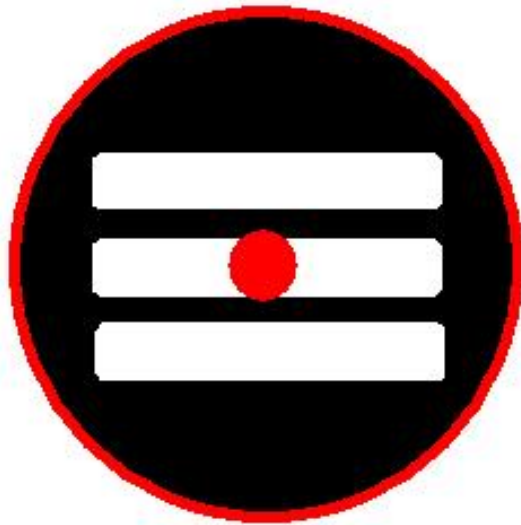


THE METAPHYSICS OF 'DARK MATTER'



'DARK MATTER' AS AN OCCULT THREAT TO
THE FOUNDATIONS OF PHYSICAL SCIENCE

Acharya Peter Wilberg

2009

THE METAPHYSICS OF 'DARK MATTER'

'DARK MATTER' AS AN OCCULT THREAT TO THE FOUNDATIONS OF PHYSICAL SCIENCE

1. THE MYTH OF 'MATTER-PHYSICS'

As explained in my book entitled *The Science Delusion*, the so-called 'scientific revolution', far from transcending speculation and placing knowledge on a genuinely 'empirical' did quite the opposite - treating its own abstract mental and mathematical *concepts* of reality as more 'real' than the tangibly experienced empirical phenomena they were supposed to 'explain'. Thus, as Husserl argued in his ground-breaking work on *The Crisis in the European Sciences* the idea that natural science is 'materialist' or 'empirical' is a myth. Instead what is taken as 'natural' or 'physical' science substitutes "...a world of idealities for the only real world, the one that is actually given through perception, that is ever experienced and experienceable – our everyday lifeworld".

Husserl here follows in the footsteps of Bishop George Berkeley, who first saw through the myth that science offers us a 'harder' or more 'solid' account than religion of our actual sensory experience of phenomena. Which is why Heidegger insisted that: "Phenomenology is more of a science than natural science is." For 'phenomenology' is that approach to science which explores our direct subjective experience of phenomena, whilst at the same 'bracketing' all our mental concepts of it - and recognising them as just that, mental

concepts. This applies above all to the very concept of 'matter' itself - whether visible matter or 'dark matter'. For whilst we subjectively experience the sensory qualities of so-called 'material' phenomena – qualities such as heaviness or lightness, hardness and softness, shape and texture, colour and sound - we never experience or perceive 'matter' as such – as an object or substance. Instead as Samuel Avery argues:

“We experience visual and tactile perceptions that suggest a material substance existing independently, but its acceptance as ultimately real is an act of faith.”

Samuel Avery *The Dimensional Structure of Consciousness*

The still-enduring myth that physical science is in any way 'materialistic' is rooted in the myth of some sort of physical or material 'substance'. In contrast, from an everyday 'phenomenological' or experiential perspective - a truly 'empirical' perspective:

“The concept of material substance ... is derived from potential perceptions in each sensory realm.” (Avery).

In particular, we come to think of object as 'material' only because we do not just perceive them visually but also as something we can potentially touch, hold and pick up and generally come to sense in a tactile way. What we think of as 'matter' is real therefore, only in the root sense of the word - being the 'mother' or 'matrix' [mater] of all things - a 'womb' of potential dimensions of sensory experiencing - of which the tactile dimension is crucial for our perception of things as 'material'.

The understanding of matter as something inherently connected not with the purely visible or measurable but with an invisible realm or womb of potentiality was long accepted by philosophers and theologians alike. Thus Aristotle defined matter (Greek *hylē*) as potentiality and its form (*morphe*) as actuality. Similarly, Thomas Aquinas understand 'primary matter' (*Prima Materia*) as nothing actual or 'substantial' but as pure potentiality - a type of formless and 'passive potentiality' inseparable from God as 'active potentiality'. This ancient understanding of the essence of 'matter' as such - as something belonging to the realm of the potential rather than the actual - and thus innately invisible and immeasurable - is now echoed in the defining characteristics of what modern physics calls 'dark matter' - a concept which treats it as mere mysterious and invisible sub-species of actual, visible matter.

What we must first of all recognise in approaching 'the metaphysics of dark matter' is that it is essentially a metaphysical or 'matter-physical' construct needed to account for anomalies in current physics. The paradox is that this new construct of 'dark' matter simply re-interprets what was in earlier times was understood as the metaphysical essence of matter *as such*. Whence the need for this new construct? The reason lies in a need to maintain the overall *framework* of constructs that currently constitutes physics as such in the face of data which threaten this framework and its essence - the maintenance of a global technological culture in which there are no longer fundamental questions requiring deeper answers - but only 'problems' requiring technical 'solutions' and new technological apparatus.

2. THE FRAME

It was Martin Heidegger who first coined the term *das Gestell* (translated ‘the Frame’, ‘the Enframing’ or ‘the Con-struct’) to name and articulate the hidden essence of technology and of our technological culture. The ordinary German meaning of *Gestell* is some sort of structure, set up or apparatus. By ‘technology’ however, Heidegger did not mean actual technological constructions, apparatus, experimental set ups, instruments or gadgets of the sort that have become so much a part of our culture. Nor did he see technology merely as the ‘application’ of science to the creation of different technologies and their products. Instead he saw technology as the hidden essence of modern science itself.

The German word *Gestell* derives from the verb *stellen* – to set, set up or set upon. One of the forms of this verb is *vorstellen* - meaning to ‘represent’, ‘set before’ or ‘set in front’. *Das Gestell* can thus also be translated as a ‘set up’ or ‘frame up’ that seeks to represent something. What is ‘framed’ by ‘The Frame’ is like a painting, set before us as a structured representation of something – in the same way the theoretical constructs of modern science are set before us as representations (*Vorstellungen*) of fundamental reality.

What such scientific constructs conceal however, is the way in which they themselves are what first frame, define or construct the very idea of whatever it is that science then claims to represent or set before us as some experimentally proven or empirical ‘fact’.

As Heidegger writes:

“Modern science’s way of representing [reality] pursues and entraps nature as a calculable coherence of forces. Modern physics is not experimental physics because it applies [technical] apparatus to the questioning of nature. Rather the reverse is true. Because physics ... already as pure theory, sets nature up to exhibit itself as a coherence of forces calculable in advance, it therefore orders its experiments precisely for the purpose of asking [only] whether and how nature reports itself when set up in this way.”

Martin Heidegger *The Question Concerning Technology*

Thus it is simply not the case that there is first of all something that exists ‘out there’ – an ‘electron’ for example – something which science then happens to have a ready-to-hand term for and ready ways of finding evidence of. Instead the very term ‘electron’ is a representational construct forming part of the overall framework of physics - just as the understanding that physics offers us as to what ‘an electron’ essentially *is* is nothing pre-determined by nature, but is instead defined and 'enframed' by that framework.

3. THE GHOST IN THE MACHINE

Were billions to be spent constructing the most sophisticated and expensive technological apparatus, instruments and installations to detect ghosts, most people would consider this an outrageous waste of money. Yet right now there are technical installations all over the world, designed to detect what are in

effect, no more than ghostly mental constructs invented by scientists to prevent physics from falling apart at the seams.

A current and important example of such constructs is 'dark matter' – an as-yet wholly unexplained source of gravity believed to account for 90 to 99% of the physical universe - yet one needed to 'explain' what it is that stops galaxies from literally flying apart. Together with the concept of 'dark matter' goes the concept of a 'dark energy', supposed to make up 74% of the mass-energy of the universe and uniformly present throughout space. Attempts to identify the nature of dark matter however, postulate in advance its particulate nature. Hence the use of such a massive set up of 'apparatus' (another meaning of Gestell) as the CERN Large Hadron Collider to 'discover' the type of particles that make it up. What however, would such a discovery bring – except the confirmation of a postulate already set up – one which prevents nature itself from revealing itself in any other ways besides those already set up in advance by the limited framework of questions on the basis of which it is experimentally interrogated and challenged to 'answer' for itself?

The 'discovery' of a 'particle' that could explain the 'nature' of dark matter would not 'prove' anything - except the particular way its nature was already pre-conceived in setting up a mode of experimentation based on one or more of the models that form part of the current framework of physics. This does nothing to prove that this framework itself is an accurate 'representation' of reality. For as Heidegger recognised, physics as physics - as a framework of constructs or ways of 'enframing' our picture of reality - *is not itself the object of any possible physical experiment.*

No apparatus or modes of experimental measurement by which a discovery' of the nature of 'dark matter' could come about could 'prove' anything except the capability of specific experimental apparatus and modes of measurement to limit any possible 'results' in terms of constructs that 'fit the frame' of current 'physics' and its theoretical models - which already pre-define what it is to be 'discovered'.

Such a 'revolutionary' discovery, particularly in the form of a 'particle' such as the Higgs boson, far from being a profound scientific 'breakthrough' therefore, would merely permit the addition of one more 'particle' to the current framework of models and constructs that constitute physics - albeit a particle 'proof' which is now desperately needed to prevent this very framework from 'flying apart' in precisely the way that 'dark matter' itself is supposed to prevent galaxies from doing! So it comes as no surprise to read that:

"Former Harvard research scholar, professor Shahriar Afshar said that failure to find the particle would bring current scientific theory tumbling down like a house of cards with nothing to replace it."

Richard Alleyne

According to Afshar himself:

"There will be an all-out war among physicists. It will be a nightmarish situation that will put physics back into the wilderness."

"We need to start having discussions about what are the alternatives. Because if the LHC [Large Hadron Collider] fails, then the Standard Model fails. If the Standard Model fails we have nothing left."

Amidst all the talk about exciting new 'discoveries' on the horizon relating to 'dark matter', there is not even mention of Einstein's viewpoint that 'particles' as such are not 'hard facts' - and that the very concept of the particle has ceased to serve any purpose:

"Since the theory of general relativity implies the representation of physical reality by a continuous field, the concept of particles or material points cannot play a fundamental part..." and that "... it seems to me certain that we must give up the idea of complete localization of the particle in a theoretical model."

As Heidegger recognised, what today goes by the name of 'science', though it derived from philosophy, has now effectively replaced even the most elementary forms of philosophical questioning and thinking, the latter now being seen as 'scientifically' outdated. The problem is that in place of the type of analytic, questioning and critical thinking that once characterised 'philosophy' we now have a type of 'research' whose only possible 'results' are of a sort already pre-defined in advance by the framework of particular 'models' or 'theories'. The theories of science in other words, are judged only according to types of scientific 'evidence' of a sort already framed in advance by those theories and their constructs. Such 'evidence' has no more 'validity' than a box-ticking questionnaire that restricts the one interrogated to choosing from a pre-determined set of answers in response to a pre-determined set of questions – and that according to the pre-determined terms in which the

questions themselves are framed. It is in this way that ‘scientific’ theories and models, together with their supposed ‘research evidence’ effectively replace, block and ultimately substitute for reflective thinking and questioning – closing off any space for a thinking ‘outside the frame’. This would be a thinking bound neither to the theoretical constructs of science nor to questions framed solely in terms of those constructs, but a thinking that is instead capable of questioning those very constructs and the larger framework of accepted constructs in which they are designed to fit and thereby reinforce.

As Heidegger pointed out in his essay on 'Science and Reflection', it has long since been totally forgotten that the Greek word *eidos* – from which the word ‘idea’ derives - originally meant an outwardly perceived face or ‘aspect’ of some thing, and no mere mental ‘idea’ of it. Similarly, the Greek word *theoria* meant beholding and attending closely to the aspects that things ‘present’ to us in immediate awareness – the very opposite, in other words, of any form of ‘re-presentation’ of things in the form of ‘theoretical’ ideas and concepts.

Einstein himself – who has become a veritable icon of ‘the scientist’ - was only too aware that ‘theoretical physics’ was not so much shaped by evidence ‘beheld’ in awareness as by theoretical concepts ‘held’ in the minds of “professional scientists” with little or no awareness of the historical and philosophical background of their concepts and theories - and little or no “philosophical insight” into them:

“So many people today - and even professional scientists - seem to me like somebody who has seen thousands of trees but has never seen a forest. A knowledge of the historic and philosophical background gives that kind of independence from prejudices of his generation

from which most scientists are suffering. This independence created by philosophical insight is - in my opinion - the mark of distinction between a mere artisan or specialist and a real seeker after truth.”

Albert Einstein to Robert A. Thornton, 7 December 1944

“Concepts that have proven useful in ordering things easily achieve such an authority over us that we forget their earthly origins and accept them as unalterable givens. Thus they come to be stamped as 'necessities of thought,' 'a priori givens,' etc. The path of scientific advance is often made impassable for a long time through such errors. For that reason, it is by no means an idle game if we become practiced in analyzing the long common place concepts and exhibiting those circumstances upon which their justification and usefulness depend, how they have grown up, individually, out of the givens of experience. By this means, their all-too-great authority will be broken.”

Albert Einstein 'Ernst Mach.' *Physikalische Zeitschrift* 17 (1916): 101, 102 - *A memorial notice for the philosopher Ernst Mach*

Today the concept of energetic ‘quanta’ has become what could be called the ‘energeticist’ equivalent of the old ‘materialist’ notion of particles – both united by the assumption that reality is composed of discrete entities or units rather than continuous fields. What did Einstein have to say about this?

“All these fifty years of conscious brooding have brought me no nearer to the answer to the question, 'What are light quanta?' Nowadays every Tom, Dick and Harry thinks he knows it, but he is mistaken.”

“The quanta really are a hopeless mess.”

4. LIGHT AND DARKNESS

Nowhere does the *mythical and quasi-religious nature* of what is taken today as 'physics' come to expression more clearly than in attempt to 'unify' 'Quantum Mechanics' with Einstein's theories of Relativity. Quantum Mechanics has to do with the nature of electromagnetic forces – that is to say, of light in the form of 'photons' or 'quanta' of energy. Relativity on the other hand has to do with the nature of light in relation to space and gravity. 'Gravity' however, is not just as a force wholly distinct to electromagnetism but – not least in its now most problematic form, that of so-called 'dark matter' – now appears as a 'dark' and mysterious counter-pole to light itself. Recognising this, we can begin to see that all the abstract and arcane terminologies, mathematical theories and competing theoretical frameworks of modern physics are but a modern echo of *age-old religious mythologies of a universe created from primordial forces of Light and Darkness*. Needing as it does to 'scientifically' explain their relation through a single 'Unified Field Theory' or 'Theory of Everything', the quest for such a Theory is now the most important *theological* challenge facing physics in its attempt to shed 'light' on the fundamental nature of reality - for all its attempts to do so are now threatened by the mystery of 'dark' matter.

Light has long been a primordial religious metaphor of 'spirit' – hence such phrases such as 'en-lightenment', 'illumination' etc. Yet only in Indian religious and philosophical thought arose the decisive recognition that physical light - the light of suns, stars and galaxies – would not itself be anything visible or measurable without an awareness of it. Hence arose a concept of the essence of light as awareness itself – not an awareness that is the mere 'property' or 'emanation' of divine beings or cosmic bodies, material particles or quanta of

energy - but a universal awareness - one of which all things and all beings are ultimately composed - and through which alone all 'actual' phenomena can first 'come to light' - from within the 'gravitational' density and 'darkness' of infinite, hidden potentialities of actualisation and manifestation. Thus it is that in that grand synthesis of Indian metaphysical and religious thought forged in 10th century Kashmir by great religious metaphysical thinkers such as Abhinavagupta and Kshemaraja we already find a more foundational and fundamental understanding of both space and light than any that can be found in modern physics - one which understands them not as dimensions of an 'objective' universe of 'matter' or 'energy', but rather as dimensions of an essentially *subjective universe* – a universe born of subjectivity or awareness as such in its universal, all-pervasive and 'field' character:

“The being of all things that are recognised in awareness in turn depends on awareness.”

“... space is inherent in the soul as true subjectivity which is at once empty of objects and which also provides a place in which objects may be known.”

Sri Abhinavagupta

“Every appearance owes its existence to the light of awareness.
Nothing can have its own being without the light of awareness.”

Kshemaraja

Space as such, in other words, is nothing essentially physical but rather a universal and continuous field of *awareness* in which all phenomena can first 'come to light' from a 'dark' realm of unbounded potentialities. Light too, is nothing essentially physical but rather metaphysical - physical light being an expression of the metaphysical *light of awareness* in which all things first 'come to light', come to be or emerge into being (to 'bring to light' being the root meaning of the Greek verb *phainesthai* from which the very word 'phenomenon' derives, and 'to emerge' being the root meaning of the Greek verb *phuein*, from which the very term 'physics' derives). Light, including the light of suns, stars and galaxies, is something that 'comes to light' only *in the light* of an awareness of it. The light that we see around us is in turn nothing but a manifestation of that transcendent-metaphysical light of that awareness.

5. THE AWARENESS PRINCIPLE

Not only does physics, as – supposedly - the most 'fundamental' of all the sciences, fail to explain the 'hard facts' of our everyday subjective experience of phenomena such as light, it fails above all to recognise the most fundamental or 'hardest' scientific 'fact' of all – which is not the 'objective' existence of a universe of matter, energy, space and time, light and gravity – but rather a subjectively experienced awareness of such a universe. In this sense, modern science is no more based on 'hard fact' than religious 'mythologies' of light and darkness.

The problem for current science is that *awareness* cannot - in *principle* – be the *product or property* of any thing or phenomenon we are aware of.

This simple logical principle means that awareness alone - and not any form physical matter, energy, space or time, must itself be the sole and absolute reality behind all things – and thus also the sole possible basis for a ‘Theory of Everything’.

A new and true concept of science must therefore be founded on a new fundamental principle - what I term ‘The Awareness Principle’.

This Principle recognises (1) that *awareness is everything* and (2) that everything in turn *is an awareness* – a individualised portion and expression of the a universal awareness field and no mere 'object' of individual consciousness.

The hard fact that current physics has yet to confront is that the only possible ‘Unified Field Theory’ is a Unified Field Theory of Awareness – of ‘subjectivity’. Yet acknowledging this fact challenges the most fundamental of all the unquestioned religious dogmas of modern science - indeed its 'sacred cow'. This is the dogma that ‘truth’ is ‘objectivity’ and that knowledge is by definition knowledge of ‘objects’ on the part of isolated ‘observers’ or ‘subjects’ - subjects who happen to have mysteriously and inexplicably ‘evolved’ subjective awareness or ‘consciousness’ from out of an otherwise wholly insentient and unaware universe of 'objective' space, time, ‘matter’ and ‘energy’. What I call ‘The Science Delusion’ is the delusion of an ‘objective science’ which stands in the way of a new model of science - as *subjective science*. Subjective Science is also ‘Qualitative Science’ - for its subject matter is our everyday subjective experience of tangible, sensory qualities. I call it *Cosmic Qualia Science*. It constitutes a ‘Second Scientific Revolution’ - restoring science

to its empirical roots in our direct subjective and *qualitative* experience of phenomena. The term ‘qualia’ is conventionally used only to describe our experience of the outer sensory qualities of things. Such sensory qualities however, are in essence the outward manifestation of innate ‘psychical’ qualities of subjectivity or awareness as such. This distinction is crucial. For whilst a feeling of physical warmth is clearly a ‘physical’ or sensory quality what we experience as ‘warmth of feeling’ is a psychical quality or ‘soul quality’.

Light, from this point of view, is essentially a manifestation of the light of awareness. Similarly, outwardly perceived colours are expressions of felt ‘colourations of awareness’ – comparable to differently coloured subjective moods. A qualitative, subjective-scientific understanding of light and darkness offers a quite different route to the understanding of ‘dark matter’ and of ‘gravity’ itself – the latter being nothing but a density of as-yet unmanifest qualities and qualitative intensities of awareness.

Awareness, like light, is first of all an awareness of *potentiality* - of what could potentially 'come to light' as an actual phenomenon from within a 'dark' realm of potentialities *of* awareness. Yet if what physical science seeks to 'bring to light' is already pre-defined in terms of metaphors deriving from the realm of *actual* rather than potential phenomena (for example the metaphor of electromagnetic or gravitational 'waves') it will forever leave us 'in the dark' - not least in relation to 'dark matter'. In contrast, and as argued in the introduction to this essay, Subjective Science offers us an old-new concept not just of 'dark matter' but of matter itself, understood as something essentially 'dark'. That is because the idea of material 'substance' is a construct created from our experience of potential dimensions of everyday sensory experiencing

- in particular the sensed potential to experience things in a tactile as well as visual way (for example as possessing qualities of hardness and softness, weight and lightness etc.)

Thus the fact that the blind can sense things in space even without seeing them as visible, light-reflecting or light-radiating objects does not mean that what they are sensing is 'dark matter' in the new cosmological sense. Rather it confirms, as argued at the start of this essay, that visibility is not the fundamental criterion defining the essence of matter, and that so-called 'dark matter', far from being a mysterious sub-species of matter belongs to the hidden essence of matter as such, an essence that will remain forever hidden - 'occult' - to a purely objectivist and 'matter-physical' approach to science, as opposed to a subjectivist and metaphysical one.

That is why the term 'dark matter' essentially names what physicists themselves recognise as a dark and 'occult' threat to the *hidden metaphysical framework* of 'physical' science as a whole, a framework of constructs and dogmatic assumptions to which this 'science' is blind, and yet one to which it still stubbornly, blindly and religiously clings. For as Heidegger noted: "Science *is* the new religion."