

When Matter takes on Meaning

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Philip Franses

Introduction

The openness of inquiry in the writing of *Time, Light and the Dice of Creation* and the consequent exploration with Mike Wride of Trinity College, Dublin, while teaching complexity together at Schumacher College, uncovered a different emphasis of journeying, which was coined for this gathering as *When matter takes on meaning*. By leaving open the conclusion which the understanding of science gives us, a meaning is lived between us. A group of twenty people working at the boundary of *matter* and *meaning* were invited to explore in this openness of encounter.

Matter relates to a routine, where we are defined from outside, a thing that people push around, adhering to labels of who we are. *Meaning* describes a moment where everything comes together, where life presents us with something totally new and whole which we can commit to, that changes the direction of our life, a rebirth into what is possible.

As current experiments such as those at the Large Hadron Collider at Cern and University College London's *weak measurement* investigation, seek to penetrate into the heart of matter, a background story is emerging into the parallel journey of the expression of meaning. Are we with our knowledge and science at a crossroads of how we integrate our understanding of matter into a wider question of meaning? To make this journey we travel the hub and the rim, between matter and meaning.

Initiating

A mix of voices, speaking our separate articulations of ambition for the day... what brings us together... the room, neat and contained amongst the shelves of books lining the walls? ...an inviting title *When Matter takes on Meaning*, open enough to entice a wide cross-section of people? .. a varied longing in people, that happens to come together in this particular event?

The event is designed (or not designed) to leave the ground on which we meet as enigma to the possibility of where we might arrive. This liminal state is heightened for me by the delay to my train which means I arrive three minutes before the start time of two pm, with first arrivals already wandering around outside looking for the entrance. At the beginning there is awkwardness, as young feminine enthusiasm shares space with older masculine energy on the side of learning. There is a learning in conversations how these elements not used to sharing a room, might accommodate each other.

Modern physics seems to reflect this challenge. Particles stand uncomfortably in the same definition for something as waves, background landscapes suddenly have to serve as foreground actor, unity and division are necessary complements in any description. The concepts of physics seem like us, to be brought together with different propensities, but unsure how to present themselves as a unified vision or expression.

Double slit

Basil Hiley has taken the mathematics of distinction developed by Spencer Brown and has shown how this alternative logic underpins relativity and quantum theory (Hiley, 2011). Professor Basil Hiley shows some of the weird consequences of the double slit experiment, where the particle as

foreground actor travelling through two slits, exhibits a wave like interference outcome at the screen, inexplicably possessing information of the background landscape.

The initial interpretation of these experiments by Niels Bohr stayed with the old language of classical physics. It explained the experiment by a mathematics that could render the background landscape as a probabilistic influence on foreground measurement outcomes. David Bohm and Hiley had argued a different interpretation, which took the background landscape as an information field, the quantum potential field.

The inability to probe the small particle domain, as no particle is available to interact with the system without disturbing it, had until recently hidden any decisive test. However experiments being carried out now with very weak interactions (as Hiley is involved in at University College London) see the particle as present, bent in its trajectory by this background guiding influence, the quantum potential field. These *weak measurement* experiments suggest that there exists a reality to the quantum realm. They reopen an argument alive for over a hundred years!

The hub and the rim

In the 1920's Bohr developed an approach to quantum theory known as the Copenhagen Interpretation, implying that the domain of elementary particle physics was purely accessible through philosophy and mathematics. The nuances of the background arguments are concisely stated by Arthur Fine.

'Bohr thus views the product of conceptual refinement as a wheel-like structure: a central hub from which a number of disjoint spokes extend. Different explorers can move out separately along different spokes, but, according to Bohr, the reports they send back will not enable one to piece together an account of some region between the spokes or of a rim that connects them.' (*Fine, p.21*)

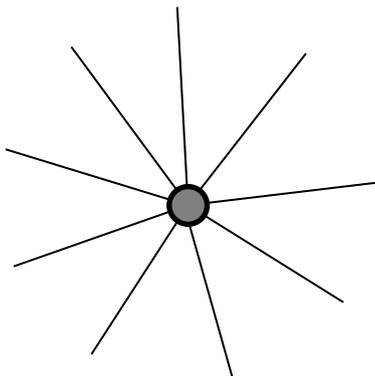


Fig. 1 Bohr sees a number of separate spokes emanating from the hub. There is no moving reality here, just a meaningless landscape that philosophy and mathematics is able to navigate sufficiently to give a basis of elemental understanding.

Bohr's perspective looks, according to Fine, like the steering wheel of a ship that keeps us in control of the world through the old classical concepts of physics. Fine continues...

‘Einstein’s dispute with Bohr (and others) is a dispute over this wheel-like structure. Einstein asks whether the spokes must really be disconnected, could there not at least be a rim? This is the question as to whether the quantum theory allows for a realist interpretation. ..And Einstein asks whether the spokes must really be made of the same material as the hub? Must we, that is, stick with just the classical concepts?’ (*Fine, p.21*)

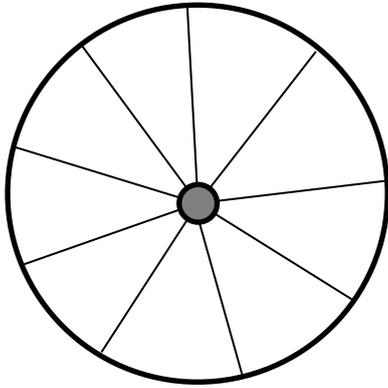


Fig. 2 Einstein wants there to be a rim. A rim immediately adds the possibility of movement. Only through the rim of whole meaning does the wheel turn. Yet the wheel needs the fixity of the hub and the spokes to hold the motion to its own unity.

The *weak measurement* experiments suggest that there is a particle present and so the rim of a whole reality does exist. The experiments reopen the debate about the nature of the quantum realm and how to understand it. Henri Bortoft, (whose wife Jacki was present at this event) worked on his PhD with Bohm and Hiley in the early years, before taking a different trajectory.

Bortoft’s view was that the rim could not be understood except by participation. It was not so much that one had to tinker with the conceptual parameters of physics, as there was a wholly different ground relaying meaning through existence. This required a reversal of the usual way of seeing the world, into the appearing of meaning.

‘[In taking meaning as finished meaning], we have begun with what is already a finished product, which has to somehow be recovered or reproduced in the mind of the reader for it to be understood. The alternative here is to reverse the direction of attention, which is drawn naturally to the end product, by stepping back into the *event* of understanding. The effect of this is that meaning emerges in the *happening* of understanding, instead of being present as a finished object *before* it was understood by the reader.’(Bortoft, p.94)

In our gathering at the break, there is much agitation, at these two stories that seem to compete in the room, about the attempt to put back the meaning of the world through the theories and concepts of science, on the one hand and the direct learning of experience, as it is lived on the other. After the break we address this agitation, through putting these two understandings alongside. The words holding the tension of the separation of science and spirit in the room, naturally allow the resolution, or flow of unity, to enter in. *One* is an existential completion that defines the opposition of the initial propositions, by depicting an arrival at unity that gives sense to the journeys of the starting elements into meaning. When one speaks right, the *one* is as it were present from the

outset of what one was trying to say, and is responsible for the pattern of illumination. This Bortoft described as the seeing of what is seen. The *one* is found to necessarily accompany the ordering of parts into their appearing, as meaning.

Language

Through the turning of meaning about its own cycle, we are moved by language. The inexactness of language, which from the perspective of modern science is a decisive limitation that prevents us from seeing reality, is **exactly** what makes language so good at finding new and unexpected meanings.

‘Another way we see this cycle of meaning is in language. On the one hand, language is a precise structure of words and grammar that every student has to learn. But if that was all there was to language, speaking would be very tedious. Around this hub of structure, language is also the moving rim of the making of meaning.’ (Franses, p.187)

‘Language is exactly the metaphor we need to describe the rim of the making of word-conceptual meaning. Language is adept at travelling around the rim of inexactness, allowing the concepts of words to form as appropriate to the meaning of their whole cycle. The looseness of the atomic structure is to allow many possible conceptual forms to be spoken together into a viable meaning. The language of living form that we see about us, all follows from the lucidity in which the paradoxical cycle turns a whole meaning about the hub of a conceptual centre.’ (Franses, p.189)

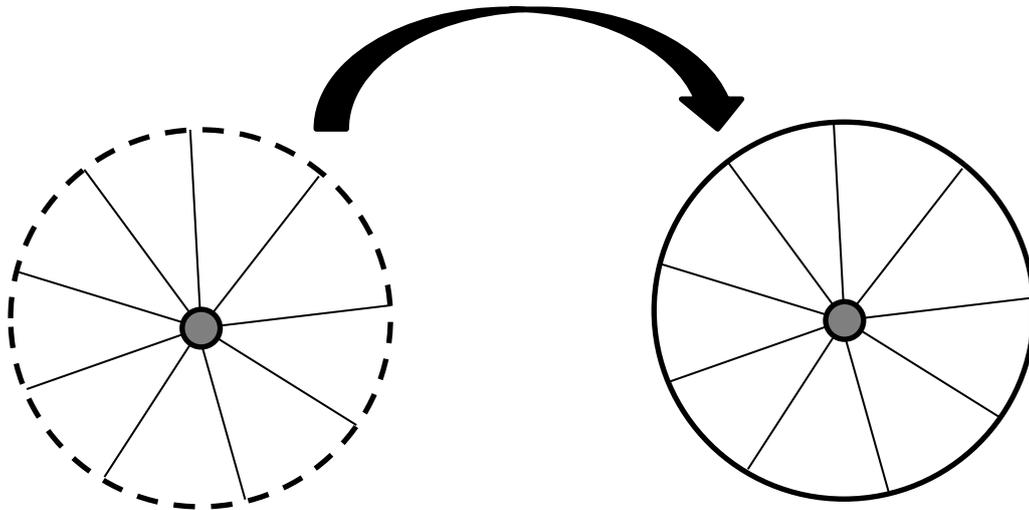


Fig. 3 The ensemble turns about its own energy. Something transforms the space of understanding to a new orientation of meaning within structure, spirit within science.

One ground

We work at finding, in the encounter with our opposite, that magical moment in which all difference falls away and suddenly there comes into view an experience of that which grounds us all in a renewed understanding of our journey. The moment of complete stillness where everyone is joined together in an unspoken consensus of meaning, is the knowing of the *one*, in the legitimacy of a felt movement.

The journey into meaning has as a goal, the discovery of the *one*. In the example of a riddle, the explosive energy of understanding is released only at the end in which a passive puzzlement of many strands are related by the surprise appearance of *one*. In the moment of illumination, that which was darkly separated is given an order to communicate the universal energy of meaning.

The energy of language arises only at that unforeseen moment in which previously disconnected explorations suddenly find the ground to common saying of what they are about. When in *Time, Light and the Dice of Creation*, I do not resolve the journey of science into an end theory, mine or anyone else's, then in some peculiar way, my own meaning plays within a larger context of the becoming of understanding about who I am.

There is a choice in how we interpret *When Matter takes on Meaning*. If we take matter as the foundation of things, and at every moment we interpret the world in our vision of what is there, then we see a stilled world of things. However, if we suspend our judgment about the tensions in the fundamental basis of matter, as between unity and division within the quantum theory of the atom, then existence is decided by the journey to meaning. We see the world, at the end of all its tensions directly mediated by the journey of individual discovery.

The hub and the rim analogy show how these two perspectives relate. The rim is the natural propensity of existence, for stories to tell themselves in their whole conclusion, when leaving open the identity of the centre. The hub is that centre of exact knowing where we label the structure as already apparent. (Bortoft uses the language "upstream" and "downstream".) The spokes are then the different perspectives (in quantum theory, position or momentum, wave or particle) that take one from the hub to the rim. When one stays with the structural lens alone, however, nothing turns. To travel in meaning requires a different attitude, one of paradox, a viewpoint of science developed in *Time, Light and the Dice of Creation*, where each chapter is such an open tension, explored in its openness. When one develops this other type of attitude, then the rim and the hub becomes a wheel-like construction that turns about actual meaning.

The world appears to us as in its final act, where all the strands of what has happened wait to be told by a movement that gives us reason in the revelation of who we are.

There is a necessary inversion in the act of us reflecting on the world. When we try to capture the essence of things at their source, then science is flipped into a babble of many tongues. When we leave my relation to the world open, then this inversion turns the paradoxical tension into a statement of revealed meaning. Rather than trying to add meaning to the matter seen as fundamental, meaning interprets the world through its own process.

The *one* underpins the mathematics of how the possibilities fulfil themselves in a whole picture. The 1 that the Schrodinger wave function needs to define comparable probabilities, cannot be taken for granted. Schrodinger's cat is a paradox only when we focus on life as something fixed. The cat acts, knowing that his life is at the same time death, where the unexpected unity gives existence its particular tangy quality. The mathematics of probabilities, which seems so impossible to fathom, when stilled for experiment, is nothing but the natural quality of the wheel allowing movement to speak the world in its turning. When probabilities hear 1, they do not fall asleep at the predictable nature of mathematics, but are moved at the audacity of the unity daring to hold such paradoxical opposites into the action of life.

The *one*, or 1, has to be lived, in the struggle of the parts to know their contextual unity. Only then do the probabilities apply to the world as a pattern of discovery, predicated on the participation of 1. A journey travels around, back to its beginning, to know the contextual reality of the *one* that holds everything together, the rim of meaning.

In that breath of life, distinction is not a description of matter, on which everything else is built, but a holding of the tensions of diversity on which meaning can surprise.

Nucleus

In a static structure, the nucleus is the command and control HQ that somehow in the atom or the cell, has acquired the wherewithal to order the structure of matter and form. We could argue that power and control are evolutionary characteristics arising by chance, to give the centre this authority over the periphery. So we are justified in applying this to nuclear families, central Governments and CEO-led businesses as the natural structure of organisation.

When we allow the one its own freedom to fashion the process of speaking, then the nucleus of the hub, becomes something dynamic that holds the wheel to a memory of its particular trajectory. The nucleus travels the journey of the wheel, to reflect on what persists as the identity through the motion. The nucleus is the natural intelligence that holds the persistence of identity through the becoming of the journey of self-realisation.

The dynamic nucleus thus sustains a completely different peripheral activity, quite distinct from the material experience of the hub. Surrender of individual force, persuasion and control gives access to this collective journey in the life of meaning. Moreover it is the nature of all life, to have access to this periphery of far possibility, around the nucleus of gathered meaning.

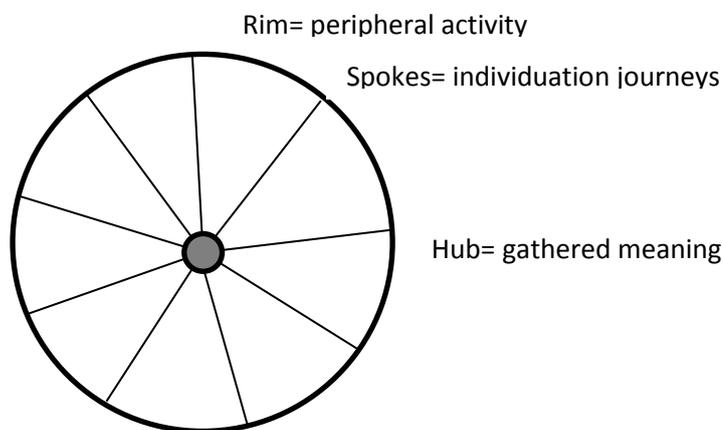


Fig. 4 Our view of the hub and the rim inverts. It is now the far imagination of possibility that gathers itself together into the nucleus that is the distilled wisdom of all journeys.

There is a core to experience. This does not try to set itself above others, in superiority of understanding or actions. It learns from movement, the natural part of identity that holds the secret of faithfulness within transformation.

Time, Light and the Dice of Creation, of which this event is an introduction, speaks of the actuality of becoming, giving mathematics and mysticism a common meaning, the pattern by which parts lean together into the dance of the becoming of *one*.

Further reading

www.journeyschool.org.

References

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