

Light through the Past-Future Window

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Introduction

A good starting point for this journey is process, which as well as being a template for the categorisation of the world is transparent to the illumination of whole inquiry.

Process is conceived mathematically as a two-fold distinction made in wholeness. An example used by Basil Hiley is how thought is a process rather than a linear causal relationship. A new thought arises from an old thought as a development of the old in the continuity of the new. The new develops from the old without thereby making the starting point redundant: one needs the foundation of an idea to arrive at the completion of a thought. Basil Hiley following on the work of David Bohm has created a mathematics of process, where the present instead of developing by overwriting the past, is inclusive of its future state in its past origin.

Basil has played back the development of all categorisations that have together shaped the foundation of the modern mindset of separation/ analysis and has reached back to a single cut or division that is as it were the primary process. This original distinction he characterises as breaking the symmetry of wholeness into information from the past and information from the future. Once Basil has made this incision, this distinction of wholeness, then he is able to expand this self-statement about wholeness into all areas of modern physics, space time relativity, quantum formulations as a necessary corollary.

Information coming from past $|>$  $<|$ information coming from future

Fig. 1 breaking the symmetry of wholeness by distinction

In process the ground of phenomena precedes even the framework of space and time and the foundation of physics in relativity and quantum theory. The simple formulation of information from the past: information from the future; breaking the symmetry of wholeness opens the door to the pre-algebra of process on which the standard expression of how physics operates follows recognisably.

It seems that this cut into wholeness has occurred too rigidly and it is our endeavour in Process and Pilgrimage, to introduce a lighter way of working with process. The reason for joining Process and Pilgrimage is that in both one sets out on a journey with no idea of the destination and that it is the meeting of wholeness en route that gives the journey its identity. A pilgrimage starts at a point of transition, beginning in darkness seeking reconnection, to end in the light of a new self-knowledge and association to Oneness. So the past and the future lightly touch upon the wholeness that redirects the pilgrim how to live forward from his foundations of origin.

While this journeying through wholeness has been at the source of the debate of modern physics, it has remained hidden behind the primary requirement of working with the known, so the travelling through unknowing has been seen as secondary.

Lens of experience

In the last fifty years, complexity theory and information theory have combined to give an alternative foundation to formative phenomena, based on potential and coherence. Information describes a redundancy in potential that in the mathematics of complexity theory is able to resolve coherently to a whole attractor bounding different possible local trajectories.

It is in the suspension of causality that information resides. Where there is only one causal path universally determined, there is no room in the phenomena for additional information. It is the redundancy of potential paths at the micro-level that allows for additional properties to characterise the whole nature at the macro-level. Thus it requires questioning of an existence to uncover its

essential properties, whether this is going deeper into a person's true character or really observing a flower in its delicate composition. No information is apparent at the surface of causal-sufficiency.

Science continues to see information as pools of multiple-possibility residing within an essentially causal landscape of concepts and laws. Information in our view extending this analogy might be more akin to the sea, in primary formative relation to the land of causality.

The distinction information from the past, information from the future is a transparency that allows the whole to be encapsulated mathematically. Once this categorisation has been made, it can be expanded and formalised into space time, while keeping the window of process on something dynamic, without fixing phenomena into occupying an exclusive present. The interrelationship future: present: past is available as a total area of influence, not made abstract into a point of the present.

A methodological problem arises when the fluid window given on wholeness is concretised into a formal separation of <past> <future>. The distinction past: future used to open up wholeness is also a categorisation by which the resulting space time framework is then explored.

The fact that the world made transparent by the cut past: future has then been analysed through the same tool hides from view the role wholeness plays. This means that in much analytical work, the origin of the wholeness which past: future brought into distinction is lost.

One example of this is light. Light is seen as an absolute existence which can be described by Maxwell's equations as wave or by Feynmanⁱ as particle. One can look up what light is for there is nothing more to light than its abstract knowledge. Indeed it is used in relativity as a way of distinguishing past from future since light is necessary for the synchronisation of the present.

Goethe on the other hand demonstrated that when one goes into the phenomena of looking at the world of colour through a prism, then dark and light are experienced as a distinction within wholeness.

'For Goethe darkness is not the completely powerless absence of light. It is something active. It confronts the light and enters with it into a mutual interaction. Modern natural science sees darkness as a complete nothingness. According to this view, the light which streams into a dark space has no resistance from the darkness to overcome. Goethe pictures to himself that light and darkness relate to each other like the north and south pole of a magnet.'ⁱⁱ

Dark and light in polarity are available as an alternative distinction by which the world can be explored while keeping intact the window past: future of process.

Goethe sets out a more general methodology based on a science of participation in the phenomena where light marks the moment of becoming one with the knowing of deeper nature (see Henri Bortoft *The Wholeness of Nature*ⁱⁱⁱ). Chris Clarke, in asking the question at our last forum, 'Is the Universe in a state of pilgrimage?'^{iv} suggests that participation is demanded in any act of knowing.

Once one uses a different lens, in this case the active polarity of dark-light then a different filter of distinction brings the world into focus. In particular the polarity dark-light, instead of separating wholeness as past: future, articulates wholeness through the journey between the two poles. The world opens up to a transparency, in which categorisation of past: future is fluid to the wholeness from which it originates.

A more flexible way

The requirement is then that wholeness arises during the process of division of information from the past and information from the future. Instead of wholeness being imported from outside and then breaking down under analysis, the journey from past to future travels to realise wholeness. Instead of prescribing a strict interpretation of past and future, we associate the start of the process with darkness, without prescription of wholeness, and the end point of process with light, or the complete integration of wholeness. The process is then a provisional journey, without guarantee that it will complete, and with no fixity in its definition. It has the quality of an informational potential, in that

the description contains a great redundancy in it as to if and how it might happen. It belongs in our earlier metaphor with the sea, where everything is in flux.

It has the advantage of associating wholeness with a journey of process itself so that instead of seeing order being born out of some abstract unity, wholeness of being is given birth to in the journey from dark to light, an act of experience. Thus every living thing has its dark-light journey which asks the question of its being to the world with no surety of an answer.

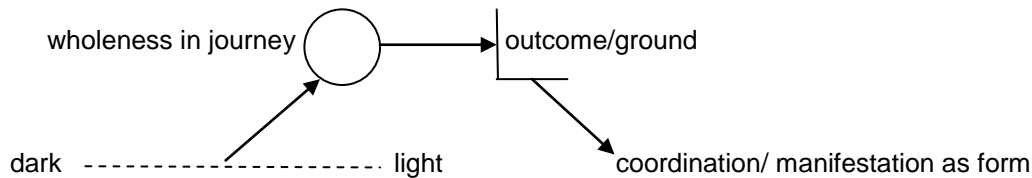


Fig. 2 The dotted line of the sea gives birth to wholeness in a journey that is then mediated into the land of order

To translate these journeys into order, a new mediation is needed of seeing, that focuses the whole journey into dimensions where experience can be directed upon a finite field of realisation and incorporated into the world of causal form. This is done in the conditional status of the individual at the journey's arrival, which is marked by light, articulating the appearance of wholeness in dimensions of outcome and ground. These dimensions of outcome and ground translate the taking of the hero's journey and its realisation into a framework for a common interaction and collective assertion of arrival.

The dimensions of {ground, outcome} have a journey through wholeness in between, that is by definition completed in the realisation of light. Just as with space time, the connection between ground and outcome is given by light. Instead of being a transparent medium to describe phenomena neutrally, the framework holds the local articulation of wholeness manifested through the journey.

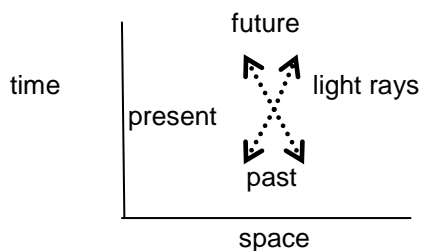


Fig. 3a Light as mark of the distinction of past and future

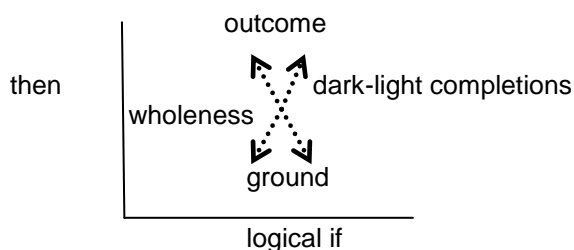


Fig. 3b Light as mark of the completion of the journey into wholeness applied as ground for others

Since this transformation takes place at the completion of the journey where wholeness is realised, light orientates how the frameworks of realisation translate and communicate with each other. However this light is of a totally different nature than say how it is used in classical relativity to synchronise participation. Where classically light is the neutral origin, by which phenomena measure themselves, here light is that full moment of the realisation of phenomena at the end of their journey into wholeness.

The frameworks of translation of these journeys, into ground and outcome, are operative as both the order that precedes all journeys and the result that represents their sympathetic completion. The order that is realised by each journey's affirmation is a ground for all, as well as an outcome including every possible eventuality of other journeys, (since wholeness is realised as the gain of the journey).

The ambition of order, in drawing together journeys into dimensions of ground and outcome, is to synchronise the journeys so that wholeness sounds singly through all these different paths, from a starting point that is without assumption beyond its own journey. The translations of journeys realising wholeness must sound through the synchronisation that makes transparent separate journeys into a single resonance.

Orders of life

Is this cooperative inter-threading of being as wholeness consistent with what we know of process realising space-time as ground? Can wholeness move from an abstract motivation to an element of being that enfolds within itself a further separation as ground for other being? Can wholeness become as a mean, perfectly proportioning levels of order in their relation, which in turn fosters a coherent multi-scale of expression of whole meaning?

Can the familiar elements that hold the world: atom, cell, organism differentiate into past and future aspiration to found a wholeness that is more than their own order? Just as we find temporal order of oscillations in the cell synchronising its place in the whole organisation that develops beyond itself, so elements are integrated in the dynamic wholeness that they found and calls them in their future being.

Temporal oscillations that frequent the activity of cells^v show the basic movement of organisation in and out of structure, merging its past into wholeness without boundary to emerge with a message of the qualitative steering from the future. This manner of organisation works at the boundary where choice concentrates to seek a new resolution, as bacteria reacting to food stress to form a composite colony. This transparency, where wholeness is applied dynamically to individuals that can return from their whole organisation back to individual existence, leads onto the question of form more generally.

Wholeness and form

Quantum theory successfully furnishes a theory where the sea of potential is incorporated implicitly in the description of journey between ports. It allows us to understand potential, as a dark crossing in which no measurement is possible, as an influence upon the arrival and departure of vessels on the land, the illuminations of objects in their knowable properties.

Despite being one of the most successful theory in terms of calculation, there is a severe drawback. The concepts of position and momentum of the independent particle (defined through its past separation) are maintained even though there is a whole inclusivity in possibilities that prevents abstraction into a single behaviour of the individual independent of the whole system. David Bohm seeks to go beyond this contradiction by including wholeness as an operative agency in how the system develops.

It is here that the notion of process and the active division of wholeness into information from the past and information from the future emerges.

Bohm and Hiley^{vi} re-formulate the classical quantum equation through the 'Quantum potential field', a global prescriptive influence upon the behaviour of particles. The particles are guided by a field that allows the freedom of their properties to converge upon an outcome with a composite answer to their individual questions of being. Basil Hiley has recently explained this:

'We found that the potential was totally different from any classical potential that we know. It has no external source in the sense that the electric field has its source in a distribution of charges. It does not act mechanically on the system. In this sense it cannot be thought to act like an efficient cause. It is more like a formative cause that shapes the development of the

process. Indeed as we explored its properties in many different physical systems it reminded me very much of the morphogenetic field generated in biological systems.

The information field is shaped by the environment in a way that is very similar to the way the development of a plant is shaped by its environment. Thus we can think of the information as active from within giving shape to the whole process and this shape depends on the environment in key ways. In other words the meaning in the wave is expressed through the form that develops.^{vii}

Just as Bohr and Heisenberg succeed in entraining the possibility aspect of information into a causal (at least at statistical level) quantum law, so Bohm and Hiley suspend causality for the entrance of an informational field that steers free flowing potential. Importantly instead of understanding potential from its effect on causal concepts, a dynamic formative influence is depicted. From the perspective of latent potential, it is now form that creatively arises to substantiate existence in a greater pattern.

Active information, instead of passively persisting into the potential of the future, is the active face of the future informing a latency of choice in the present.

The individual element gives up its secured boundary around self, to ask the question of its freedom out into the world of possibility: either the question will fall on indifference, or it will cohere with others in providing a whole viable outcome. The element leaves its fate to the discretion of the future's relation to the present. The focus changes from being retained in the causal continuity of the element itself, to being left open for the future outcome to cohere the participative inquiry into form.

Active information is a pre-notion of some calling towards the collective whole, a transparency of the individual in the acting out of the whole.

Taken together the two approaches show that the dynamic between element and possibility may realise a dead-inert world of closed energy that has subdued the force of change into part of its own structure; or exhibit how radical creative invention takes breath from the cycle of form secured by its absolute original necessity.

Classical quantum interpretation Bohr, Heisenberg	Formative informational potential Bohm, Hiley
hides phenomena in an elusive world of statistical average;	celebrates form in wholeness;
causality breaks multiply into infinite possibilities only recovered by a statistical averaging;	causality breaks singularly and dramatically in the admission of a global information field that restores causality as after-influence;
aligns a global nature to permeate the weird world of local phenomena;	local relationships utilise to the maximum the symmetry and exchange of basic properties to allow the potential for a global phenomena to resonate in its midst;
alerts us to the stability of the atomic founded substance over all inducement to change;	triumphs momentarily over causality to cohere potential into new form.

Table 1: Comparison of Bohr conceptual model with Bohm's informational perspective

The foundation of causality out of the depths of potential changes to the distinction out of wholeness familiar from the ingenuity of life.

Just as Schoedinger's cat seems to suspend life forever in the minute detail of its demise, so there is an equivalent tale of creation where potential is remixed to startle life into new inhabitancy defying the running down of the causal order. The fluidity for transformation between death and life is born in the same breath as the form in potential is safeguarded.

Specifically it is the polarity of dark-light that allows us to work around the contradiction of the limitation of concepts to track a strict development from what is past to what is future. When past is separated from future, all perspective upon whole reality is lost. While this may work in a limited way when left to operate in an unchanging temporal pattern, the future becomes prisoner to repetition of a

stale present. The journey through dark-light, reattaching to wholeness, reinstates the viability of flow from past to future.

Resolution

Is description of phenomena by space-time achieved by relativity open to another natural description through the experience of dark-light journeys holding the universal?

Relativity is based upon the notion that an ambiguous freedom exists in how one defines space/ time framework of local measure in keeping with the universal character of physical law (including the constancy of light). This freedom is explored by considering the symmetrical transformation by which separate frameworks may be mutually distorted to preserve a whole consistent view of the world. In general relativity, Einstein shows how a unique mutual falling towards wells of matter accounts for a mosaic of differently posed local frameworks, under the guise of gravitation.

The relative frameworks integrate so that light travels a universal continuum through the local frames of space and time that make it up. Now in this work we are doing the opposite: that is going from a journey through wholeness to a freedom in how the local dimensioning of the journey into ground and outcome may be posed. The question is can the journeys through dark-light into wholeness converge so that they act like a lens pinpointing a unique meeting of past and future upon a singular event of unification?

The universal is embedded as outcome of the journey into the local, as if one is reading the map of coordination upside down. One begins with awareness prior to the distinction of the world and focuses these journeys as a lens to draw the world in to its essential: past and future as a single nature. The symmetries of relative local perspectives in the active web of relationship coheres to find the world focussed in its midst.

Dark-light lines in the journeys of experience create a lens in which the world of distinction past-future reveals within the essence of its wholeness from which distinction emerged. Rather than wells of inertia pulling events towards the ease of their integration, heights of rare ambition are held in the conditions of if to accommodate different aspirations into the unique intricacy of form as then. The frameworks, in which the universal is locally encountered, converge upon a consistency where the speaking of wholeness unconditionally gives authentication to each relative assertion.

Conclusion

The crossing of the sea of potential, instead of being passed over by statistical artefact, holds the creativity of form when realising wholeness in its traverse that coheres between the ports of order.

The arrival at causal destinations is filled with the optimum imprint of potential at the moment of encounter of individual with universal that is carried as bounty back into the port of causal law. Instead of a mathematical account holding the detail of a dark passage in the certainty of the sure, the intrinsic coherence and beauty of form is the destined fare of the journey into light.

The stability of the classical account is enriched by the wonder of the dark-light traverse that weaves potential into its most articulate forms. Where possibility was included in a shadowy allowance of its disturbance to causal law, now potential in the full light of its capacity, participates in equal measure as an emissary of new form.

One arrives, through the journey of dark and light, at an aggregation of past-future experience in a symbolic (archetypal) language of future significance. The symbolic language of dark-light: both outcrops from the past, framing the atomic account and issues into the future, choosing the world as wholly conceived.

ⁱ Richard Feynman (1985) **QED: The Strange Story of Light and Matter**; Penguin Books

ⁱⁱ Rudolf Steiner (1897), **Goethe's World View; The Contemplation of the World of Colours**; online at http://wn.rsarchive.org/Books/GA006/English/MP1985/GA006_c03.html

ⁱⁱⁱ Bortoft, Henri (1996) **The Wholeness of Nature: Goethe's Way toward a Science of Conscious Participation in Nature**; Lindisfarne Books

^{iv} Chris Clarke (2009) **Is the Universe in a state of pilgrimage** www.earthlinksall.com/processandpilgrimage

^v Brian Goodwin; **Temporal organization in cells; a dynamic theory of cellular control processes**; London, Academic Press, 1963

^{vi} David Bohm (1980) **Wholeness and the Implicate Order**; Hidden Variables in the Quantum Theory; Routledge and Keegan Paul

^{vii} Hiley, B. J. (2004). **Information, quantum theory and the brain**. In G. Vitiello (Ed.), **Brain and Being** (Vol. 58, pp. 197-214). Philadelphia: John Benjamins Publishing Company.