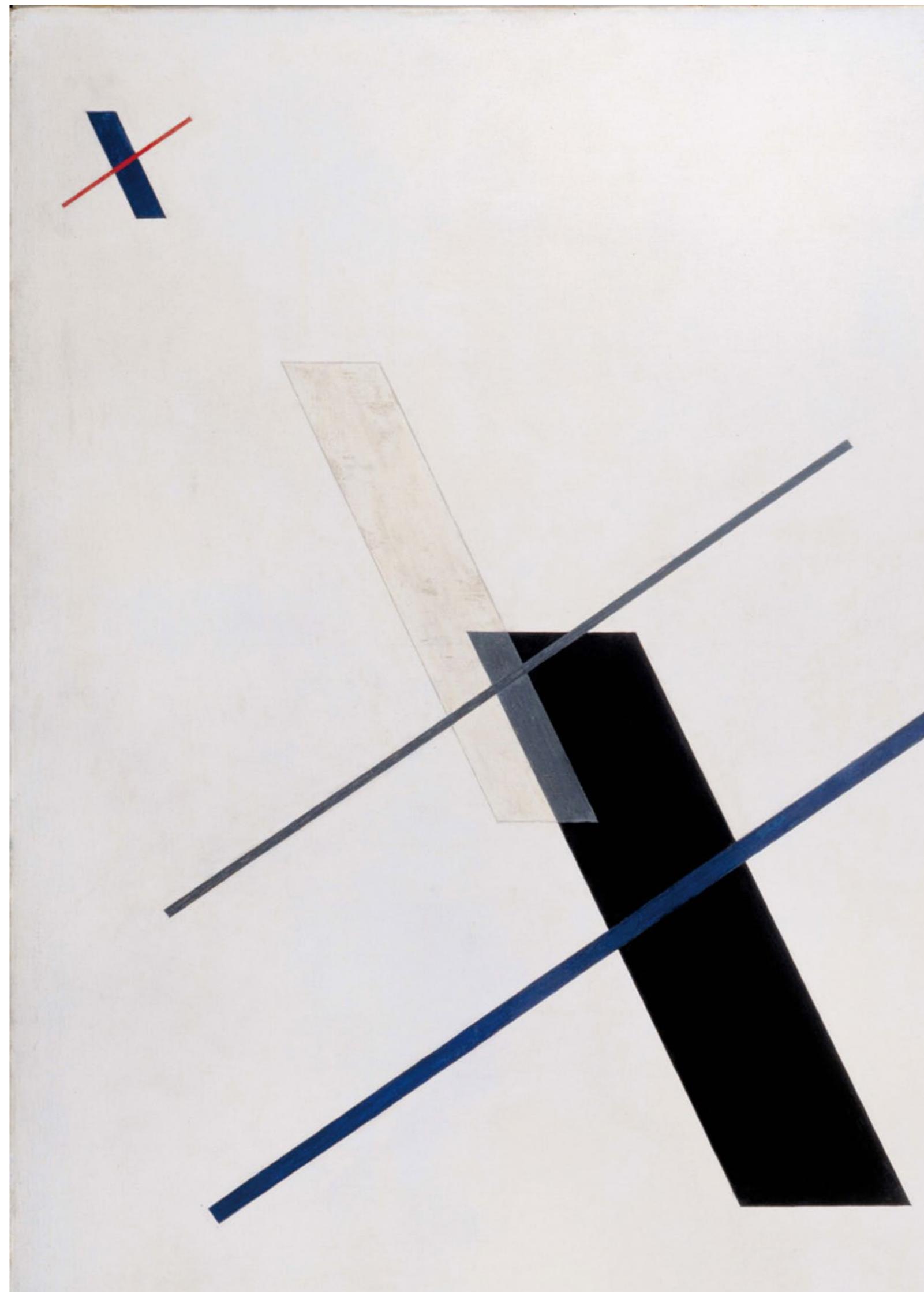
But, in mentioning Lenin’s *Materialism and Empirio Criticism*, he correctly states that such a work did not succeed in forging a Science/Marxism Unity, but only rescued his Bolshevik Colleagues from an idealist excursion into the Physics of Poincaré and Mach.

The main job was yet to be done - and still is!

Though I’m afraid that Žižek will not be the one to do it. His supposedly correcting definition of a:-

“...Ground of Existence: prior to fully existent reality, (in which) there is a chaotic non-All proto-reality, a pre-ontological, virtual fluctuation of a not yet fully constituted real.”

Wow! And, that is his supposedly necessary correction of Lenin?



Sorry, Žižek, that is neither Marx's Dialectical Materialism, nor even a modern improvement upon it. It is an idealist dialectic all of your own!

But, I do recommend reading Žižek's paragraphs in full on page 913 et seq of his book, for, with the stance I have been at pains to establish in these papers, his real position can be exposed very clearly indeed.

He talks of Zeno's famous Arrow Paradox, along with teleiosis, and relates them as purely cerebral Abstractions: it is very revealing. Such an argument defines exactly his own philosophical position.

NOTE: Perhaps I, as a physicist, involved for almost 20 years in developing appropriate Multimedia Aids for the Teaching of Dance Performance and Choreography, can include my take upon exactly the same problem of Zeno?

My then colleague, Dr. Jacqueline Smith-Autard, had long had a major problem with both Video and Film, when used to deliver exemplar performances for detailed study by students. You can probably imagine the same difficulties in dealing with complex movements as Zeno did with his Arrow.

In the cases within Dance, a film-still, could give accurate positions of parts of the dancer's body, within a complex, creative movement, but zero indication of what had come before, or of what had to come after.

And, even when run as a movie, individual 1/25th of a second stills left out 96% of the actual movement completely, and the brain of the viewer had to reconstruct that 96% from the 4% delivered in the sequence of stills.

Attempts to use video instead delivered only blurred mini-movies within each 1/25th of a second frame, which were complicatedly coded, but, nevertheless, when delivered as a movie, the brain could still interpret movement rather well, but accurate revelation of positions were well nigh impossible.

We solved it by using a video camera along with a digital camera simultaneously and synchronised together - taking accurate positions from the digital stills, and then superimposing them as an animated-dots-movie upon, and synchronised with, the moving video version beneath.

With immaculate Access and Control facilities in the computer program delivering all this, our students "got it right".

I will leave the reader to see how my Dialectical Materialist standpoint compares with that of Žižek!

And though Žižek correctly adds:-

"Do we not encounter something strictly homologous in differential calculus?"

In doing so, he chooses a purely formal example in Mathematics, and so couples the real world situations to a mathematical context, where whatever was the relation being studied, it had been simplified and idealised to totally extract it from its real world context and into Ideality.

Sorry, Žižek, you are not making the case!

Compare his example with mine from the real world, and how it was solved. Mine was concrete, and his was entirely abstract, and of a previously simplified and idealised version!

Finally, on that topic, he goes on about relative and absolute infinities, while the real questions are about the very concept of infinity, and most particularly in the entirely idealist world of Mathematics. It must be emphasized that the famed Singularities of Mathematics, exist ONLY in Ideality, and NOT in the real world at all.

The importation of Singularities as "real events" within the Copenhagen approach torpedoes the whole stance.

Clearly, Žižek, for all his assertions of being a materialist, in fact, dwells solely within an idealist world of abstracted concepts. Reference to the Differential Calculus to "prove" his point about Zeno's Arrow Paradox shows that he trusts "his World" every time against the pragmatic "common sense" of "crude materialism"

As I think must now becoming clear, to this writer, who is a Dialectical Materialist and a physicist, the real touchstone with regard to the Copenhagen Interpretation of Quantum Theory, comes down to disproving that whole stance by using the gains and the methods to dismantle supposed-physical proofs - such as the ill-famed Double Slit Experiments.

As already mentioned, this was done using the primary gains made by Hegel in Dialectics and Dichotomous Pairs, but absolutely crucially applied in a *concrete* world problem.

The error in the premises underlying those experiments WAS NOT a flawed or erroneous concept, but an actual missing physical entity - the presence of a Universal Substrate.

The clincher was entirely physical!

And, physical explanations demolished the idealist inventions - one after the other. That was why Marx turned his back upon Idealism, but wisely carried off the dialectical gains of Hegel into his new World - Dialectical Materialism.

May I finish this section with a last quote from Žižek:-

"....the three aspects of materialism.... First, the "imaginary" Real: the proverbial grain of dust, the material "indivisible remainder" which cannot be sublated in the symbolic process. Then, the "symbolic" Real: scientific letters and formulae which render the structure of material reality. Finally, the "real" Real: the cut of pure difference. of the inconsistency of structure."

I leave it to the reader to "pick the bones out of this lot". There are several things to criticise.

Describing the Inexplicable?

Slavoj Žižek now embarks upon his final excursion - trawling through a wide variety of contributors and disciplines, to "explain" the real meaning of Quantum Physics.

My title for this paper - "Describing the Inexplicable" is, at the same time, my criticism of both Žižek and the Copenhageners, and also their own characterisation of what they consider they are doing in this area "as they can do no other!"

But, I maintain that, here, he exposes his idealistic, Hegelian basis, no matter how educated and multi-disciplinary he appears to be, for, it is crystal clear to this physicist that he does NOT understand enough of Science to see alternatives, to his and other's Abstracted concepts.

As a philosopher, myself, I spent some time addressing what Abstractions actually are, and how they relate to

concrete Reality, in my piece *The Processes and Productions of Abstraction*.

And, due to this work, it became increasingly clear that an almost Parallel World to Reality, could be constructed if validation via Reality-itself was by-passed, and this World I termed Ideality.

It soon, in addition, became very clear that it is, also, the actual complete and only World of Mathematics, for example, wherein simplified and idealised abstracted versions of Reality, become the basic components of that World. It can reflect concrete Reality, but never contain it. Indeed, it is both LESS than Reality and at the same time MORE than Reality - for it does not have the restraints of concrete validation built-in. It therefore includes many non-real formal extensions - speculations, that would never be allowed in Reality, but are always allowable in Ideality if formally consistent with the rest!



In this section of Žižek's book, it becomes very clear that he too deals in Abstractions, which he justifies by their mutual consistencies (exactly as mathematicians do), but here also involving his sometimes very-laboured Dialectical opposites. And that, makes him an Hegelian Idealist and NOT a Dialectical Materialist.

He goes on with his explanation of the Differential Calculus, by juggling with several conceptions of Infinity. But, in so doing misses out the damning criticisms of the Mathematics involved, which cannot include effectively, both the history and the future of the moment of any real movement being studied, and, in addition, when in graphical form is considered identical with the simplified and idealised formal description of an Equation.

Differentiation is a process applied to the Equation, as supposedly the same as a tangential construct upon a graph of measured data. It isn't!

[See my work upon identical problems in analysing and teaching creative movements in Dance]

I am sorely tempted to address every single one of his examples and explanations, but I believe by now the reader can tackle these for his or herself: for doing so will consolidate understanding, by actually using an alternative and really materialist version of Marxism!

I have to say, though, that Žižek's sleight of hand in endowing more reality in Differentiation than in the original abstraction is incorrect. Neither Newton nor Leibnitz had anything other than a pragmatic trick that worked, they endowed too much "Reality" in the Equation, than it deserved, just as Žižek endows too much "Reality" in his "dialectical" abstractions!

His examples of a Nation's history and of Diffraction are both simply examples of force-fitting to a General Idealist model. He does it a lot, obviously feeling he is accessing higher truth. He really isn't!

Returning to Quantum Physics, he says:-

"the quantum universe is not mathematical in the sense of involving the immanent development of the consequences of initial axioms, but rather thoroughly scientific in the sense of relying on measurements and thereby exposing itself to the contingency of empirical content."

I'm afraid not Slavoj!

Once again, he makes *measurement* the validating element, in Quantum Physics, without explaining what actually affected; indeed determined, those measurements.

It isn't Dialectics, but Pragmatism - "If it works, it is right" that is the real basis for the Copenhageners.

NOTE: The actual causes of such phenomena have been extensively explained by this theorist by involving a currently undetectable, but actually existing Universal Substrate, which is both affected by, and affecting, in relation to the clearly evident entities involved.

But, nevertheless, he insists:-

"they must have a status which cannot be reduced to the scientists' imagination or discursive constructs"

But, as to what they are seems to be unknowable!

The supposed "Collapse of the Wave Function of Probabilities", when this reverts to classical, non-quantum physics, is NOT explained, but it actually drops-out very clearly when a Substrate is involved.

Žižek carries on with a varied discussion, including some valid criticisms o the Copenhagen stance, but he never makes clear the real relation between Knowledge and Reality: Knowledge is always less than complete in relation to Reality. But, it is more-or-less objectively true, in certain situations, and these "approximations-to-the-real" can be taken as "the real", even in consequent explanations, when they work. They can always be replaced by a more accurate concept that contains more "Objective Content".

It would be false to dismiss these as-yet-incomplete descriptions and explanations, as mere constructs of imaginative minds.

That they are most certainly not!

But, when something cannot be even inaccurately described and/or explained without clear contradictions, then, in spite of the efficacy of the forms developed, this cannot be said to have sufficient Objective Content to be our "current approximation to The Real".

Instead, it is merely a pragmatic trick which can be used, but never interpreted as explaining anything-at-all.

There is no way someone like Žižek, can deal with such questions: he is always waylaid by his cure-all dialectical opposites, in other words by his limited understanding of the Real World - and its current descriptions and explanations in Science!

You cannot reduce that Real World to the limitations of un-validated conceptions, which are inevitable without Science!

To emphasize just how unscientific Žižek is, and how pluralistic were the 20th century physicists, I cannot resist including the following quote:-

"In another example of the scientific "knowledge in the real," Ernest Rutherford queried how a particle knows where to go when it jumps from one "rail" to another around the atom's core-rails that do not exist as material objects but are purely ideal trajectories."

For, Rutherford clearly saw the electron within an atom obeying an undetectable, but driving, eternal Natural Law when moving between quantized orbits, and Žižek takes it from there. Yet, it has been entirely possible to explain such quantized orbits as long as there is an affected and affecting Universal Substrate. There is nothing physically inexplicable about quantized orbits.

Where all this leads, when the unscientific philosopher tries to make sense out of the idealist "scientist", is embodied in the following Žižek explanation:-

"....in an empty region of space, a particle emerges out of Nothing, "borrowing" its energy from the future and paying for it (with its annihilation) before the system notices what it has done."

As a Marxist friend of mine is fond of saying, "You couldn't make it up!"

Žižek, then carefully explains 4 features of the Copenhagen Stance, including the ill-famed Double Slit Experiments. It is certainly worth a detailed study of the blind-leading-the-blind, for a marxist-physicist such as myself sees clearly in each perplexing revelation the "Elephant-in-the-room".

It is, of course, always the existing, but undetectable Universal Substrate, which, being composed of mutually orbiting pairs of sub-units, can both take in (like the atom) and release energy. It can both be affected and itself affect any interloping entities.

It is the intermediary, with wave propagating properties, that, along with discrete particles, replaces the incomprehensible Wave/Particle Duality.

All of Žižek's "debt-transactions with-the-Future" are actually short-term transactions with-this-Substrate, and all his "necessary delays" to allow his transactions are in fact concrete delays due to Waves travelling at the speed of Light and particles always travelling much much slower - yet ultimately meeting and interacting with static phenomena that their previous interactions with the substrate had caused.

Substrate wave-disturbances streak ahead of causing electrons, to reach the Double Slits, pass through both and interfere on the other side.

The causing electron (travelling much slower) finally reaches the Double Slits, and, passing through one of them, it encounters its self-caused interference pattern and is deflected, or not, depending upon its diffracted path.

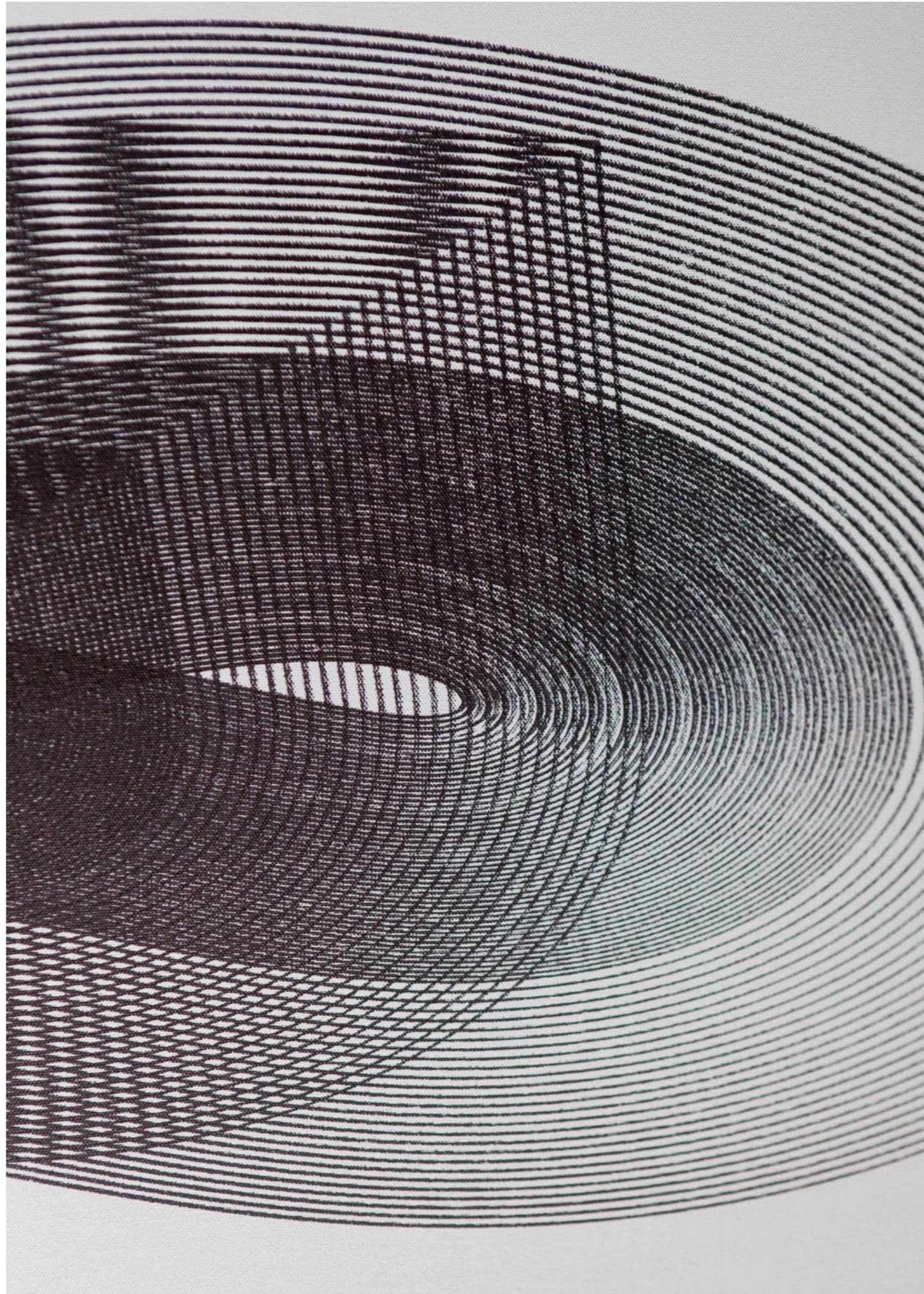
Now, though he doesn't seem to be embracing the Copenhagen stance uncritically, he does state:-

"Hegel can be of some help in bringing out the ontological consequences of quantum physics"

It is not unlike his arguments in his "Limits of Hegel" chapter, wherein he criticises Hegel without making the necessary alternative clear.

In my opinion, he acts like a Hegelian Dialectician, but like many aspiring Marxists before him, still cannot build the bridge to Science. So, when presented with a massive retreat (claiming to be a revolution) in Physics, which quite clearly turns to Idealism coupled with Pragmatism as its new stance, he can only look for resonances with his own, as yet inadequate "Marxist" and hence "still Hegelian" idealist stance.

A key passage now ensues in which Žižek considers whether the "symbolic order", delivered by the equations



of Science, really does reflect an actual “symbolic order” in Nature itself.

You can see where he is going, for the current interpretation of Quantum Theory consisting only of such things, and NO alongside qualitative explanations, and if they do reflect the same sort of things in Nature, then the whole thing is a veritable revolution.

Otherwise, the whole approach is both idealist and pragmatic, and represents the END of Physics, as a means of understanding Reality.

As he always does, when the important questions are posed, Žižek “takes a step upwards” into a “there is this on the one hand, and that on the other” stance, which is so easily re-cast into the presentation of dialectical opposites, at which he is very able.

But, he doesn’t come down firmly, rejecting the idealist mistake: and the reason is that he doesn’t know enough Science, and understands even less, to bury that alternative stance.

He even says:-

“We thus have to posit a kind of ontological triad of quantum proto-reality (the pre-ontological quantum oscillations), ordinary physical reality, and the “immaterial” virtual level of Sense-Events”

Notice how he has to “make abstractions” constantly.

He even admits that the thinking involved can be limited to a kind of “Language”. He is referring to Mankind in general, but really based upon himself! His unavoidable “Language” is Hegelian Dialectics, and there were times when Marx did it too.

But Marx knew what was necessary, even though he personally was unable to do it. Science had to be conquered, and in that revolution, BOTH sides would be radically transformed.

ASIDE: Let this “Marxist scientist” tell a revealing tale! Though a committed Marxist and a qualified physicist for many decades, the essential integration of the two escaped me: and it was only within a surprising conjunction of disciplines that the key ideas were revealed.

I had become a very competent systems analyst and programmer, and took my skills into aiding researchers across the whole range of disciplines, by writing tailor-made computer programs to help them in particularly difficult areas.

I became a specialist in Computers-in-Control - not as you might imagine, in Automation, but in wedding what could be done in programming to overcome intransigent problems besetting particular researchers.

The breakthrough came in Dance. Yes, I did say Dance! I was asked to help an expert looking into the Teaching of Dance Performance and Choreography, using Film and Video resources, but the usually recorded resources were difficult, if not impossible, to use in the way she required.

My job had to be to give her immaculate and subtle Control and swift and precise Access to recorded resources, and transferring the recorded footage from high quality Video tape onto Video Discs, many of the problems were solved.

But, such technologies were being dumped for Digital alternatives, and I soon learned that all the solutions we had achieved were impossible in the Digital Recording that had replaced the previous Analogue Video methods.

After a great deal of research, AND theoretical recourse to Zeno’s Paradoxes and their solutions, I was able not only to solve the problems once again, but in so doing actually find the key to unifying Marxism and Science.

If a competent and experienced scientist and committed Marxist had to traverse such a circuitous route to realise the key, then it is no surprise that the necessary bridge had taken so long in being realised.

One further example was also crucial! And, it was in finally theoretically cracking the ill-famed Double Slit Experiments in Sub Atomic Physics.

Using Hegel’s method of addressing Dichotomous Pairs of contradictory concepts by investigating the common premises to both, to find errors or omissions, I could not find what was wrong, until I realised it wasn’t a concept that was missing, but a physical entity.

As soon as I included a Universal Substrate into the theory EVERY SINGLE ANOMALY was explicitly transcended.

Here was the missing Marxism/Physics link!

It was solved scientifically, by re-instating a physically existing Substrate, which had been jettisoned when it couldn’t be detected, and Experiments like that of Michelson-Morley had seemingly “proved” its “non-existence”.

Here is a rather longer quote from Žižek:-

“The basic feature of symbolic reality is its ontological incompleteness, its “non-All”: it has no immanent consistency, it is a multiplicity of “floating signifiers” which can only be stabilized through the intervention of a Master Signifier - in clear contrast, so it seems, to natural reality, which is what it is, without any symbolic intervention. But is this so? Is not the key ontological consequence of quantum physics that quantum proto-reality also needs a homologous “quilting point” (here called the collapse of the wave function) to stabilize itself into the ordinary reality of everyday objects and temporal processes?”

I had to quote as he wrote it, otherwise my wording could well be questioned as distorting his intended meaning. Though it has to be said that he, all too often, sits “in an elevated see-all-position”, but usually still on the fence, when dealing with such things: so he is rarely explicit in delivering his resolved position.

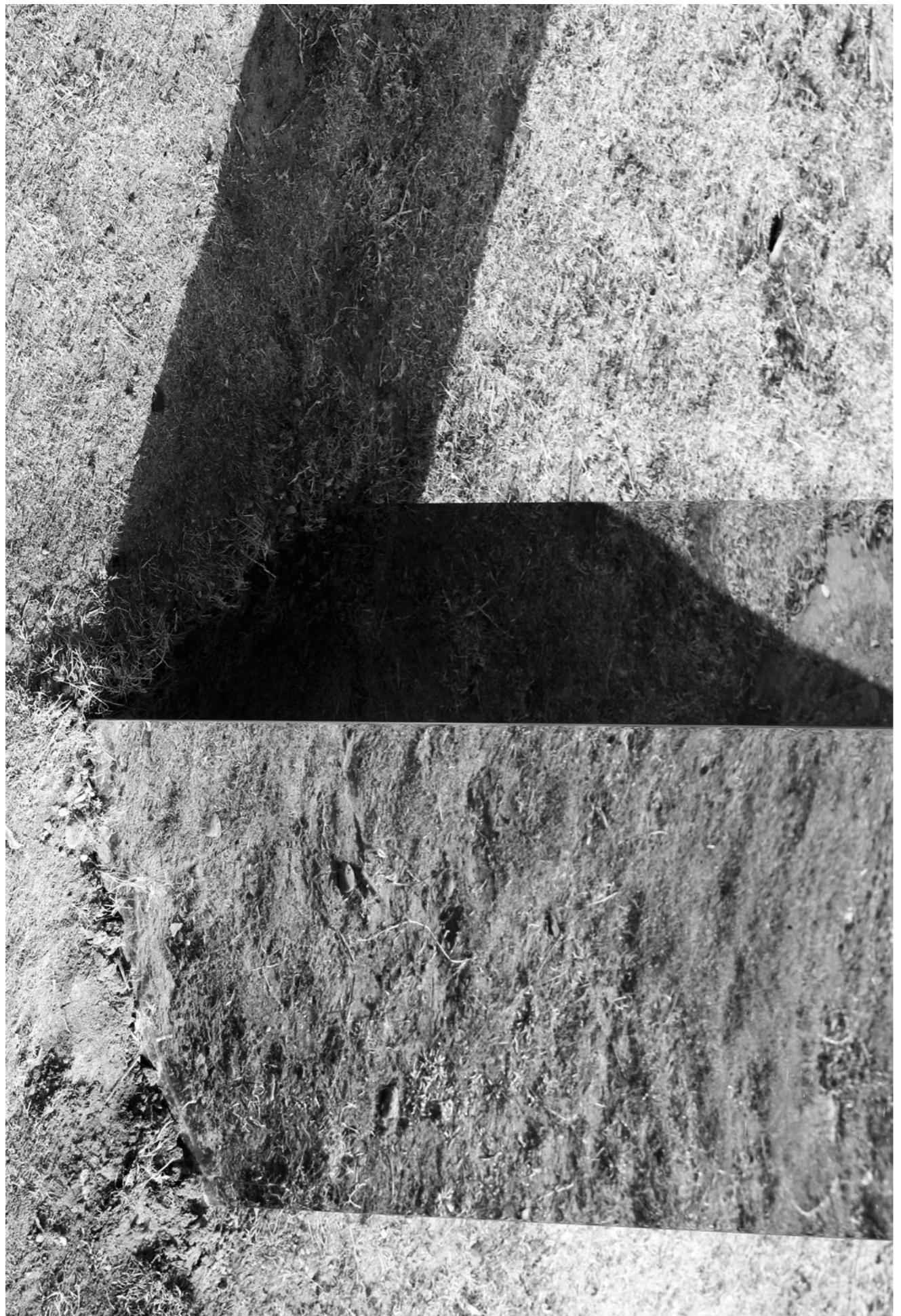
Yet, as usual, there are always enough resonances in what he says to be worthy of consideration.

Yet, though, in the above quote, he is dealing with equation-based science, his criticisms are actually true of all abstracted concepts. The whole point about Hegel’s criticisms of Formal Logic was its unavoidable rational impasses - as indicated by Dichotomous Pairs of concepts: and his consequent search for the incomplete or erroneous premises that caused the impasse.

Indeed, no conceptions are ever the Absolute Truth, but are, at best, a partial or limited view, that has merit due to its valuable, if incomplete, Objective Content.

So, in dealing with this trajectory towards Truth, we have no alternative to our current best conceptions, and should, as we do, treat the glass as half-full, rather than damn it has half-empty of real Truth.

It is also, all too easy, to use Dialectics as a way of putting absolutely everything into a tension between two opposites, and even inventing a few illegitimate ones, to make absolutely everything fit the same kind of analysis. At some point, you simply have to plump for what you have, and work with that. Such was the basis for Science, and is better than always sitting on the fence, while revealing the many difficulties!



Digging his own grave?

Žižek meanders through Schelling's philosophy, before restating the Copenhagen stance as follows:-

"In the double-slit experiment, when particles are sent through the slits one by one, they nevertheless - if they are not observed - form the pattern of a wave. Since the wave-pattern presupposes the interaction of particles, and since, in this experiment, each particle travels alone, with what does it interact? Does it inhabit a synchronous atemporal space where it can interact with past and future? Or does it interact with itself? This brings us to the notion of superposition: the particle interacts with itself, so that it simultaneously takes all possible paths, which are "superimposed" on one another."

As was made clear by his preceding passage on Schelling, Žižek resolutely struggles to find a "philosophical solution" to Copenhagen, but as I have repeatedly pointed out - not being a committed, knowledgeable and understanding scientist, he is totally incapable of resorting to concrete Reality to transcend the impasses generated by Copenhagen.

Whereas, as this Marxist physicist has shown, all the referred-to anomalies can be removed by returning a Universal Substrate to the premises assumed to be involved.

Superposition - a particle, interfering with its other-different-self, can be fully explained by a two-way causality between the particle and the substrate, in addition modified by the effect that the Double Slit Arrangement makes upon waves generated, in that substrate, by the moving particle.

Indeed, all the contradictory phenomena, are such only because the possibility of a Substrate is not considered, even though, with its inclusion, a great deal more Objective Content is certainly delivered than is ever possible via the Copenhagen alternative.

You also have to have a real relation between all Theories and Reality, which, though it fully admits of the inadequacies in all theories, does also recognise a "measure of truth" within them, and, in addition, possesses a sound means of assessment of progress-towards-the-

Truth, to validate any new theory over the old one that it purports to replace. And, that, as any scientist knows, will require validating reference to concrete Reality via carefully designed testing experiments.

"Thought Experiments" just wont do!

So, Žižek now proceeds to attempt to validate the Copenhagen stance. He uses Heisenberg's Uncertainty Principle, and Bohr's Complementarity, as arguments to "abandon" what he terms mechanistic materialism, but none of this is at all true! Nowhere, does he fully define the inadequate philosophical bases of that "mechanistic materialism". I see NO detailed analysis of how Science has, historically, always managed to maintain an amalgam of both Idealism and Materialism - facilitated by a still dominant and necessary use of Pragmatism, to overcome the many inevitable contradictions that constantly arose.

Instead of showing what the mistakes of that mixed and contradictory stance are, why they occur, and how they are got-around, he allows an almost Kantian "Thing-in-itself" area defined as the Sub Atomic realm, delivered by these "form-worshippers", who always trust Pure Ideal Forms (in fact merely idealised descriptions), in preference to concrete Reality and its properties and relations, which alone enable phenomena to even begin to be explained.

The trajectory of scientific theoretical gains, including its always-partial-Nature, along with a full understanding of the inadequacies of Abstractions, as discovered by Hegel, they label as Another World - entirely-outside-of these past gains, which he then attempts to be intrinsically related to his conception of "Dialectical Materialism".

As he puts it:-

"...we should abandon the standard notion of "objective reality" populated by things equipped with a fully determined set of properties."

A "Fully determined" set of properties? He damns classical Science, but neither by correctly revealing its actual flawed premises philosophically, nor by explaining

its valid, if incomplete, revelations... And now, Žižek makes his most revealing ploy! He takes the "Thing-in-itself" implied by what occurs in the "unknowable" sub atomic realm, according to the Copenhageners, and:-

"(re)conceive(s) it as the ontological incompleteness of reality (as quantum physics implies)? (So) What if we posit that "Things-in-themselves" emerge against the background of the Void or Nothingness, the way this Void is conceived in quantum physics, as not just a negative void, but the portent of all possible reality? This is the only truly consistent "transcendental materialism" which is possible after the Kantian transcendental idealism."

NO, this is, most certainly not Dialectical Materialism!

No wonder the Copenhagenists have entities emerging out of "Nothingness" - (the supposed unknowable ground at that level). It not only gives them licence to "cover" all sorts of anomalies, but also multiple Universes, String Theory, Quantum Loop Gravity and all the rest.

This handy "hole-as-source" makes the whole panoply of Copenhagen developments possible, and brings Explanatory Physics to a final dead halt!

Žižek even asserts that:-

things always emerge out of their background Void truncated which is a remarkably negative way of saying how Mankind gradually extracts some sort of meaning out of complex and changing Reality. It can only be that he is aware of the unavoidable limitations of an entirely cerebral, rational means of making sense of what we extract, even when Hegel's major corrections are included.

While equating the as-yet-unknown with what we consider as Nothing, as the Void, is his attempt to link the idealist inventions, of the Copenhagenists, to his own entirely cerebral stance! He even baldly states:-

"Therein, perhaps, lies the ultimate philosophical consequence of quantum physics"

Do all these interpretations clarify things one whit?
NO, they do not! Though he asserts:-

"....what its most brilliant and daring experiments demonstrate is not that the description of reality it offers is incomplete, but that reality itself is ontologically

"incomplete; indeterminate - the lack that we take as an effect of our limited knowledge of reality is part of reality itself: (in a properly Hegelian way?)"

and also:-

"...the underlying implication of the quantum concept of Nothingness (Void) as pregnant with a multiplicity of entities which can emerge out of it, that is, "out of nothing"? Reality-in-itself is Nothingness, the Void, and out of this Void, partial, not yet fully constituted constellations of reality appear"

Žižek celebrates finding an ally in the Copenhagenist Cabal for his truncated "Marxism" - in his Dialectics-without-the-Materialism!

Effectively, "Give up now, you'll never do it!"

Is that also his political credo?

NOTE: May I suggest another characterisation of the Copenhagenist Void? It is the presence, everywhere, of a Universal, yet currently undetectable, Substrate, which is both affecting of, and affected by, see-able events happening within it!

It is remarkable how the ephemera of Copenhagen idealism vanish, when the interactions of this un-admitted and un-seen contributor within seen Reality, begins to be understood.

Žižek cuts the cloth of Reality to fit his non-materialist Hegelian Dialectics. His consignment of the unknown to the "unknowable" terminally limits Mankind's remarkable extensions of what can be understood. He will be interpenetrating his beloved opposites, both real and invented, to his dying day!

What did Marx say about not merely interpreting the World, but changing it?

Now, for Žižek, there is nothing-and-nobody that he is not prepared to take on, with his "universally applicable" Dialectics. So, it should surprise no-one that he has a position on Cosmology too, and, in particular, on the ill-famed Big Bang - a Universe out of Nothing?

"No problem!", he asserts!
It fits in with his alliance with the quantum physicists,

who also have expanded their aegis into this area too! He seems to prefer the Paul Davies position, and carries-it-on with his own position, with the following:-

"The solution could be that our universe is like a mirror ball whose visual echoing makes the space appear larger than it is. Because of such echoing, when the same signal from another galaxy reaches us via two different paths, it appears to us that we are dealing with two different galaxies (or that the same galaxy is simultaneously at two distant places)."

Now, he suggests this without any theoretical and physical justification, but it is interesting that with a Universal Substrate, terminating at some specific boundaries, what he described could well occur via Total Internal Reflections of Light Propagation at whatever boundaries there are.

But, that would be *Physics*, wouldn't it, and he doesn't do that!

After an interlude discussing various totally speculative Cosmologies - all arising one way or another out of the Copenhagen "re-grounding" of Sub Atomic Physics, Žižek makes a startling point:-

"...from the Hegelian standpoint, the Void names the extreme tension, antagonism, or impossibility which generates the multiplicity of determinate entities."

He is talking not only about contradiction due to flawed premises here, but much, much more: he is including Emergences (i.e. Revolutions) in the same set of causes, and that is nonsense!

Having spent a vast amount of time culminating in my Theory of Emergences, and hence tackling the generation of the Wholly New, and hence real evolutionary development, it is clear to me that the mere interpenetration of opposites is wholly insufficient to deliver such things.

Saying as he does:-

"There is multiplicity because the One (The Void) is in itself barred, out-of-joint with regard to itself."

What?

Surely, that is, most certainly, the purest obscurantism? Explanation needs a great deal more than that: it is Idealist Philosophy at its worst! Why does he think that Marx left Idealism for something more explicable?

The culmination of how Žižek often force-fits Reality, as we-see-it, into his "Dialectical Engine", is just too crass to insert here: it simply does not deserve to be discussed!

From this point, Žižek, starts to both describe and criticize the basic Copenhagen position, as he sees it emanating from both Bohr's and Heisenberg's various contributions. It is crucially confounded by a confusing mix of levels-of-Reality, AND what appears to be a wholly pluralist stance.

Now, you would expect that stance from Bohr and Heisenberg: for it has been the consensus for millennia, but Žižek is an Hegelian, and hence conforms to the opposite holist stance.

So, before we dive into Žižek's descriptions-and-arguments, it is essential we clarify the differences between Plurality and Holism, once again.

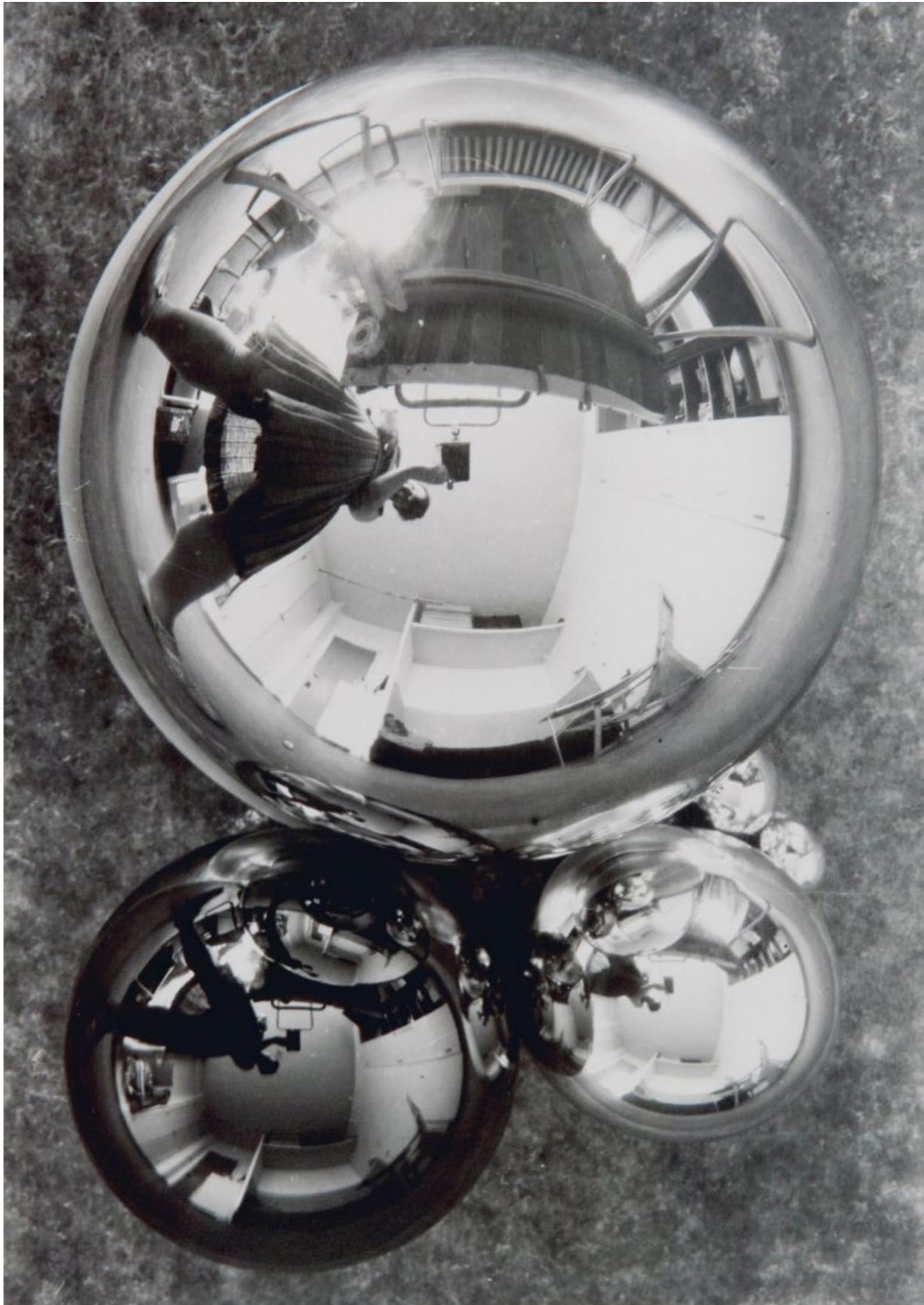
Plurality - the stance of all scientists since the Greeks, considers that it is a set of eternal Natural Laws that make Reality what it is. They cannot be changed, but only compounded, added-together, complicated - to give everything that there is.

Hence, this being the case, Analysis and Reductionism, Level-below-Level, all the way down to Elementary Particles will be possible (if interminable).

It is the very premise that ultimately led to Sub Atomic Physics, and the focussed-seeking of "The Key Subset of Elementary Particles", which should, via mere (if very long-winded) complication, deliver All of Reality!

Now, Hegel, in his researches into Thinking about Thought, had to find causes for the total failure of Formal Logic, in dealing with Qualitative Change, and even more so in the speedy, radical transformations that were seemingly totally inexplicable.

He, of course, knew about Zeno's Paradoxes, and the tradition, stemming from the Buddha, of an entirely opposite stance termed Holism.



It totally rejected eternal Natural Laws as the as the unchanging basis of everything, and instead had such "Laws"-as-could-be-revealed, as totally determined by their Contexts. Indeed, "Everything affected everything else!"

Now, at first consideration, this stance appeared to make attempts to understand anything in Reality impossible to achieve - what possible unchanging features could be used in explanations?

But, as it has emerged, the seemingly, only-possible-outcome of Chaos, was NOT the observed result of this stance.

For, in affecting one another, some effects supported one another, and in spite of the simultaneous presence of dissociating or opposing alternative features being present too, it mattered greatly how much of each there was: and situations could settle into self-perpetuating, relatively-stable systems, which, at their produced-levels, displayed discernable relations.

Indeed, something like Plurality, appeared to be possible in certain of these Stable Situations, though they were NEVER permanent systems of phenomena.

Every such Stability, though often persisting for long periods, was always finite, and would inevitably end at some point.

The Trajectory of Reality was one of periods of persisting Stabilities, always finally terminated in radically transforming Events, termed Emergences.

And, it is clearly this version of Holism, which reflects Reality much better than strict Plurality.

Instead of everything being built out of fixed Laws, Reality develops: change is always present, but it ebbs and flows, in the temporary stabilities, which it, for a time, throws up, maintains, and then subsequently, and more rapidly, dismantles, what had been achieved.

Now, clearly there can be Laws, but they will each-and-every-one always have a Context, which actually determines them.

But NONE will be eternal!

The whole thing is proved conclusively by two things:-

1. The impossibility of applying a law in unfettered Reality, &

2. The factory system, in which every manufactured part must go through a whole series of necessary Contexts - each one being the Context from which the law-to-be-applied was extracted.

Lost in the woods!

Žižek then defines the alternative, classical position in Physics, NOT as he should have done - revealing its amalgam of totally contradictory stances, but, instead, as a wholly "common sense", intuitive and naive one, and then insists:-

"It is against this spontaneous image that the radical nature of quantum physics should be measured."

But, he is, of course, in doing this, wholly wrong, both physically and philosophically, to make that the choice to that is to be made!

His characterisation of the basis of Physics being some sort of chaotic, oscillating(?) background, out of which seemingly(?) finite entities emerge (or are conjured) is from the Copenhagen Stance, and NOT from classical Physics.

And, in criticising the philosophy of that Physics, he says nothing about its actual amalgam of contradictory stances, namely Materialism, Idealism and even Pragmatism!

He is actually insisting upon setting up his own idealised floppy dollies to be knocked down by Copenhagen, when he should be criticising Copenhagen from a real Dialectical Materialist standpoint!

Continuing his critique of what he terms the naive, "basically continuous stance", when it comes face-to-face with the quantum, he then goes on to say:-

"it is as if getting too close to a person, we discover that they are not a "real, organic person", but are composed of tiny Lego bricks"

You would be expecting a discourse upon Continuity-and-Discreteness, at this point, and a dialectical explanation in terms of his favoured Interpenetration of Opposites, but he has more pressing imperatives here: he is, after all, supposed to be attempting to deal with a totally inadequate, and completely idealist stance.

But, he really does have a major problem!

He has his method: the Interpenetration of Opposites, so he feels he must next consider the opposite conception, (using sand dunes as his model?).

I could quote his descriptions, but they are so crass and ill informed - indeed they are actually derived from his own favoured Opposites of Form, which he imposes upon Reality, whenever he can, to prove his point.
I cannot deal in such inverted reasoning!

Žižek also concludes that:-

"the entire traditional problem of distinguishing between properties, which belong to "Things-in-themselves" and properties which merely "appear" to belong to things because of our perceptive apparatus is thus undermined: this distinction between primary and secondary properties no longer makes sense, because the way a thing "appears": the way it is "for the other:" is inscribed into it "in-itself"

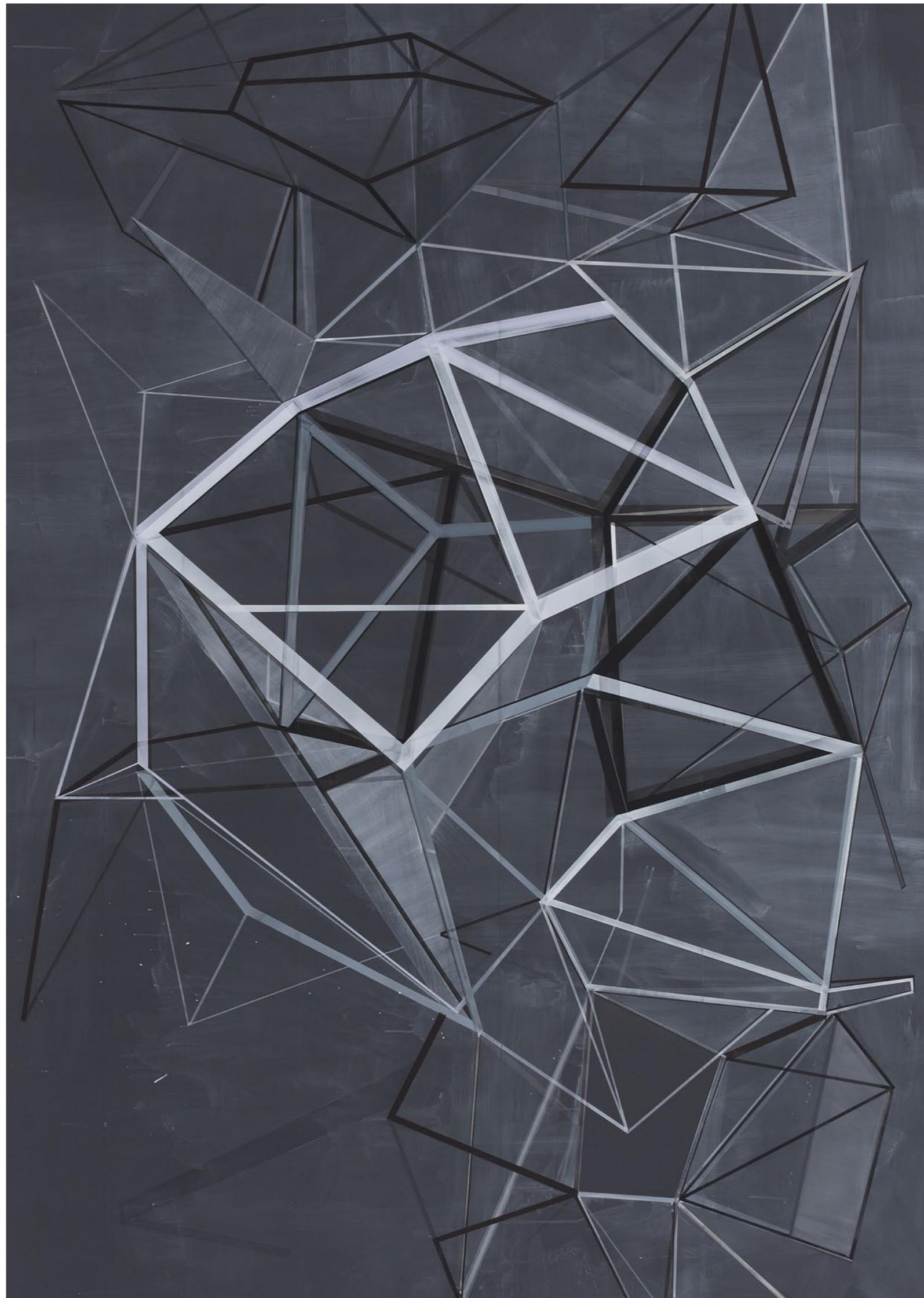
Now, this quote is not only misleading, but intentionally so, for Žižek has his intended agenda, and marshals "the facts", accordingly, to facilitate it.

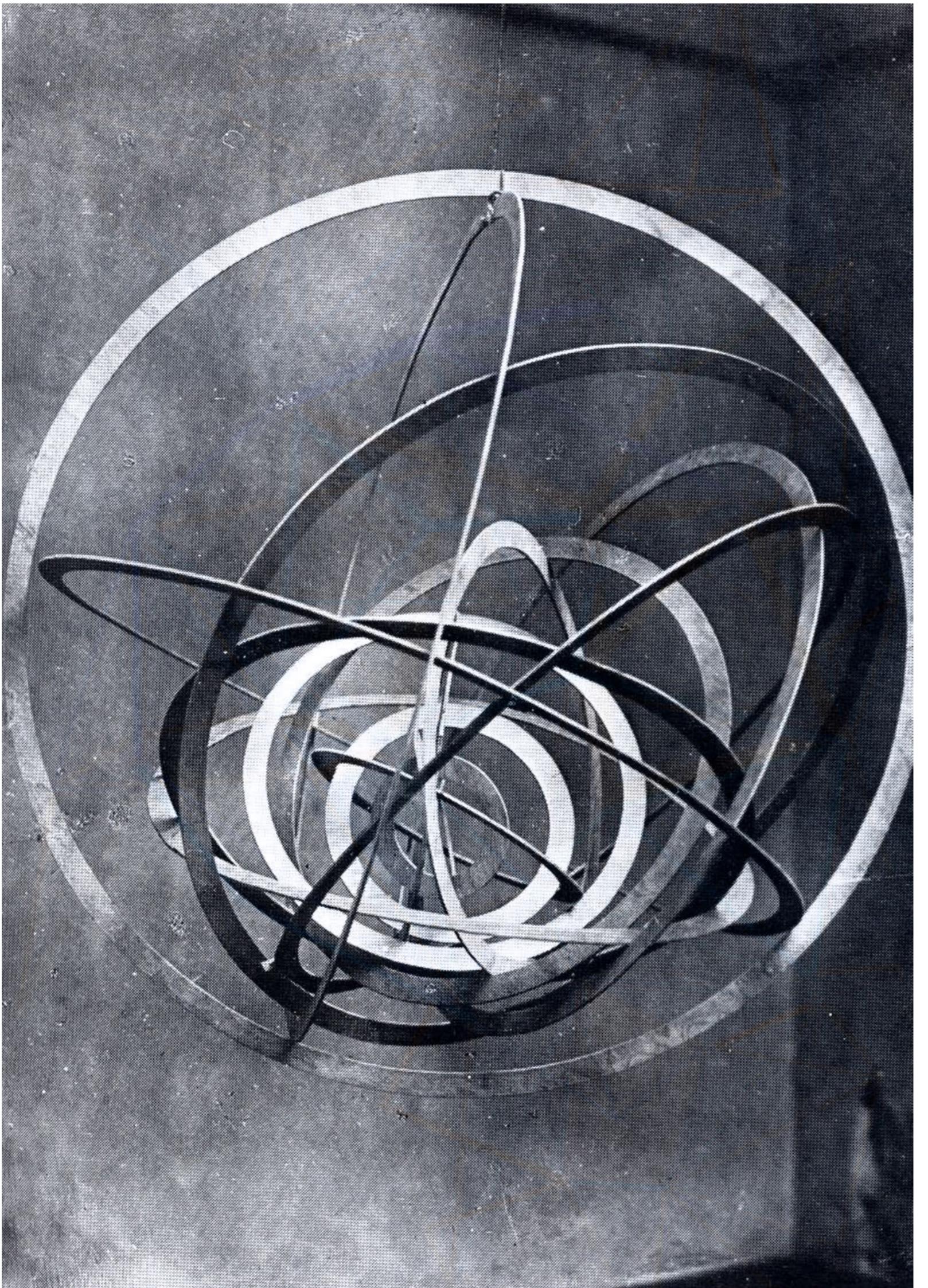
Primarily, he over-emphasizes the invention-side of perception - and such a purpose is wrong, for all abstractions, that can facilitate successful intervention, must have some useable Objective Content - that is something-of-the-truth of what is perceived.

And, also secondarily, he omits, as do the physicists, a third component in the perceptive process - a Universal, effectible and affecting Substrate.

For, in all the key phenomena that originally confounded the physicists, and precipitated their need to abandon Explanation, for mere formal description plus speculation, there was always a classical Hegelian-type, damaging omission in the assumed premises, namely the presence of a Substrate, which when re-instated proved sufficient to solve all the produced anomalies, without any recourse to Copenhagen whatsoever.

The crucial missing premise was the presence of that Universal Substrate!





Think about it! In the Double Slit Experiment, with a single electron, it was that moving entity which caused disturbances in the Universal Substrate. So, Energy from the K.E. of the particle, would be constantly causing such disturbances in all directions, and they would be propagated at the Speed of Light, by that Substrate. And, those caused Waves would far outstrip the much slower electron, and, hence, reach BOTH the Slits first.

The wave would then interact with each of the Slits, and cause a fan-like propagation from each to continue on the other side. This effect upon the wave has now split it into two waves, which would then interact - causing a maintained interference pattern in the space beyond the Slits, in the Substrate.

Finally, the causing electron arrives and passes through only one of the Slits, but whatever its then diffracted direction, (caused by the Slit) it will either encounter a cancelled channel, or a deflecting channel - depending upon the interference pattern, so that the interference in the Substrate now determines whether the electron goes either straight through un-deflected, or alternatively deflected to the left or the right.

But, that crucial interference pattern was caused by a single moving entity, and a very small one at that. Any attempt to measure the interference pattern in any way, will CAUSE many diverse and stronger disturbances, which will totally dissociate the weak interference pattern and, overall, let the electron continue along its diffracted path, without any substrate-caused deflections whatsoever.

The so-called "Collapse of the Wave Function" of the Copenhagen Interpretation, becomes a total collapse of an interference pattern in the Substrate, and its possible effects.

All the idealist Copenhagen stuff is irrelevant!

Žižek then goes on to say:-

the notion of "objective" things is subjective, dependent on perception, while wave oscillations precede perception and are thus more "objective":

Where do I start?

The notion of objective things is NOT subjective. It may not be the whole truth, but it will indeed contain some Objective Content. And, crucially, our conceptions are NOT wholly dependant upon perception either.

He chooses his "Dolly" to knock over from everyday prejudice only, while his "wave oscillations" (as an objective basis?) is pure Copenhagenist invention. There is nothing philosophically sound in any part of that quote! And, he finds a place to dwell with:-

"Heisenberg's version of indeterminacy (the "uncertainty principle") still leaves enough room not only to save the notion of an objective reality independent of the observer (if out of the observer's reach)"

"Out of the observer's reach" - the classic Kantian unknowable-thing-in-itself - the last refuge of idealism! So, with what can one fill that void?

Žižek takes the Copenhageners' conclusion based upon their assumption that it is the act of measuring, which actually flips the measured thing into its alternative natural form: the electron is flipped into its Particle, rather than its Wave form. "What else could there be?"

But, as this physicist/philosopher has shown, that interpretation assumes no all-embracing context - an effecting and affected Universal Substrate, which itself is changed by the act of intervention that is measurement, and sweeps away the re-directing interference pattern, which affected the particle to produce the wave-like patterns on the detection screen, and so allow the Particle to proceed straight through!

So he admits:-

"observation is only possible on the condition that the effect of the measurement is indeterminable"

He goes on, dealing with all possible suggestions as to how this may be "got around", but rejects them all using Hegel's own argument! He thus identifies the Copenhagen Stance as identical to Hegel's idealism.

Yes, I agree, but Žižek, instead, insists on equating it only with Hegel's Dialectics and not with his *idealism*! He is wrong, because a physical explanation is never considered - the role of an affected and effecting material Substrate.

As I have been at pains to establish, Žižek is not materialist at all, "transcendental" or otherwise, but a direct continuer of Hegel's idealism, hiding under the cloak of a false Marxism.

The Road to Nowhere

Žižek effectively argues, along with Bohr, for the indeterminacy of measured evidence at the sub atomic level, by insisting that any measuring device brought in to reveal the nature of something at that level, will inevitably affect the thing being measured.

And, that is indeed true: it is the holist position, and my explanation for the double-slit phenomena!

But, these two are not arguing from the same bases at all! Žižek is arguing from a holist basis, while Bohr from Heisenberg's Uncertainty Principle, which he is using to justify the abandonment of the explanatory side of Physics completely, allowing, instead, a totally unexplainable use of statistical and probability methods to deliver predictions without meaningful explanations.

But, their apparent "coming together" is an illusion!

Žižek isn't a scientist: he deals only in conceptions, and that is his problem. While Bohr is totally undermined due to his flawed, mixed-message assumptions, and is looking for a way out by jettisoning at least one part of his contradictory amalgamated stance.

Žižek has no idea of the key role of experimental investigations to validate conceptions, while Bohr wants to limit such physical investigations to merely validating the simplified and idealised formulae that he considers the driving essences of Reality.

Their common ground is their subscription to an idealist stance, but coming from different places with different objectives.

For example, the Equations that are crucial to Bohr's Copenhagen stance, were derived by experiments and methods based solely upon the opposite pluralist stance. Both of these contributors have intractable problems!

Žižek cannot switch to a materialist stance, and Bohr cannot switch to a holist stance! They seem-to-meet only because they both are moving to inhabit the cowardly "middle", all-things-to-all-men ground of positivism and pragmatism!

Why do you think that Post Modernism is so widespread today? It too is the subscription to Pragmatism as the solution to complexity! All are turning to the philosophically easy way out, namely "If it works, it is right".

Wrong!

The only way forward is via Explanations that are coherent, comprehensive and consistent in conveying meaning, AND are confirmed by deliberately testing interventions into Reality - actually designed to disprove them: but, also involving Hegel's holist corrections to pluralist methods which he termed Dialectics!

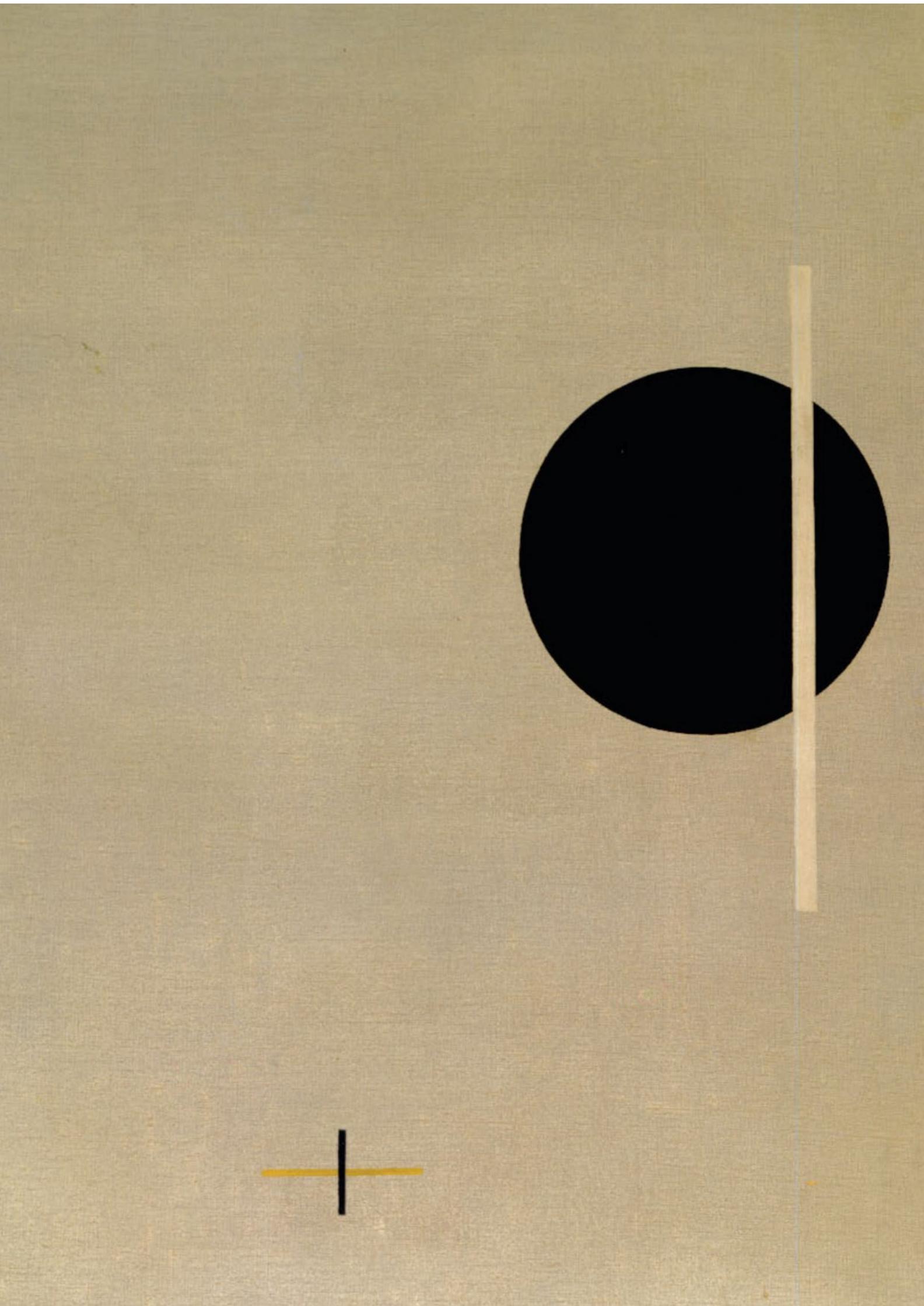
Now, Žižek, most certainly, does not pursue this line, but instead turns to his idealist teacher with another, idealist line for addressing this problem:-

The Hegelian name for this inclusion (of the effect of the measurer) is reflexivity." How does this work in quantum physics?

Following this, Žižek embarks upon a line of argument, which appears to be a discussion of the relative merits of the Copenhageners' position, and that of Hegel, but finally resolves itself into his real purpose, namely a condemnation of Lenin's position in his venture into the Physics of his day, via his book "Materialism and Empirio Criticism", which Žižek calls "naive materialism".

NOTE: For, Žižek to utter such nonsense is incredible! Has he not studied Lenin's Philosophical Notebooks (Volume 38?), in which he made a detailed study of Hegel's philosophical gains and inadequacies. To call such a contribution "naive materialism" is an insult! Lenin did understand Hegel, and used that to lead a successful Revolution: what was his weakness was that he too was not a scientist!

Now, what he doesn't make clear is what Lenin's objective was over a century ago with that book, and exactly who he was aiming his contribution at, not to mention who he was criticising, and when it all happened. As Lenin was the last Marxist to intervene in this way, so Žižek's





criticism must imply that Marxism has advanced further since that time, and that the person to go to for this “update” is Žižek himself.

Now, the writer of this criticism of Žižek, who is, indeed, a professional physicist, as well as a Marxist, also bemoans the lack of the forging of a necessary union between Marxism and Science, so it is obvious that the bulk of the work to be done in forging that union, was still incomplete even following Lenin’s contribution.

But, that necessary contributor is NOT Žižek! Neither is it Bohr or Heisenberg or indeed any of the Copenhageners.

For, their preoccupations were determined entirely by their incorrect pluralist stance, and expected to deal with individual phenomena, and use any extractions from such to deal with absolutely everything.... in time. The fact that they had to find another paradigm, for the sub atomic realm, without abandoning their stance, everywhere else, actually torpedoes their approach.

Yet, Žižek is drawn into their arguments, letting their bastardised “holism”, applied to all individual phenomena at the sub atomic level, determine a general position. It smacks of them correcting Marxism, or more accurately them “correcting” Žižek.

There is another side to Holism, within a materialist stance, which is what made it, even in western thinking, vital in explaining phenomena, and that is its scope or width, in explanations beyond the individual phenomenon. Only a holist stance can consider diverse compound phenomena, or even developments over time, and can infer from such wider considerations, valid definitions at the contributing level, which fit in with the whole considered set!

For, such a method does NOT involve intervening at the individual phenomenon level, but instead considering what effects the various contributions will make to complex outcomes.

Pluralist Eternal Natural Laws can never do that, and when dramatic flips occur, they give us absolutely nothing in explanation!

This is epitomised in attempts to simulate complex ongoing phenomena, where the only thing they can insert

(which they get from prior data) is the identification of a Key Variable and its Threshold Value when a flip will occur. That is NOT an explanation: it is a pragmatic fix!

Now, the reader should see why the trajectory of Žižek’s arguments could not be allowed to dominate.

He is certainly a clever dialectician, and would, and indeed does, lead you upon a merry dance determined by his own purposes.

Here is the telling question!

Does his account lead you to transcend the Copenhagen Interpretation of Quantum Theory, or merely include it as a valid development?

And, I can be brutish in my condemnations for very good reasons.

I have explained away every single one of the anomalies in the ill-famed Double Slit Experiments by jettisoning Copenhagen completely, and doing real holist researches, which reveal how these phenomena should be handled in order to UNDERSTAND them!

Where are the explanations of such anomalies from Žižek? Now, the mis-direction is made clear in the following quote;

“.....whenever we repeat the same act of measurement under the same conditions (the same entanglement of object and apparatus), we will obtain the same result”

Now, this is indeed perfectly true: but how is it used?

It is normally used by scientists to validate the soundness of what is extracted from experiments carried out in rigorously “farmed” and controlled domains: and, consequently, to justify the “universal truth” of the equations thereafter fitted-up to that data.

It is a cornerstone of Plurality!

It has been the received wisdom for centuries! And, crucially, also for the rest of Physics, outside of the Sub Atomic realm, that is still exactly the same assumption - even by the Copenhagenists, but used there to validate the pluralist stance.

So, what is really hidden in this supposed rapprochement? Do the Copenhageners dispense with the pluralist belief in eternal Natural Laws? No, they do not!

So, how can they subscribe to the above concession? "It isn't the Laws that change: it is the material entities involved!", is their position. They have the Particle becoming a Wave and vice versa! They have Wave/Particle Duality.

Let's be clear: when confronted head-on with the truth of Holism, the Copenhageners just could not jettison Plurality, so they instead had modified concrete Reality, in a totally inexplicable way, changing its very nature when measured. And then, coping with this by both abandoning Explanation completely, and invalidly tailoring Probability Mathematics to match what they could extract, as the "New & Better Form of Theory"!

One has to ask, "Where exactly does Žižek stand, upon this travesty of Science?" So, for the benefit of those dismissing this critique, I must add the following quote:-

"Bohr's reflections amount to a materialist critique of the naive-realist epistemology and ontology of Lenin's Materialism and Empirio-Criticism"

As I said:-

ONE: it is a criticism of Marxism!
TWO: Žižek agrees with Bohr!

To criticise Lenin's venture into Physics is pointless. It was a century ago, and his motive was to pull Lunacharsky and others back from embracing Poincaré and Mach's Positivism. And, it did its job!

But Marxism had not comprehensively addressed Science then: it still remained to be done. And note, the inheritors of Poincaré and Mach were precisely Bohr and Heisenberg. Lenin had is target right, if not a comprehensive critique of the Philosophy of Science at that time. And, the fact that such a crucial task has still not been completed tells us profoundly of the decline of "Marxism" since that time, and I include Žižek in that condemnation.

The Revision of Marxism?

Žižek says:- *"The lesson of Bohr is thus not that reality is subjective, but that we-the observing subjects-are part of the reality we observe."*

And, then he lists the flaws of our ideas about knowledge, with respect to our idea of Reality which are:-

(1) *as infinitely richer than our knowledge and perception of it (we can only approach asymptotically the infinite wealth of reality);*

(2) *as much poorer than our experience and perception of it: reality is stripped of all "secondary properties" (colors, tastes, and so on), so that all that remains are the abstract mathematical forms of its basic elements.*

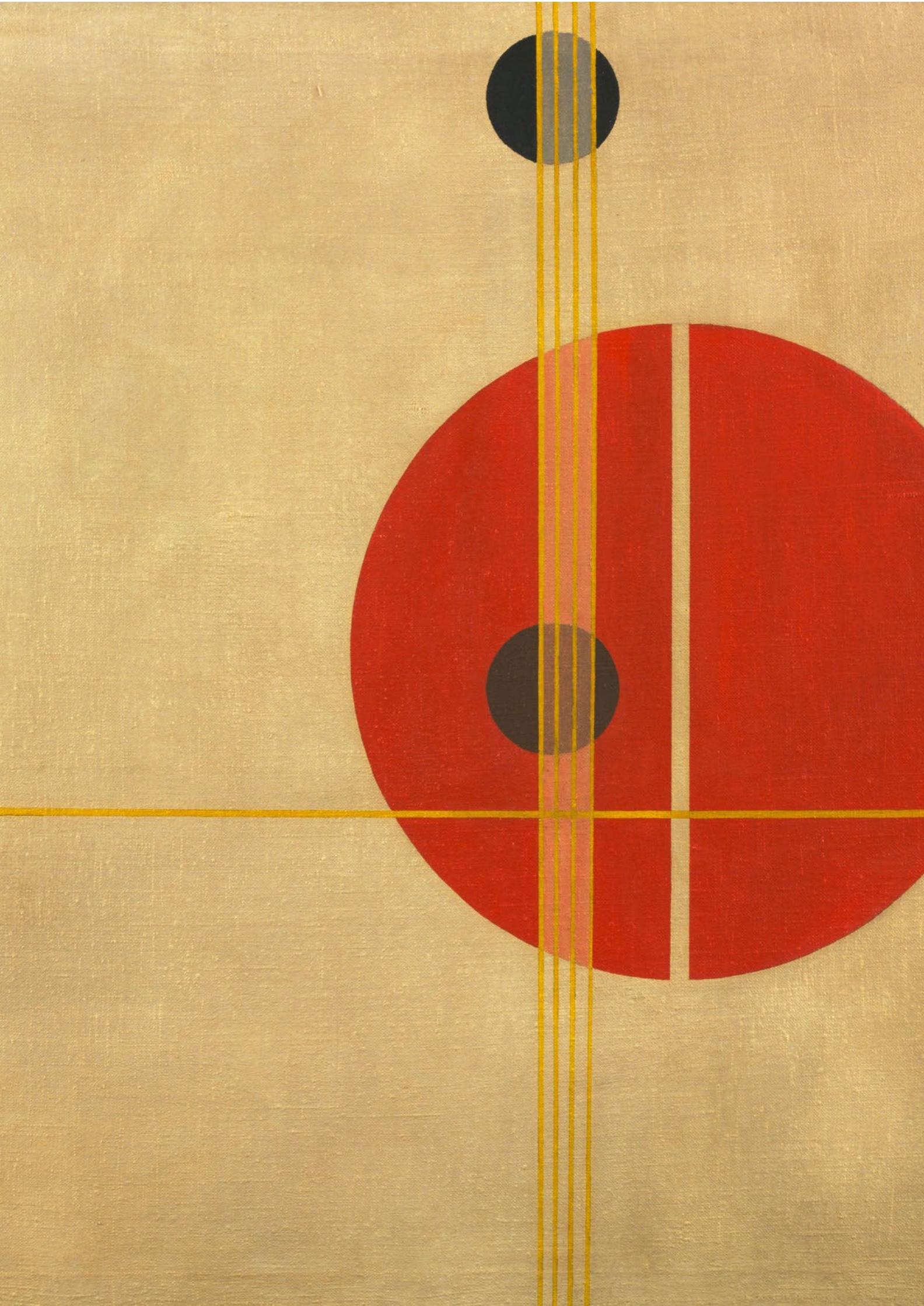
So, there it is!

Read these again, and particularly that last damning phrase!

It displays the steadfast, pluralist stance of all Science, and certainly NOT the holist stance of Marxism!

As this Marxist physicist and philosopher has shown elsewhere, the mathematical forms extracted from Reality by scientists are NOT, in any way its intrinsically natural or driving essences. Such features are more about Mankind and its methods of abstraction than concrete and active Reality itself!

But, Mankind discovered how to make sections of Reality conform to the much more easily handled Principle of Plurality, by first severely restricting the studied context, until it more clearly reveals a certain formal factor, and



then tailoring an imported, purely-formal, mathematical relation to fit that simplified data, in order to get their Equation or Law. These actions both simplify and idealise situations to give them a useable "Law", but which can then, only be effectively used, within that farmed-and-maintained unnatural Domain.

What has been perfected by these techniques is not Science, but Technology. For, Science has a very different purpose! Its objective is to move ever closer to actually understanding the nature of Reality.

And, perhaps surprisingly, in making connections between multiple, natural phenomena, and, particularly, when many of such are acting simultaneously, it has had to take a holistic stance, to get anywhere at all in this objective.

Indeed, as this theorist has shown, from its outset, "Science" (which, historically, always included Technology) was always a contradictory amalgam of Materialism, Idealism and Pragmatism!

And, participants used to pragmatically-switch between premises when necessary. Indeed, as Science both widened and deepened, these divisions were increasingly carried out by different groups of practitioners, who found pragmatic ways of co-operating, though not necessarily agreeing, with each other.

Now, a couple of long passages occur next in Žižek's account: the first seems to be Bohr's justification for Copenhagen, while the second seems to be Žižek take upon Cosmology, the Big Bang, String Theory and "M" Theory.

And, with the latter our narrator reveals an area he knows even less about than Physics, so I won't be including that in this critique.

The former point, perhaps due to Bohr, is at least on-topic, and deserves dealing with seriously, if critically.

It concerns essentially the Whole and the Part, and includes a selecting-agency in every particular investigative experiment. The justifying point made is that is necessary, because we modify, whether intentionally or not, whatever we are measuring, by that very act of measurement.

So, every such intervention will select only one effectively-isolated (or made dominant) aspect of the nature of that situation.

And, this will be true, whether that was the intention of the investigator or not! Now, clearly, there is much to commend these ideas. Indeed, though I would put it differently, I would agree with the main point, which is basically a holistic one.

But, rather surprisingly, Bohr uses it to explain why Classical Physics in the macro world, legitimately co-exists with the Copenhagen view of the Sub Atomic World: it is, I'm afraid a misuse of a holistic view to legitimise his Sub Atomic transformation.

It is the inevitable consequence of the amalgam of contradictory stances that have been entrenched for centuries in the basic premises of Science. Bohr is intelligent enough to take a correct holist position, but not catholic enough to see the relevance of things above the particular, individual interaction level, which he concentrates solely upon.

In other words, he sees things holistically "down there", but still pluralistically "up there".

He doesn't do the holistic integration of individual phenomena in higher level explanations, which is where Science has been able, sometimes, to transcend the limitations of particular individual accounts, not least because it doesn't include the problems associated with direct measurements in that lower level.

And, most crucial of all, doesn't see how such top-down views - from the complex to the individual, can resolve the very difficulties, due to modifications, which he identifies to occur at the lower level.

He also retains most of the assumptions of the Classical Scientists, but sadly, actually, keeps those that allow the purely speculative additions, without which his new approach would fall to the ground!

I am hoping that scientists will read this critique, but wonder whether they too might baulk at abandoning their long-held amalgam of premises. Every account I see, hear or read from current physicists, holds the conception that our World is built from eternal Natural Laws, very dear indeed.

Will they want to help build that essential bridge between Physics and Philosophy, by dismantling the very grounds on which they currently stand, which I see as imperative in taking Science into the future that it deserves?

Now, Žižek draws the following conclusion:-

"(that) the paradoxical oscillation between the opposites is the price naive materialism pays for its abstract procedures"

And, of course, he has just affixed that damning label to Lenin. Wrong! That "error" is to do with a pluralist, non-dialectical approach, which is STILL Bohr's position, in spite of his sub atomic frigs, and certainly NOT Lenin's position [read Lenin's Philosophical Notebooks]

You may wonder why an avowed Marxist, such as Žižek, feels it necessary to criticize Lenin - the most important contributor to Marxism since Marx, and the successful leader of the World's first Socialist Revolution and to do it by means of Bohr?

Žižek, clearly, has an agenda!

Is it to equip the World's Working Class to take the power? Does the reader see anything in his extensive outpourings to justify such a motive? Or, is he negatively criticizing Marxism via the dead-end, idealist excursion of the Copenhagen Sub Atomic physicists?

After a century of decline in Marxist Theory: a century in which Trotsky felt compelled to write "In Defence of Marxism", and in which Marx's objective of unifying Science and Marxism has not been carried through, this avowed Marxist resorts to the idealist nonsense of bourgeois scientists to beat Lenin with, his objective is most certainly something very different indeed.

He revises Marxism to stymie that essential development!

NOTE: This section does involve Žižek delivering a very clear description of Hegelian Dialectics and its holistic basis. So this is worth a read for that alone. But, not the evident lack of two things:-

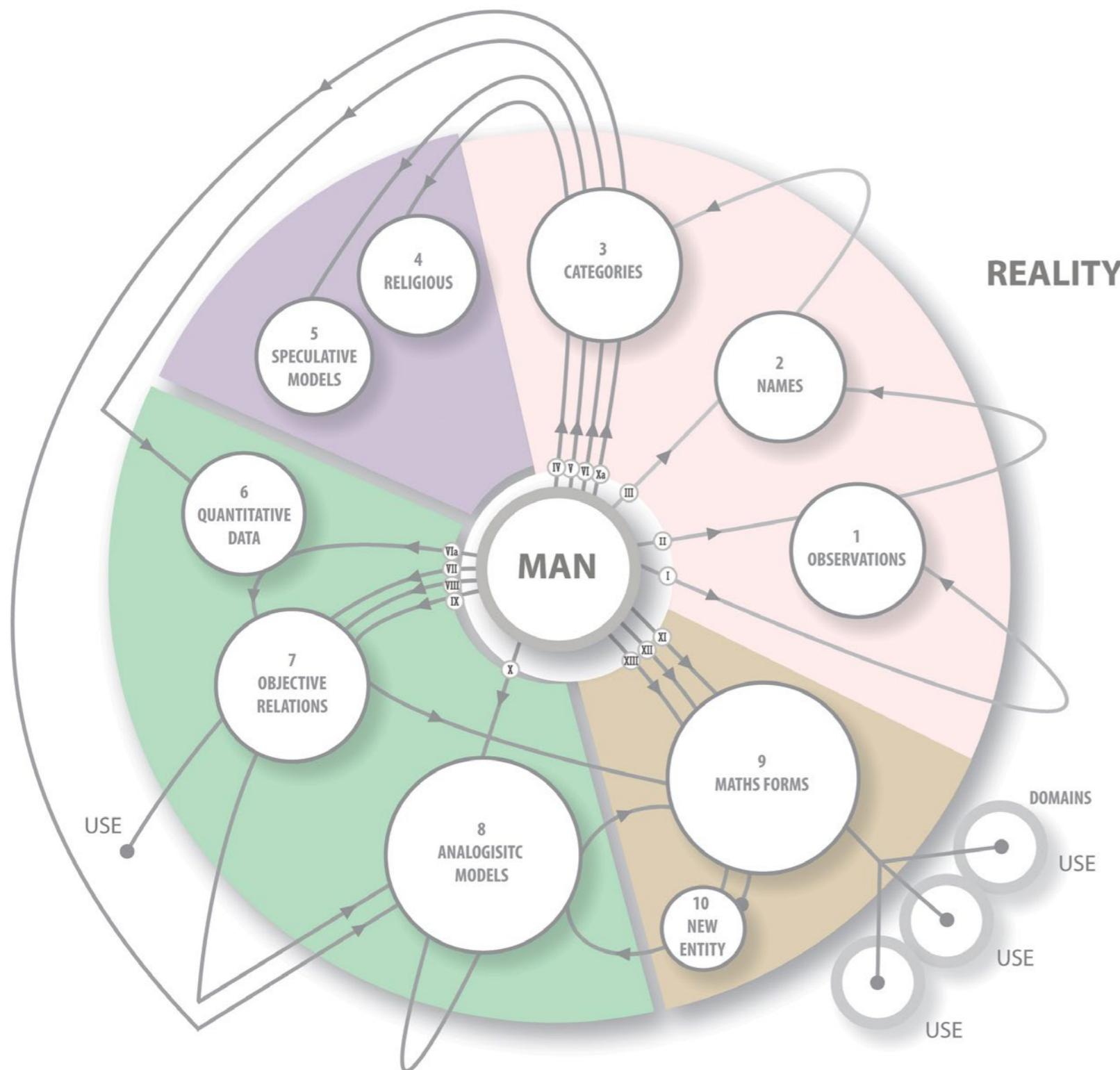
1. A materialist basis
2. An imperative top-down integration of bottom-up discoveries

For, both these are essential: and the latter one vital in including the essential recursive loops that The Buddha, himself, knew to be crucial, to the holist stance, as explained in the Loka Sutta.

Finally, in reading this section, beware his conclusions: he has very different motivations to a Revolutionary Marxist: he is an armchair philosopher, in love with the idealism of Hegel.

The Limits of Abstraction

How abstraction fits into a dialectical world & the natural emergence of opposites



Some years ago, after extensive research I produced the following diagram entitled *The Processes and Productions of Abstraction*.

It requires a close look at the accompanying papers on Journal to be able to correctly extract what the diagram delivers, but it did then lead to some major advances in the many possible Worlds in which such different productions could actually exist.

The formal areas on the diagram are:-

MAN - the active element, in the middle

REALITY - as the all-containing Ground

CONCEPTS - through-and-into which the various Productions occurred

An important, and surprising, part of that latter "mental area" of CONCEPTS was termed Ideality - because it by-passed Reality crucially in the various Processes involved in its Productions.

Indeed, it was this Ideality - a rich conceptual World, that was the repository for Mathematics, and enabled a significant advance to be made in the Philosophy of Mathematics by this theorist.

But, it was only a first step, for it then, more generally, and only briefly, involved just a few, and by no means enough, recursive loops, back to earlier productions, and, thereafter, new consequent processes, with necessary corrections.

But, clearly, even more radical, and-even-transformative, changes turned out to be absolutely essential too!

It was not yet, by any means, about Dialectical Logic and the essential Dialectical Materialist philosophical

standpoint. For, NO Abstraction can possibly ever be Absolutely Correct!

The actual process involved, in arriving at an Abstraction, though it is the result of a valid realisation of some measure of occurring Objective Content - some individual aspects or parts of the Truth, it will still never be comprehensive!

Only for a time, will it be possible to handle a given Abstraction, as if it were "The Whole Truth". For, its validating context will always be limited!

Indeed, we have already-fairly-quickly become aware that unless we remained within the exact-same context, or even rigorously worked to maintain it, our Abstraction would always, ultimately, begin to Fail.

And, remarkably, when it does, the relevant Abstraction, or even "Law", could actually turn into its exact-opposite! We could even arrive at a point where Two-Diametrically-Opposite-Abstractions, would both be, apparently, equally-valid, but on then trying each alternative in-turn, only one would lead onwards in our reasoning.

What Zeno of Elea had discovered, 2,500 years ago, was concerned with the abstractions Continuity and Discreteness - for, when applied to Movement, it was not an odd-and-rare occurrence at all, but a very general and unavoidable feature of all Abstractions - reflecting both the Holist (constant-change) Nature of Reality and the natural trajectory of such changes.

The Formal Reasoning assumption that Absolute Truth could be built out of sufficient eternal elements, be they Abstractions or Laws, was clearly incorrect!

And, therefore, what finally buried Formal Logic and its Reasoning, which always prohibited contradiction, as a sure proof of failure, either due to incorrect Reasoning or erroneous concepts, was, instead, slowly being realised to be the natural dynamic of intrinsic change and development!

Of course, the emergence of the exact-opposite to a conception takes a great deal of swallowing: why couldn't qualitative changes just lead to something else?
Why only the exact-opposite?

Now, if the very centre of your mental world is Formal Logic, the required explanation will just never be found! To discover it, you have to study concrete Reality, not only as it exists today, at this moment - but, also, via the History of its development, wherever it leaves sequential evidence!

Instead of attempting to derive higher levels of existence from mechanistic complication of lower levels, you must, instead, study the higher levels to throw light upon the lower ones - where the evidence is always unavailable!

The real revealers of Reality are only available by studying Geology, Life, Man and Consciousness - for there the tempo can be made visible and analysed.

Dialectics

The emergence of opposites in Reality really does require further elaboration. Perhaps surprisingly, the ideas which ultimately led to the following Theory, came originally from Charles Darwin's Origin of Species, via his Theory of Natural Selection.

For, in the attempt of this theorist to tackle the Origin of Life on Earth, theoretically, Darwin's Theory could not be used, because it only involved contention between populations of living species, competing to survive.

Clearly then, though such could be used after the Origin of Life, it certainly could not in the conversion of non-living processes into the very first Living Things.

So, the arena for that Origin, and the natural processes occurring there, would have to be considered, as somehow, having a similar effect to those involved in consequent Evolution, but with none of the necessary

competition-and-reproduction that dominated Darwin's Natural Selection.

Clearly, only various physical and chemical circumstances-and-processes would have to be happening.

I'm afraid the old random chance occurrences, allowing significant changing of the game, are just too unlikely to be seriously contemplated, no matter how long you give it to act. So, upon careful analysis, it is clearly totally impossible!

The most important features would have to involve easy moving of involved substances, varying conditions and multiple, available substances.

Clearly, the most obvious transportations, would occur if everything was happening in a liquid (water), which due to other external physical forces was constantly "on-the-move" and, consequently, also "on-the-mix".

Many such environments have been suggested, but only one stands out as ideal.

It is the occurrence of shallow and connected, tidal pools, on the edge of a globally-connected ocean of water, situated on a spinning planet, with an inclined axis, and a nearby, warming star, whose rays would frequently get-to-and-affect our described environment.

A reasonably-complex Atmosphere would also be essential, so the diurnal changes in illumination by the star, due to the spin, and the seasonal changes, due to the inclined axis, would not only cause varying Weather, but also both vigorous flows and strong interactions between that Weather and the global ocean.

The Nature of that Atmosphere should also be regularly added-to by ongoing volcanism and eruptions.

All of these situations would enable varying conditions, that also regularly recurred, all of which would be conducive at different temperatures, to allow many different chemical reactions to be possible.

So, with the right conditions in place, what would unavoidably happen?

Various reactions would take place: though different in varying local conditions, and an active sea would move





these around - not only locally, but also globally. Some would dissociate again, if the conditions became too extreme, but with the full picture as described above, there will always be places where certain things could and would survive, even if they were not happening everywhere.

We can conceive of a mix of different reactions taking place both incessantly and simultaneously, with facilitating energy perhaps from the nearby Star, or heated water from the vicinity of volcanism. The big question is, "What would happen next?"

The usual assumption is that in time all possible situations will occur, and in many one-chance-occurrences, these will lead to more complex entities being produced, though still entirely non-living! Taking the very same reasoning further, and over colossal time periods, enough totally chance occurrences, will very slowly take the complication to the very threshold of, and then into, the existence of the very first life - what utter rubbish!

You can see that the theorists involved in such theories are of the classical, pluralist, formalist type. But, that would never, ever do it! It is a mechanist, almost-Laplacian narrative.

But, the Origin of Life was an actual, and totally game-changing, Revolution: an Emergence of the first water! A change, that once it occurred, took hold and completely out-competed all non-living processes from the outset! With absolutely NO living competitors as yet, it would rapidly dominate every reachable conducive area across major parts of the Globe.

Now, compare this with the frequently suggested sequence of very unlikely, random occurrences, that fail in their millions before one manages to survive - faced then with another long stagnation, before another freak occurrence moves another small step towards Life.

The alternative, presented here, conceives of an entity being created that has absolutely NO living competitors yet possible, and something on-the-way-to-life, competing only with non-living chemical processes, solely, on the basis of competing for the same resources. Indeed, what will have happened in the preceding period with only non-living processes happening, is that certain processes requiring, and finding, their required resource in abundance, usually churns on for literally millennia,

producing enough products to lay down a layer of sediment thick enough to form rocks, still around billions of years later.

It seems very likely that the first "near-life" occurrence will also dominate in a similar way to the non-living example suggested above. Of course, for this to happen, there is, still, a Revolution to describe!

It is, as been proved many times, totally impossible using the usual mechanistic, pluralist assumptions. So, as suggested earlier, we must look for evidence of actually-occurring Revolutions, in much later developments, long after the First Emergence of Life, to extract a working conception of how such a radical, totally transforming Change actually occurs, to see if it can throw light upon the most Revolutionary Event of all - The Emergence of Life on Earth! It has been done several times, in various different ways.

First, Karl Marx applied the newly revealed Dialectical approach to History, and discovered a whole series of such Revolutions in the Social Organisation of Human Societies.

Second, Lenin used it as a general method to guide the Bolsheviks within the Russian Revolution to seriously affect the outcome.

Third, Schofield went on to generalise Darwin's Natural Selection to non-living competition between chemical processes, in the period immediately prior to the Origin of Life.

Fourth, he then went on to formulate his Theory of Emergences, which traced the trajectory of an Emergent Event from a prior Stability, via a major Crisis, to a Cataclysmic Collapse, then swooping to what appeared to be Total Chaos, but, surprisingly, then delivering, naturally-and-inevitably, a self-constructed ascent to a wholly New Stability, at a different Level entirely.

Though much has still to be done, it is already underway!

Dialectical Contradiction

Abstracting from reality and its consequences

As both a professional physicist and a Marxist, I have a decided advantage over either a pure physicist or a pure Marxist, for, implicitly-embodied in both of my two seriously-pursued-disciplines is the very-union which Marx conceived and sought, when he abandoned Idealist Philosophy, in spite of the great contributions of Friedrich Hegel, and converted to a solely Materialist Stance.

He was painfully aware of the short-comings of Idealism, and the Dialectics of Hegel seemed to give him the possibility of a meaningful integration of those gains with the then other major and fast-growing alternative discipline of Science.

Marx was aware, from Hegel's Dialectics, of both the powers and the inadequacies of Abstraction. For, such extractions-from-Reality were certainly never the "fundamental Bricks-of-Truth", from which a real Understanding of Reality could be built.

They did contain some truth, but not as any eternally-true constituent parts, but, instead, only temporary, flawed and always modified extractions.

For, Mankind usually only glimpsed regularities in Nature, and then, either chased them as they appeared, or intervened to make them much clearer, until they were capable of being extracted.

The processes involved, therefore, inevitably-delivered, both simplified and even idealised extractions.

To make this crystal clear, the processes that had been involved in originally establishing Mathematics were able to deliver a considerable help.

In those processes, what was first essential was to simplify an observed form-or-pattern, found in Reality, to make it considerably easier to handle, and then, to modify it into an idealised version, in order to make it possible to successfully predict subsequent outcomes from an observed current state, via that idealised Form.

And, the development of measurements and generalised forms of encapsulating such extracted relations (using algebraic symbols - usually in the form of alphabetic letters) to represent particular measurables.

Both of the principle modifications - that is Simplification and Idealisation were absolutely essential to these methods.

And, in appropriately-modified (or "farmed") situations, they would not only fairly-accurately represent that situation, but would also allow equally-successful predictions to be made, within it!

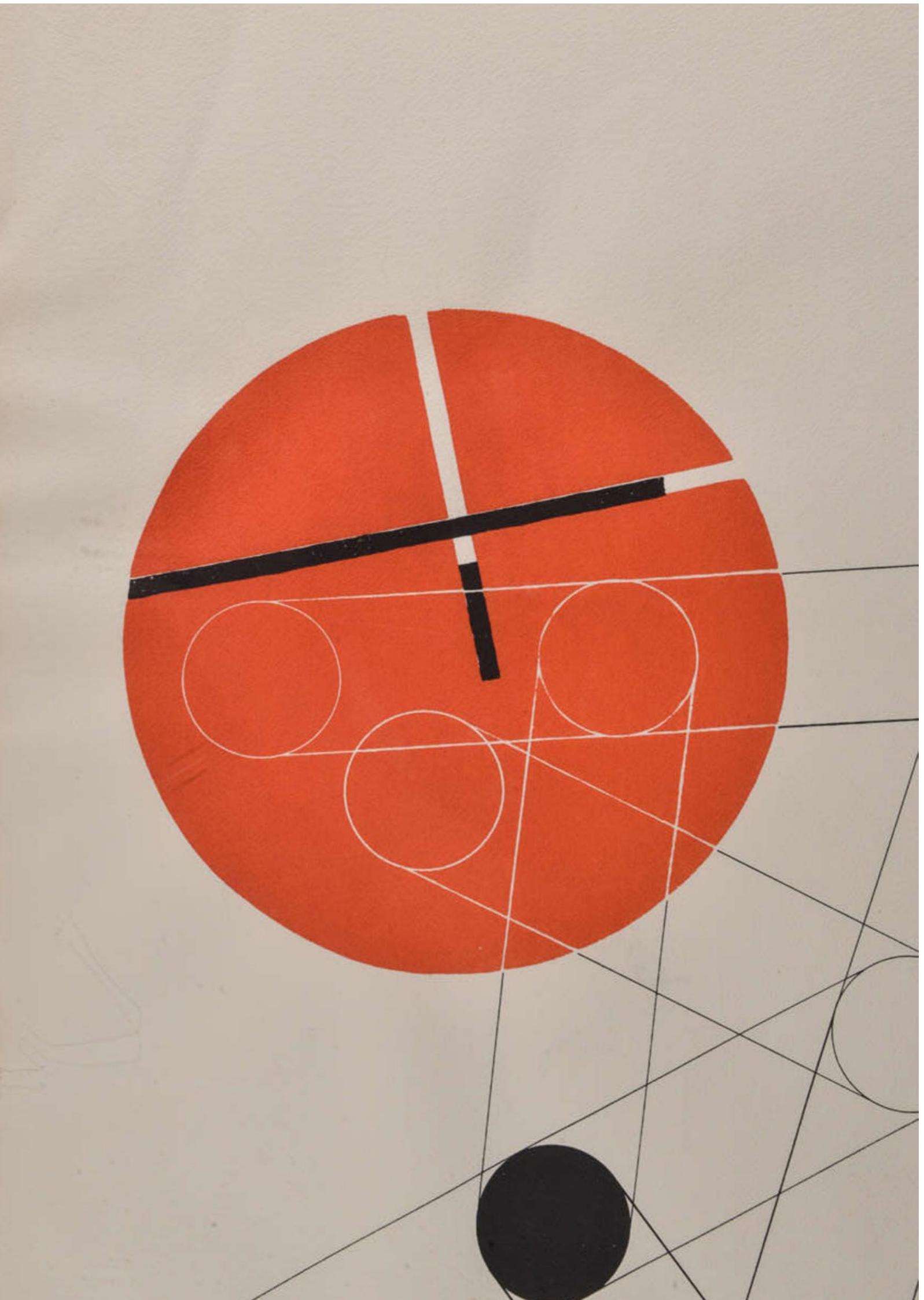
Yet, these achievements were theoretically misinterpreted from the very start!

It was, incorrectly, assumed that important eternal aspects of Reality had been extracted. And, hence, if all the required extractions in an extended range of situations were achieved, then that section of Reality could be both fully described and dealt with in various useful ways.

But, it wasn't true: they could not accurately do what was assumed!

Clearly, two extremely critical errors had been involved in these standard processes.

First: it wasn't Reality-as-is that had been extracted, and Second: the assumption that these extracted primaries were unchanged was also incorrect.



Indeed, as more recent work (by this researcher) has revealed, it wasn't Reality that had been studied, but an unusual Subset/Superset that could be delivered by simplification and idealisation, which only appeared, if true confirmation by reference to real, unfettered Reality was purposely and rigorously avoided both in capture, and in use!

Now, pragmatically, these flaws could be dealt with, as long as situations could be rigorously limited to the required simplifying content, for then, all would be well both in prediction and in use.

But, each and every extraction would require its OWN and different, arranged-for context to be useable.

Yet conversely, in Thinking, an alternative "world", in which all such relations seemed to be valid, was possible. This philosopher immediately labelled this cerebral, simplified and idealised world as "Ideality"!

And, it was composed ONLY of descriptions in simplified and idealised contexts. Absolutely NO explanations were involved! "Conforms to this relation!", is certainly NOT an explanation.

But, even worse was to follow... The key assumption, involved in such a stance, was that Reality is entirely composed of eternal Natural Laws, which never change, and produce complexity merely by diverse additions in varying amounts.

Therefore, all the applied adjustments to investigated contexts, which had been essential to make extractions possible, could not possibly change what was being sought: for they were "eternal Natural Laws"!

Now, all of this depends upon the Principle of Plurality, which is certainly a Total Myth. While, it's opposite, the Principle of Holism, which insists that "Everything affects everything else!", is, certainly, much closer to the actual nature of Reality-as-is!

Now, for the debilitating clincher! The Greeks, justifiably delighted with their Mathematics and eternal Natural Laws, applied the same sort of assumptions to Reasoning, in what they termed Formal Logic: the Truth could be arrived at by using eternal Rules of Reasoning and known Factual statements, to "rigorously" derive more and more of it!

But, it isn't true!

And, almost-immediately, Zeno of Elea began to unearth several clearly evident flaws concerned with the concepts of Continuity and Discreteness, both of which, and in several ways, could be shown to lead to contradiction in what appeared to be perfectly valid Reasoning.

He published them in his famous Paradoxes, but, surprisingly, no one was able to explain the problem, not only then, but also for the next 2,300 years, when Hegel revealed his Dialectics as a better general alternative to Formal Logic.

Indeed, later it became clear that the flawed methods of the Greeks, could only ever hold in Stable situations - that is within Stabilities - whether natural or arranged-for: while whenever qualitative change was involved, either in intervals of dramatic Changes, as well as other, more gradually-drifting circumstances, Dialectics was essential!

Now, to really explain Dialectics, there is only one way - and it isn't that put forward by Hegel or any of his more recent followers.

Indeed, This researcher, who is both a philosopher and a physicist, has been able to explain many of the tenets of Dialectics, by reference to the concretely-existing, Physical World: indeed, and that cannot be done without Explanatory Science.

But, it is a different kind of Science from that conforming to the criticisms related above. It has to, instead, be based upon the Principle of Holism - with, of course, "Everything affecting everything else!"

The usual assumption of Random Chaos as a starting point in our Universe, must be dumped as either a simplification or an idealisation, or BOTH!

Clearly, for any real, self-moving development to take place, the better assumption must be based upon the inevitable interactions - not only involving physical collisions, but also mutual-orbitings (as in all atoms), and in hierarchies of chemical reactions producing various different compounds - within constant movement and mixing.

What then would be likely to happen?

Clearly, both associations and dissociations would be unavoidable, as would the very same resources being required by different chemical reactions. There would certainly be a non-living form of Competition, which, unlike the fabled Random Chance scenario, would be different in different localities - depending upon the temporary preponderances of certain resources over others.

In such circumstances the favoured reactions would act - producing their consequent products far faster than any other reactions, and hence producing, as a result, yet another preponderance.

Also, and very importantly, if two processes came together where one used the other's product, as its necessary resource, a kind of linkage could develop - particularly when involving preponderant substances, and related preponderant processes.

Very quickly, without any other reasons at all, certain Dominances could grow exponentially. And, the only other possible dominances would have to be those not competed-for by the first dominance, they could be involved with other different resources and products, and so themselves proliferate. Or, they could also even grow because they were effectively one-way interventionists in a dominant set of processes, actually therefore become parasitic upon such systems.

That is they could grow, at the expense of the first dominance without being themselves diminished by it.

So, apart from totally unrelated processes, there could be a Selection of Opposites, above the irrelevances of the rest.

And, the balance between them could be with one or the other winning, or at various states between those extremes.

And, as in all holistic situations, these conditions might for a time persist in one extreme - a Stability, only later to be undermined and even by replaced by its opposite - in the consequent Emergence of yet another Stability!

Now, the reader must excuse this unavoidably cursory description: the writer is aware of its inadequacies, but convinced that not only could a fully coherent system be ultimately described, BUT also, and crucially, that whole

complex set of changes be arranged-for in a suitably-designed Experiment (similar to his proposed re-design of Miller's Experiment, but with each succeeding version designed, primarily, to deliver a better version in the next attempt: a holistic form of experiment, if you will?)



The Grounds for a Žižek Critique

Slavoj Žižek is a world-renowned, self-proclaimed Marxist, and has produced an extensive body of work, with which he has built a world-wide set of supporters for his version of Marxism.

But, as a Marxist myself, and also a fully qualified physicist, I had something of a shock when I read the chapter in his book *Less Than Nothing*, which he entitles *The Ontology of Quantum Physics*.

I had previously read his Chapter - called *The Limits of Hegel*, from the very same book: and though by no means in full agreement with him, did recognise his brilliant use there of Hegelian Dialectics.

He was certainly worth a read!

But, when it came to my specialism - Sub Atomic Physics, it was evident that we, immediately, parted company in a truly major way.

Žižek is no sort of Scientist!

And, that didn't just undermine his ideas upon that subject: it undermined his purported Materialism too.

Looking back to his work on Hegel, it became clear that he certainly wasn't as critical of Hegel as Marx had been. He hadn't switched to a consistent Materialist stance! He was still a kind of Idealist - subscribing to Hegel's Dialectic, but certainly NOT to Marx's intended objective of unifying Philosophy with Science. He, like Marx before him, just didn't know enough about Science. And, crucially he, also did NOT understand Materialism.

When the physicists Bohr and Heisenberg established the Copenhagen Interpretation of Quantum Theory, they were reacting to the contradictions, within their subject, due to a majorly flawed philosophical stance, by undertaking a major retrenchment - abandoning holist explanatory theories for pluralist formal equations only. They were abandoning Materialism for an amalgam of

Idealism plus Pragmatism!

But, as a non scientist, Žižek didn't even notice what that involved. He could "integrate" their ideas with his own contributions, particularly what he had taken on from Lacan.

I had to undertake a root-and-branch critique of Žižek's position.

Žižek does not, and indeed cannot, equip the Working Class for their coming fight to overthrow Capitalism. That is a job for Marxists who are completing Marx's objective of unifying Philosophy and Science, and providing the theoretical means to achieve that goal. But, Žižek's version of that objective is, "If you can't beat them, then join them!" - the opposite of Marx's objective.

The contributions in this section are, therefore, a small set of preparatory papers giving some idea of the Ground that is, and will be, necessary.

Fuller, more-comprehensive theories are available, if required via SHAPE Journal, but if the reader is already fully prepared, reading these few grounding notes, will not be necessary.

Completing Dialectical Materialism

What is missing in Žižek's Marxism?

When attempting to deal with someone like Žižek, you are constantly trying to cope with, both a way of thinking, and a whole consequent vocabulary, that are saturated, nay determined, by his still-idealistic premises.

He claims, of course, to be a Dialectical Materialist - a Marxist, but that is evidently just the coat-and-hat that he feels it necessary and comfortable to wear.

And, it is made even more difficult, when there are parts of his stance that you not only agree with, but would have to defend alongside him, against the massive consensus, which takes a very different position upon these shared premises.

The most evident shared premise is, of course, Dialectics. But, much more basic than that, is the shared subscription to the Principle of Holism, rather than the consensus belief in the exact-opposite - the Principle of Plurality.

The trouble is that Marxism, or more correctly Dialectical Materialism, was not totally and finally defined by Marx, for he had a Social Revolution to prepare-and-organize for, and much still had to be done to maximise the reach and power of this revolutionary attempt, to ultimately unify both Philosophy and Science, into a single coherent, comprehensive and consistent stance.

For, in spite of Michelet's brilliant History of the French Revolution, the task not only required the full participation in such an epochal Event, but also the professional Knowledge and Understanding of a scientist, to be able to move towards a generalised, indeed, a true comprehensive stance.

And, the main trouble is with crude, basic Holism!

For Holism and Plurality are a Dichotomous Pair of alternative concepts - indeed, the extremes generated as the result of incomplete premises as Hegel himself had

crystallised in his Dialectics - the more real-and-active alternative to Formal Logic, in dealing with Abstractions. Indeed, "Ultimate Holism" as embodied in "Everything affects everything else", is true, but totally unusable, in almost all circumstances: for absolutely Nothing is fixed, and in its most basic application - absolutely everything changes along with everything else, all the time.

How could any sort of Reasoning be possible on that basis? And the answer is, "None!".

The possibilities of a kind of Reasoning were, however definitely achievable with the opposite concept of Plurality. But, Plurality - as it is usually defined, is yet another crude concept, for it assumed that all elements to be used, in any way, MUST be fixed: so that they don't change at all!

The cornerstones of Plurality are the ideal-fixed-forms of Mathematics, and the eternal Natural Laws of Physics. So, as long as these incorrect assumptions are made, some progress in dealing with complex mixes seem possible.

And, it certainly was in Mathematics, for a great deal of purely formal complication was, indeed, possible: a whole world of Pure Mathematics could be built.

But, it wasn't our World!

Major "engineering" was necessary to make our real world fit-in with Plurality. In what became known as Science, literally nothing was possible, historically, until Mankind learned how to control, modify, and maintain limited situations to approximate to a pluralist state , but only for a given sought-for relation.

And, that wasn't all! The Greeks not only gave us Pure Mathematics, but also Formal Logic - again made possible by making Statements fixed and unchangeable too!



Now, any thinking about these crucial areas had to be by Reasoning, and so it too was severely hog-tied by Plurality.

As before, it worked in “maintained circumstances”, where things were constant, but failed miserably, when things naturally changed into something else.

Now, the reader can imagine that these ideas could be pursued comprehensively, and we could and indeed would go a very long way, if I was to carry on with it.

But, this isn't a treatise upon Epistemology, but merely “The trouble with Žižek”, and that is difficult enough!

Clearly, for him, and everyone else, crude Holism is a major problem, and his total solution, as you might expect, is Hegelian Dialectics. But, in dealing with quantum physicists, he cannot oppose them, as he should, with ‘The Full Monty’, so he uses a combined approach with Engels’ Dialectics of Nature methods of revealing resonances between Dialectics and unavoidable opposites in the Copenhagenists’ researches and theories: the “look we are the same” technique, while, at the same time accepting their idealist retreat from Materialism!

He can do it because that is his real position too - retreating from materialism into idealism at every turn!

Not himself being a real scientist, he cannot intervene, as a Dialectical Scientist would, by resorting to concrete Reality. He cannot do that because his Holism is of the crude type. He hasn't had to, as a true Dialectical Materialist scientist would have to do, develop holism into a new Level involving long standing Stabilities, involving multiple processes, systems of processes and self-maintaining super systems that can then act, as if they are independent of context for long periods, but ultimately are, at first, just sorely-threatened, and then defeated by Crises, with an ultimate inevitable Collapse towards Chaos.

In other words, he should have further developed Dialectical materialism, first to explain why Stabilities occur, and then, how the major transformers of such seemingly permanent states - major changes usually termed Emergences, or in Social Organisation - termed Revolutions, can transform things radically!

How can I say this?

It is because I personally have done just that, via my:-

Truly Natural Selection

The Theory of Emergences

The Physical Theory of the Double Slit

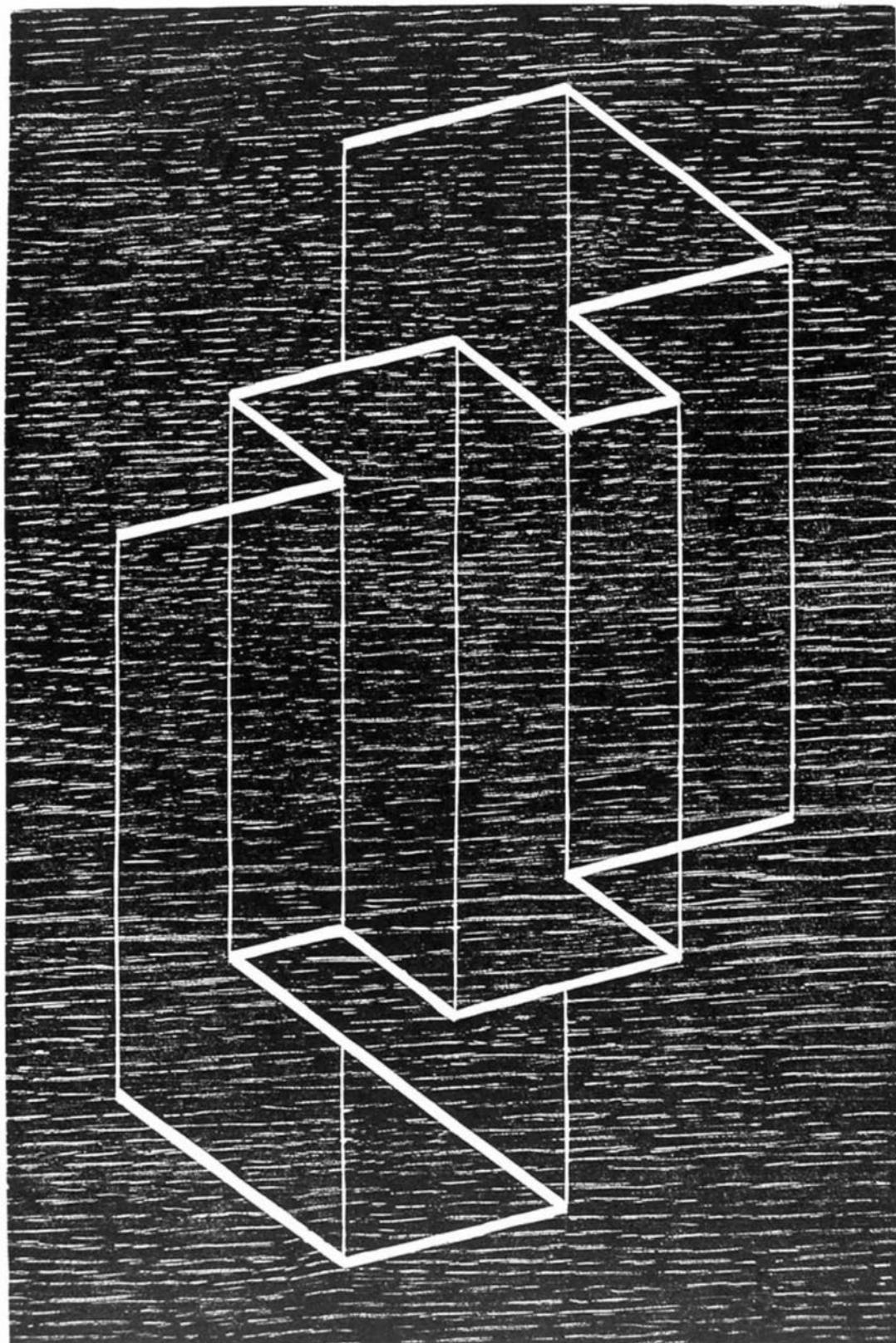
The Theory of a Universal, yet undetectable, Substrate and my demolition of The Copenhagen Interpretation of Quantum Theory via A Physical Explanation of Quantized Orbita

An Explanation of Energy Propagation though “Empty Space”

An Explanation of so-called Quantum Entanglement and Pair Creation and Pair Dissociation

That is what a real dialectical materialist *scientist* can do!

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Hans Giger, 1924

Alberto Giacometti

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