

CONTEXTUAL WHOLENESS

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One of the hot subjects currently debated among scientists and philosophers is that of the limitations of science. Is there something lacking in the scientific method, as currently practiced? Could the type of reasoning used when applying this method need to be adapted to new findings? Should the fundamental premises underlying the scientific method and supporting the reasoning be examined from a deeper level of abstraction? Is there something wrong with the very way nature is objectified in order to be observed and studied?

By using the currently accepted approach to science we are in a position to measure and fathom some of nature's features, like solid states, radiation, or complex systems. The fact that other features (energy, dark matter, gravity, retroactive causality or the nature of health) have still not been made sense of, is attributed by many to the fact that science has not yet advanced sufficiently to find ways for doing so. The proponents of this position believe that to secure progress in the above area, all they really need is to extend the present research methods, improve the measuring devices, perfect their computational skills and refine their reasoning power.

The possibility that there may be features in nature, for which the familiar criteria of acquiring scientific knowledge are inadequate, doesn't enter the thinking of these proponents. Their position forces us to raise the question of criteria. Scientists will have to deal with this problem eventually, as the old criteria increasingly fail to explain the new findings. Some of these findings are quantum entanglement (in both the subatomic world and living organisms,) the incredible plasticity of living matter, man-machine interactions, strange attractors and those other recent scientific breakthroughs mentioned above.

Immanuel Kant expresses in his *Critique of Pure Reason* the opinion that reason requires a critique from within its domain. If he is right, we are justified to also invite a critique of that critique. For example, we today analyse our understanding in terms of unconscious forces, memories and conceptual projections. Should we not attempt to do the same for our scientific understanding? For example, should we not look into what Carl Jung calls the 'rationalist neuroses' and 'rationalist superstitions of our age?'

There is only one point we must watch in going down such a path. The critique of a critique of reason must be formulated from a level of abstraction deeper than that conceived by Kant. To understand something well enough to pass judgement on it, requires an ability to *stand under* it -- to see where its roots are, where the observer's roots are and how objectively the latter is able to apprehend them.

Richard Tarnas made this the cornerstone of his *The Passion of the Western Mind* when he wrote: "[O]nly by recalling the deeper sources of our world and worldview can we hope to gain the self-understanding necessary for dealing with our current dilemmas."^[1, p XIII]

Seeing beyond objects through objects

Ultimately, reason cannot sit in judgement of reason. Reason can be judged only by a mindset that has become aware of what informs the objectifications on the strength of which reason has come into being in the first place. The careful weighing of how these objectifications have been arrived at is what gives reason its particular character and direction. Equally it points to its limitations.

Another conclusion emerges as well. That which invites us to develop a structured view of things matters more than that which the view itself reveals; that which allows us to form a judgment matters more than that which the judgment refers to. Through their dynamic interplay, the aspects of the science-consciousness interaction establish a kind of feedback loop. What we know and think influences what we perceive and conceive; how we perceive and conceive influences how we know and think. What we have here is dynamic process. It is not a tidy structure or a determining principle.

Consciousness thus can be used to influence science as much as science can be used to influence consciousness. A model proving useful here may be that of the mind-brain interaction. Firing brain cells trigger emotions, sensations and thoughts. By the same token, emotions, sensations and thoughts trigger brain cells into firing. The cause is the outcome and the outcome the cause.

Which comes first (the neuronal arousal or the thought) determines for many whether consciousness is ultimately physical or non-physical. The notion put forward here is that the dichotomy between physical and non-physical reality stems from object-mediated thinking, which restricts understanding when taken to its limits. Consciousness, like nature itself, is what it does and does what it is. Important is not which comes first – the neuronal arousal or the thought. A neuronal arousal may result from *retrocausal action*,^[2] as indicated above. It may also be the outcome of some particular *non-observable initial conditions*, of the kind that chaos theory detects at the roots of any level of organization.

The mental event (thought, feeling, belief, interest, information etc.) doesn't only mobilise the neurons; it affects them physically. There is growing evidence for that. Scientists became aware of it during the 'Mind and Life' experiments conducted at Harvard on meditating Tibetan monks in 2004. These experiments show that meditational practices have a significant bearing both on how the individual thinks or acts and on the very neuronal *structures* where the thinking manifests and the action begins.^[3]

Unsatisfactory understanding

Yet another conclusion emerges. We need to establish a new discipline -- *self-reflective inter-disciplinary consciousness studies*. Such studies will empower science to become more useful in investigating reality. It will also empower society to shed more light on the root-causes of some of its major problems, including suggestions on how best to handle them.

The fact that brain-wiring is now known *not* to be determined before birth, the realization that brain structure can be changed even through plain measuring, shows that self-reflective inter-disciplinary consciousness studies *can* play a decisive role in showing not merely what limitations science needs to transcend and why, but where the changes should start from and how. The new non-paradigmatic science here envisioned will need self-reflective consciousness studies to find its way -- and (thereby) point to a more satisfactory understanding of reality than is presently possible.

The unsatisfactory nature of our current understanding of reality doesn't arise from what we conceive to be its content. It arises from the unsatisfactory way our understanding has come to operate. To such an extent have we allowed our selves to conceive the world in the guise of a collection of objects, that we approach even the need for corrective action in object-mediated terms. We don't ask ourselves what has caused the limitations to begin with, or what can be done to abolish them.

Self-reflective inter-disciplinary consciousness studies represent one way of doing exactly that. However, to succeed we need to start from examining two things. First, how did it happen that for us in the West consciousness lost sight of itself? In Asia, through meditation and in pre-classical Greece, through introspection, we used to be able to check on our selves. We didn't allow our abstractions to run away with us.

Today the sense of just-being has been replaced with the sense of just objectifying. From experience we have moved to description of experience and from self-awareness to self-consciousness. Psychology has taken over from ontology, information from knowledge, crystallisation from focusing.

Chinese fuzziness

The second thing we need to examine is why we developed the tendency to clearly delineate the objects we perceive and then to get gradually absorbed into their outlines to the exclusion of others.

Some may claim that dealing with clearly delineated objects represents an all-human trait. It doesn't. In old China nothing was considered purely one thing or another, subject or object. Chinese logic was fuzzy par excellence. The sages didn't focus on unchanging states. They focused on changing patterns and on the regularity of their manifestation.

Neither did people believe in crystallised relationships. Synchronical occurrences and the deeper existential patterns they reveal, were what attracted the Chinese. In the Chinese worldview, creation is the outcome of a natural fluctuation. A physical unit develops this or that characteristic, or moves in this or that direction, because of the particular circumstances and pressures enveloping it. But the circumstances and pressures are not local – appearances to the contrary. *The entire universe determines what happens to each of its trillion trillion units.* And it does so by means of the local and non-local links bonding it to that one particular active unit.^[4]

The crucial question is whether scientists allow the 'what' of their personal beliefs to spill over into the 'how' of nature, or, on the contrary, they invite the 'how' of nature to spill over into the 'what' of their personal beliefs. Since the Middle Ages the former has been the case. Scientists have felt that they had to be truer to what the reigning doctrine spells out than to what nature reveals. There were rebels of course – there always are. Copernicus, Galileo, Parakelsus and in our times Einstein, Goedel and Jung are telling examples. But in the end, the 'what' of human understanding prevailed over the 'how' of nature. The rebels of yesterday became the models for today.

It will hopefully become the purpose of self-reflecting inter-disciplinary consciousness studies to reverse this trend. A new qualitative science – a science of processes -- will thus emerge. Nature, not some mental construct, will become the arbiter of what can be safely considered a 'what,' for how long and to what practical purpose.

It doesn't mean that humans must revert to instinctual behaviour. It means only that humans must stop wanting to dictate what nature's phenomenal order is like. They must invite instead "the spirit of nature to bring forth its own order through the human mind when that mind is employing the full complement of [its] faculties – intellectual, volitional, emotional, sensory, imaginative, aesthetic, epiphanic," as Richard Tarnas puts it. In such conditions, Tarnas explains, "the human mind lives itself into the creative activity of nature... and the world speaks its meaning through human consciousness."^[1, p.435]

Science, objectification and consciousness

So far it was argued that to successfully meet the growing challenges facing science and society today we must abandon the object-mediated approach from which we investigate physical reality. But some thought needs to be given to how science and society may be reformed so that more of their inherent potentialities come to the surface. Can shining the torchlight of consciousness on science and society be of use in such an enterprise? If so, shouldn't this torchlight first be directed on its own self? Is it feasible for a person intent on knowledge beyond information to avoid Socrates' imperative for self-knowledge?

Becoming familiar with why we carve up the world in the way we do will be the first step in such a direction. Other steps will follow. How does consciousness sense that which cannot be objectified? How (and why) does it lock into the objectifications it concocts? How does it handle (and relate) the objectifications to one another? Most of all, to what extent does consciousness bring wholeness, experience and memory to bear on what attracts its attention?

In spite of having dealt extensively with consciousness in its neurophysiological aspect, neither contemporary science nor epistemology, have asked such fundamental questions. They haven't even suspected that they should be asking them – that without so doing the answers they obtain by way of usual research are only partially true and often alarmingly misleading.

Having said that however, it would be a mistake to consider that the limitation of science today is that it apprehends nature in terms of object-mediated determinism. The limitation is that object-mediated determinism has become a paradigm. We lock into what we grasp and a little later we lock into how we interpret that which we have locked into. Things, ideas, feelings all become permanent fixtures. They lose their dynamic aspect. The left hemisphere of the brain, as Iain McGilchrist suggests, has taken over. ^[5]

Detrimental paradigms

Here a different path is followed on the question of paradigms. It applies particularly to new paradigms formulated by some in blind reaction to the old. To brand things 'right' or 'wrong' means that the world is conceived in terms of unexamined clichés – not in multilayered, trans-conceptual and interpenetrating wholeness.

The roots and effects of object-mediated thinking (not to mention the widespread implications of this thinking) will not be discussed here. Attention will be drawn instead to the following two questions: (1) What is the good of replacing fragmentation with wholeness if we objectify the conception of wholeness and thereby lock into it? (2) What is the use of replacing 'wrong' with 'right' so long as we believe that 'rightness' is decidable – that we, as thinking individuals or societies, can actually objectify the truth?

To think of an answer to these questions we must start from realising that wholeness is not the totality of things. It represents their qualitative and ontological interpenetration. This being the insight, science and society should be concerned less with being 'right' and more with being responsive to nature -- without projecting paradigmatic conceptions onto it. Nature equally uses wholeness and fragmentation, structure and process, linearity and non-linearity, consistency and spontaneity. But it never does so exclusively. There is always a little of the one in its seeming opposite.

New ways of thinking, not just new thoughts

Each time we lock into our objectifications we ignore nature's ways. We treat things as though they occur on the same level of description, or are informed by the same rationale. Differences among units of existence are ironed out. They are not viewed from the specific observational outpost appropriate to them. They are not apprehended with reference to what prompted the observer to isolate them in the first place, to compare them or to study them.

We need to be preoccupied less over *what* to conceive and more over *how* to conceive. We need to care less for the nature of physical reality and more for the quality of knowing. We need to be concerned less with what to accept as appropriate and more with what not to discard because the reigning theory considers it inappropriate. New observations (leave alone new findings) demand new ways of thinking. They don't demand just new thoughts. We cannot practise holistic science with a fragmented (and a fragmenting) mindset – one that treats wholeness as the conceptual opposite to fragmentation.

Paradigms – even seemingly desirable ones -- are detrimental because once established, they make us apprehend reality on their terms. They assign arbitrary significance to certain features, relationships and patterns at the expense of others. They edit out all the gradations, subtleties, dynamics, spontaneity and multi-levelness of physical existence. Paradigms thus undermine the ultimate *search* for what obtains beyond the perceptible. They abandon process in favour of structure.

From the minute we lock *into* an entity, state or relationship, we lock out the variability of the whole it is a part of. We exclude the most fundamental quality of the world itself -- not to mention the way this quality influences the particular entity, state or relationship we are momentarily involved in. Aristotle's criticism of the Pythagoreans becomes pertinent here. He writes: "All the properties of numbers and scales which they could show to agree with [their conception]...of the heavens, they collected and fitted into their scheme. And if there was a gap anywhere, they readily made additions so as to render their whole theory coherent." ^[6]

Not merely contemporary science, but contemporary philosophy and theory could learn from the above astute Aristotelian observation. However, scientists, philosophers and theorists would first have to become aware of how Aristotle conceives objectivity. So far this hasn't been attempted. Existing definitions are mostly circular. You define in terms of what you think you know -- and you know in terms of what you think you define.

A holistic approach to wholeness

To make people aware of this situation, we need to look more seriously at what ultimately qualifies holism -- and nature as a result of it. This entails endorsing at least three significant epistemological premises, which impinge directly on how perception is effected.

The first premise is that we can never acquire an objective overview of all the entities, states, forces and relationships in the universe. There are four reasons for this:

(I), as Werner Heisenberg points out, we ourselves are part of the whole.^[7] We can therefore never truly observe all of it, leave alone abstract it.

(II), even if we did manage to get outside our skin and observe the whole universe; too much of it is around for us to be able to take it all in by way of abstraction. It would require at least as long as the universe has been around to do the job!

(III), the constituent parts of the universe interpenetrate one another in such a complex fashion across space, time, form, levels of organisation, electrical charges, structural varieties and ontological strange attractors that any attempt to fit them into one coherent objective picture would completely overwhelm us.

(IV), those who insist on concocting such a picture do so by leaving out what *they* consider as being of secondary importance. Thus they undermine whatever claim to an objective description of nature they may nurture. Being partial, all descriptions of nature suffer from this kind of limitation. Goedel's incompleteness theorems merely substantiate the fact mathematically.

Plunging into experience

Let us move to the second epistemological premise. It is that we cannot tackle wholeness with a mindset schooled in bottom-up structuring. Indeed we cannot investigate any subject through a methodology not informed by it. If we desire to really understand the whole on its terms, we need to stop seeing physical reality exclusively as a compilation of fragments.

Finally, the third epistemological premise, which must be taken into account when trying to add a qualitative to the quantitative understanding of wholeness, is that we view the whole as the organizing principle of the world in its entirety. i.e. we need to see it for what it actually achieves. We cannot film successfully an object racing along at a speed and in a trajectory which our camera has not been built for.

The same applies to the understanding of wholeness. The mindset required for apprehending it must be adequate to the task. It won't be sufficient for it just to conceive wholeness through a combination of quantitative components. Wholeness is the context, as well as the fibre, of being itself. It resides in the mind of the perceiver to the extent that it infuses the reality which the mind perceives.

Concluding thoughts

This article will finish by adapting the views of two important thinkers on the question of the limitations of science and the abstracting mind. The first is Jeremy Naydler, a specialist on ancient Egyptian religion. The second is Tew Bunnag, a writer and teacher of meditation, tai chi and other practices from the East.

Naydler's adapted views go as follows:

While aspects of the whole may be studied both philosophically and scientifically, the normal everyday consciousness is not adequate to the task. The deeper understanding required for studying wholeness arises only when the philosopher or scientist are prepared to allow themselves to be conceptually challenged by the material they are studying. A point must then come when the philosopher or scientist are no longer studying qualitative wholeness. They are moving into qualitative wholeness themselves.^[8]

Bunnag's adapted views run as follows:

Finding the answers to problems and then raising them to the level of absolute pronouncements is a practice undermining the comprehension and handling of nature. Socrates knew that very well. He realised that any attempt to define the truth of a particular subject backfires. For one thing, nature is always incomplete; that is why it keeps evolving. For another, truth (in Greek 'aletheia') is not a formula. It is a state of mind. That is why in our times, wholeness demands of us *not to take answers too seriously*. It invites us to stay more with the questions -- to listen carefully to what nature whispers in our ear, *when and as it does*.

If 'aletheia' is a state of mind, qualitative wholeness is a state of being. It becomes its own worst enemy if viewed as the substance of, or the path to, certain knowledge. It follows that this article will have served its purpose if the few answers it suggests are received as mere tentative probes in a certain direction -- perhaps worth pursuing in the future if enough interest is raised.

The key to understanding is to remain open to further insights. It isn't to encapsulate them in air-tight formulas. Our civilisation shows that the age of doctrine – religious, philosophical or scientific -- has finally exhausted its potential.^[9]

References

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9. Tew Bunnag, in personal communication with the author, July 6, 2011

Emilios Bouratinos is a philosopher of science, who was born in Athens in 1931. Disenchanted with 20th century analytical and positivistic philosophy, Bouratinos turned early on to the thoughtful writings of the great physicists of our era. He discovered that quite a few consider a better understanding of the mind indispensable for advancing further in the study of physical reality. Thus, since 1972, Bouratinos has been devoted to the study of consciousness from a footing that is equally inter-disciplinary and self-reflective. Today he advocates the creation of a new science that, starting from the great breakthroughs of 20th century physics, will accept the profound implications of these breakthroughs for the way we think about and handle the world.

