Table N° 19

The Geometric Language —
accompanied by a progressive apprehension of religiosity

The work of rendering the sculptural form of the table was driven by my yearning for insight on being; I hadn't intended to create an artwork. As I see it, artistic effort (with innovative composition of form) creates space for a possible existential enlightenment.

After 23 years of working to those ends — 18 handcrafted tables; each unique — an unintentional, geometric abstraction revealed itself in schematics of the nineteenth; intertwined with its form: Table N° 19.

After some years of analysis, that outcome led to my becoming increasingly convinced that that arbitrary abstraction (a flat rendering of form), might also shed light on the similarly nonsensical aspects of quantum physics, for which Niels Bohr was a defining figure.

Niels Bohr and Albert Einstein

To put it simply, the inherent problem with quantum physics is its inability to register the atomic state. Any measurement/registration of an electron alters its original position. The action of measuring in itself disturbs the electron, varying its position by a quantum (the smallest unit of energy). Thus measurement reveals nothing of the electron's prior systematic positioning, simply its placement during registration (subsequent to its original position). This makes it impossible to simultaneously determine the speed and placement of an electron with great accuracy.

Furthermore, an electron can, seemingly without cause, behave like a particle or a wave (within the atomic system). This becomes even less understandable in that electrons can create a cloud; wherein they can be everywhere and nowhere at the same time.

'Entanglement' is not such a boring read. It asserts that if two elementary particles have been in contact (entangled), those particles retain that contact regardless of their proximity in the universe. Each particle *knows* — is aware what the other is doing — and will react inversely to when the other is influenced. It's referred to as 'spin' — a form of internal rotation occurring simultaneously in both particles in all directions. *Instantaneously*. That's in conflict with Einstein's theory, that nothing can travel faster than the speed of light.

Since everything consists of atoms, the behaviour of electrons exemplifies the inability to clearly define the state of our world — due also in part to unfit measuring equipment that's unable to measure waves and particles at the same time.

The incompatible, unobservable quantum-leap of the electron around the nucleus of an atom doesn't exactly make its minute world more understandable. The problem is that mankind (as Niels Bohr formulated it) *is bound to its forms of perception, concepts of our day-to-day language, which can not be applied to the atomic world*. The consequence being, that one cannot extract a specified mathematics from it.

Further particulars have been uncovered since the dawn of quantum mechanics 100 years ago: atoms consist of even smaller components, such as quarks and superstrings. Though as I understand it, we are still unable (*never able* - according to Bohr) to grasp a full knowledge of these phenomena. The complimentary/contradictory results drawn from observation might be *pretty neat* — perhaps even *stunning* as they say, in and of themselves — but they remain incompatible with each other. Measurement reveals an altogether misleading picture of our world.

In another context, the problem's been expressed otherwise: *'we live in a universe whose age we can't quite compute, surrounded by stars whose distances we don't altogether know, filled with matter we can't identify, operating in conformance with physical laws whose properties we don't truly understand.'*

It might suffice to say, that the knowledge we have is the knowledge that our knowledge of the world is insufficient.

The philosopher Immanuel Kant's theory, that mankind cannot perceive reality as a '*thing-in-itself*', was scientifically substantiated by Niels Bohr who put it like this: *It is wrong to think that the task of physics is to find out how Nature **is**. Physics concerns what we **can say** about Nature.*

I relate these problems of reality to the geometric abstraction, my drawing depicting the actual table — it details two possible positions *simultaneously* (without even disrupting a quantum); the *stationary* and *mobile* positions.

The abstraction thus shows a concrete reality, whilst also detailing the constructive contribution — and hence a contradiction to Kurt Gödel's

speculations on the inability of mathematics to describe reality. *That will be* is the case with mathematical investigation of geometric abstraction.

It may not be too far-fetched to consider whether my abstract result might aid the incomplete (according to Niels Bohr) definition of reality as formulated by Einstein, Podolsky & Rosen (EPR). It premised *'If, without in any way disturbing a system, we can predict with certainty the value of a physical quantity, then there exists an element of physical reality corresponding to that physical quantity.'*

Following the presentation by EPR, a longstanding and very constructive discussion unfolded with Bohr. Einstein insisted that nothing could exceed the speed of light; that the very slowness of light is an indication that not everything can occur at the same time and that space exists as distinguishable localities, limited for mankind by the speed of light within a given timeframe. Logic that thus contradicted the unpredictability of quantum mechanics. Einstein believed there is order in our universe— if one could just give it enough thought.

Einstein's experiment was based on Bohr's claim that a measurement of the one (of two previously mentioned) twin-particles (their *Entanglement* when separated) would reveal the second's positioning and velocity, without measuring the latter: thus that quantum physics may be predictable — one could say more about the world, than the inherent limitations of quantum physics. Though according to Bohr, it could not be viewed as such; the two particles, both of them in unison, must not be considered separate but as a singular system.

Naturally, I cannot judge whether the issue is understood properly (and/or reliable otherwise). Though with all due respect to both Bohr and Einstein for their remarkable discoveries (not to mention their individual personal qualities), I believe their fixation on the problem doesn't entirely add up, because they concerned themselves with *passive registration* of a natural system, sidestepping an innovative handling thereof.

The abstract system of Table N° 19, revealed itself without the slightest disturbance of a quantum, coming about through an active handling of physics.

Science concerns itself with the registration of systems; it attempts to unravel the correct influences and configurations of factors making up the world — a desire for knowledge about the seemingly contradictory equilibriums that enable our world to exist as it does.

Those circumstances are comparable to the visual abstraction of the table through the drawing. It shows a complex system of push and pull forces reflected reciprocally; as well as to and fro 'ping-pong effects' on the table's various shapes within a squared border. This complicated system illustrates (comprehensively) the abstract condition of circumstances with which the table exists physically.

Considering geometric harmonies, Einstein (as opposed to Bohr) may be correct in his persistence of principle, that our world is orderly; that *'God does not play dice'*. I believe Einstein lacked the notion that knowledge of the world can (perhaps only) be acquired through a systematic abstraction of geometric credence — *subsequent to* a dynamic, attentively engaged handling actively executed by a *creative* person.

This geometric approach to knowledge could perhaps lead us closer to the grand 'unifying theory' of quantum physics and relativity that Einstein sought in vain.

Geometry's DNA

Phenomenology assumes the philosophical point of view, that the basis of our reality (if it's possible) can be perceived in the phenomena of the world. The philosopher Kant, on the contrary, insisted that it wasn't possible: the 'thing-in-itself' (i.e., *reality* itself) becomes distorted by one's subjective limitations. Just as with Plato's famous 'Cave Allegory' — with shadows presenting a shroud of what otherwise is.

The conditions for phenomenological insight is a distancing from other philosophical perspectives — extremely complicated reading for a layman. Though simplified, it is the language itself that is the condition; unambiguous/accurate and fair. Furthermore, preconceived notions of any kind are entirely ruled out. Intuition is a must — for it enables (possibly) the potential to 'see'. The cognitive process, thereafter, requires a method to comply with.

The pioneering philospher Edmund Husserl formulated an interesting attribute of geometry:
Geometric space does not precede its content, but is rather built and opened up by the geometric formation (or more precisely, by the given transformational groups) that make up its content … various movements in space are not merely process, but — if one banishes linguistic concepts — spatial generators.

Husserl apparently believed that geometric shapes condition space — thus reality — which isn't entirely uninteresting.

I can supplement that opinion (amongst many others) with my own experience. Space, in my view, is the forum existing wherein we humans/phenomena continuously find ourselves in time. My table included — appearing also in space, albeit with an extensive instruction manual of mathematics — and as argument; though essential to that point of view, the

abstraction's legibility is conditioned by (only made possible through) the ordinary geometric composition with which it is intertwined.

According to phenomenology, the possibility for insight is based on intuition. I agree with a string of thinkers since antiquity, such as Galileo and Plato, who've taken geometry as their starting point. The difference being that my intuition — as opposed to the phenomenological approach, whereby doubt is a primary condition of 'seeing' and thus passive — resulted from concrete thought and active treatment/handling (and therein resolving its engineering) gleaned from 18 previous tables and the thousands of hours laboured in over 23 years, without taking a stance on its geometry. *The geometric context did not factor into my considerations. This geometry revealed itself in blueprints that followed, when the table stood completed.*

Hence the 'comparison' to phenomenology as an extremely complicated 'observational phenomenon'. The mind is observed; measuring, registering, reflected in artistic abstractions where deviation from the concrete world increasingly becomes a virtue.

I'll credit that opinion to the fathers of existentialism, Kierkegaard and Nietzsche. Both proved (albeit quite differently) that despite centuries of repeated attempts, a sustainable philosophy could not be established on par with the prevalence of powerlessness in Christianity.

The goal of existentialism was to replace the Christian religion. It became (quite obsessively) a new religion aiming of delve beyond worldly phenomena by means of intuitive abstraction — a sentiment I think is faulty. It cannot be existential, if abstraction is based on distancing oneself from worldly presentation; the forum we actually find ourselves in. That is not the case with Christianity. Over time, it was established entirely on factual frameworks by which mankind could relate to its religious reasoning.

The problem is, that the Church (just like existentialism) doesn't take into account the knowledge of the world contributed by modern science. Religion/frameworks ought to be based on facts. The Church does not do so — mankind's precursory conditioning is emulated as guidance for all of its ecclesiastical conduct.

Galvanised throughout centuries, that management of conditioned powerlessness set the stage for worldly society; and because of its massive imprint, declarations of intent at global environmental conferences and the numerous substantiating scientific reports, remain unimplemented — regardless of consensus on the planet's state of decline and the receding opportunities to rectify this crucial problem facing humanity.

Christianity's DNA

A relevant understanding of life can by read in the Gospel of John. That gospel was intended primarily for our time — not merely its own; implied in its remarks to disciples on mankind's inability to 'receive/bear' the knowledge of the world (read: due to its 'state of infancy' at the time).

That's how I perceive his message — also in terms of its reflection (of sorts) throughout natural philosophy and those enticing formulations that analyse the 'Causality Problem'. There, the question was asked: *Why is change occurring?* — and thus the cause of nature's change. That question might be similarly applied to humanity — for which there are two options:

1. A Causal/Causality possibility; implying that change is a return to roots in the past. An understanding initially conveyed by the three synoptic evangelists: turn back from present delusions — towards a reunion with the divine.
2. A Teleological/purposeful possibility; implying progressive change. Potential embedded in substance — realised possibly in the future.

That I subscribe to the latter is due to my trust in John — at the beginning of his gospel (the fall), he *does not* put forward an impression of man's inherent sinfulness. John's gospel makes the fall of man understandable with its account that in the beginning, that worldly reason bestowed upon man (the spirit of life / the religious instinct breathed into Adam's nostril/brain) *could not* be grasped/understood/managed by mankind of yore.

Pure reason by John — meaning that that wisdom bestowed upon man was a teleologic/purposeful one. Enlightenment was a substance embedded in mankind's consciousness — only accessible when it could be managed with time and dedicated knowledge of the world — in the future.

That is now upon us. We are witnessing a profound moment of truth through traditional sciences, the world's context in new light — quantum physics and relativity, as Niels Bohr and Albert Einstein represented.

The introduction to John's gospel, together with the question poised of modern natural philosophy's Causality Problem, can be answered by the teleological/purposeful option.

Is it plausible, that insight might be grasped by abstracting the phenomenal premises — in light of an inability to be perceive the phenomenon 'in itself' — as phenomenology would maintain, and as was the case with Table N° 19?

— Finn Karentius Hansen
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