Topic

Science Philosophy and Leadership

By

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Introduction

We are now as some would label it in the ‘Systems Age’, which challenges the old world scientific paradigm of a machine like universe. We arrived here following the pathways of many revolutions .

The agrarian revolution increased our access to food thus freeing us from the toil of the hunter gatherer.

The spiritual revolution that spawned major moments and life styles embodied on the principles and practices of Hinduism, Taoism, Buddhism, Judaism, Christianity, and the Muslim faith.

The scientific revolution increased our understanding and knowledge of the world.

> ***“When you understand all about the sun and all about the atmosphere and all about the rotation of the earth, you may still miss the radiance of the sunset.”***
> ***Whitehead***

The industrial revolution multiplied our productive capacity and

The technological revolution which increased our inter connectivity and intelligence.

The ‘Systems Age’ draws on the themes of post-modernism, existentialism and complexity. It has confronted us with our limitations and has propelled us to look at the complex process of life and the universe and how we impact on the world and the world impacts on us. We are discovering that life and the universe are imbued with human meaning.

As leaders we need to lift ourselves from a myopic narrow perspective to a more holistic and emergent one. We need to enable organisations and our social systems to deal with complexity, change and the long view, our very existence now depends on it .

The ‘Systems Age’ is then an enabler to the 'Wisdom Age', we are at a nexus and will need to undergo a 'metanoia' a change of mind, which will assist us to recover our ancient wisdom, the perennial philosophy on which human nature actually depends.

Let us now explore some of the factors that both limit and propel us towards the 'Wisdom Age'

Positivism and Philosophy

Leaders can miss the big qualitative picture or the deep structure when they place a heavy emphasis on numbers and rationale processes . Rationality is a deeply embedded paradigm in organisations. Leaders need to include a more qualitative philosophical approach within their mental models of the world.

Organisations and leaders have focused narrowly on the idea that the best way to understand things is to take it apart. Francis Bacon in 1620 wrote- “Without dissecting and anatomizing the world most diligently, we cannot found a real model of the world in the understanding”.

Positivism- This old science approach to observing reality is deeply embedded within the psyche of individuals and the frameworks of organisations. Although diminishing it has held sway for over three centuries.

In the first half of the nineteenth century, Auguste Comte first expressed the three principal doctrines of Positivism:

The conviction that science was the only source of positive knowledge of the world. To eradicate mysticism, superstition, and any forms of pseudo-scientific knowledge. To extend scientific knowledge and technical control to human society, to make technology no longer exclusively geometrical, mechanical or chemical, but also and primarily political and moral.

“Positivism- A theory of the nature, omnicompetence and unity of science. Its most extreme form stipulates (a) the only valid kind of (non-analytic) knowledge is scientific; (b) such knowledge consists in the description of the invariant patterns in space and time of observable phenomena: (c) philosophy’s task is the analysis and summary of such scientific knowledge.”
Oxford Dictionary

The Role of Philosophy

The role and definition of philosophy is rather narrow within the context of the definition. It sits uncomfortably within the paradigm of science, and its role is relegated to analysis and summary, as opposed to Whitehead’s definition, (see next page) which is far more dynamic, philosophy is the “critic of cosmologies”.

The author Koso, provides the metaphor that positivism demands evidence factual or mathematical evidence as a security guard demands positive ID, not just on your say-so. He suggests that positivism works out well for scientists and mathematicians since it allows only them to speak.

"What is Philosophy?". The word derives from the Greek 'lover of wisdom'.

philosophy n. 1. The study or science of the truths or principles underlying all knowledge and being (or reality). 2. any one of the three branches (natural philosophy, moral philosophy and metaphysical philosophy) accepted as composing this science.

The distinguished English philosopher Ayer, writes that "Philosophy aims at yielding knowledge; or, if this be thought to go too far, at least it comprises propositions which their authors wish us to accept as true". He goes on to add that "Philosophy has not one but many objects of study - metaphysics investigates the structure of reality, ethics the rules of human conduct and logic the canons of valid reasoning"

So, Philosophy asks leaders to take an overview of the whole process, to play, dabble, construct, deconstruct and to go beyond the current operating norms.

Philosophy builds cathedrals before the workmen have moved a stone, and it destroys them before the elements have worn down their arches. It is the architect of the building of the spirit, and it is also their solvent:ąand the spiritual precedes the material.

Whitehead

Effective leaders co-design the organisational architecture that houses the human spirit, they work with the whole person, they engender trust and welcome dialogue and free thinking.

Dualism

Dualistic thinking has caused some of the deepest divisions in this world. Examples that stand out are the polarised arguments of quality versus quantity, short term versus long term, organisational growth or decline, leader or manager, people either good or bad, and people either for you or against you.

> *So far as the laws of mathematics refer to reality, they are not certain. so far as they are certain, they do not refer to reality.*
>
> *Einstein*

Dualism has its roots in Aristotle's binary logic:

A OR not A. Either this or not this. The sky is blue or not blue. It cannot be A AND not A. The Buddha lived in India almost two centuries before Aristotle. The first step in his belief system was to break through the bivalent veil and see the world as it is, see it filled with "contradictions".

Leaders and managers deal with complex processes and reality, dualistic thinking offers simplistic insights and strategies that address the symptoms of an issue. To address issues that deal with the core cause, leaders and managers need to become more comfortable working with the grey, and to build processes to work through complexity.

A key skill is to ask two questions folded into one e.g.. How can we increase the number of widgets by X and at the same time maintain quality Y, how can we achieve business growth whilst at the same time doing it sustainably around people and resources, and what is the best way to increase the efficiency of the team and improve morale.

> *"Into every tidy scheme for arranging the pattern of human life, it is necessary to inject a certain dose of anarchism."*
>
> *Bertrand Russell*

Deductive Reasoning

Called the top-down approach, it works from the general to the specific. Essentially it moves from theory to formulating a hypothesis, then gathering the evidence though observation to test the hypothesis, thereby confirming the theory. Deductive reasoning is a useful skill, however it tends to be narrow in focus as opposed to Inductive Reasoning which is more open-ended and exploratory.

Many leaders and managers dismiss any concepts that are unobservable like intuition, gut and feel because they lie beyond our observable senses. Many who hold this view argue that meaning can only be derived from our observations of the world or from deductive systems such as quantitative data or mathematics. There is an often held phrase that If it can't be measured then it can't be real. This position is known as "empiricism," because it treats the facts of experience as the foundation for all we can know.

Leaders and managers like some scientists hold on to an old science view of the world, their reasoning is driven by a 'hypothetico-deductive' system. This model has allowed us to reap the benefits of science which has made life for humans an attractive proposition. It has succeeded in analysing matter to its minutest particles, in exploring the far reaches of space and time, in unifying the human world and improving the standard of living. All this at the cost of polluting the land, water and air, destroying large numbers of species and animals and using up the resources of the earth on which life depends.

As the philosopher of science Popper has told us, all scientific theories cannot claim to be certainly true; all that they can legitimately claim is that they are consistent with existing observations. In other words scientific theories can never be proved to be certainly true, until they are proved to be certainly untrue; they are working hypotheses.

Because of the limitations posed by deductive systems, according to Davies scientists work backward to construct hypotheses consistent with their discovery, and then go on to deduce other consequences of those hypotheses that can in turn be experimentally tested. If any one of these predictions turns out to be false, the theory has to be modified or abandoned.

As problems become more complex in the world, Leaders need to understand the limitations imposed by deductive and reductionist reasoning and learn to embrace Inductive reasoning along with the deductive.

Determinism

Another school of thought that has influenced scientific reasoning is determinism: ‘God is reduced to a mere archivist turning the pages of a cosmic history book already written’ (Davies)

Determinism is based on the assumption that events are entirely determined by other earlier events. It carries the implication that the state of the world at one moment suffices to fix its state at a later moment. The conclusion is drawn that everything which will happen in the future of the universe is completely determined by its present state. There are millions of people in the world who will not step outside their door without consulting their star sign, which presupposes that most events are preordained.

Sadly there are a number of leaders and managers who follow processes and strategy with a blind faith and resolve that because it worked in the past it will continue to do so. Many organisational processes are also disconnected from the reasoning and thinking that set them up in the first place.

There are a plethora of psychometric instruments and methodologies that are used to box and type cast people in organisations. Effective Leaders understand the benefit of using this information as a starting point to understanding what drives people. Good Leaders also challenge the premise of these rudimentary frames, knowing that people are far more complex, dynamic and a bundle of contradictions.

> ***If the world is strictly deterministic, then all events are locked in a matrix of cause and effect.***
> ***The past and future are contained in the present, in the sense that the information needed to construct the past and future states of the world are folded into its present state.‘***
> ***Davies***

Specialisation

Whitehead argues that because of the complexity in our world, people are trained in specialisations of particular regions of thought 'thereby progressively add to the sum of knowledge within their respective limitations of subject'. He goes on to argue that effective knowledge is professionalised knowledge, supported by a limited acquaintance with useful subjects subservient to it.

> ***Science is founded on***
> ***the hope that***
> ***the world is rational in***
> ***all its observable***
> ***aspects.***
> ***Davies***

Professionalised knowledge 'produces minds in a groove. Each profession makes progress, but it is progress in its own groove'.

To work in the groove of a Doctor, Lawyer, Chemist, Educator is to work in contemplating a given set of abstractions. The groove prevents us from seeing other world views, it locks us within the paradigm of the profession.

Davies argues that the key to major scientific advances often rests with 'free-ranging imaginative leaps or inspiration'; which must include spanning the grooves.

> ***There is no groove of abstractions***
> ***which is adequate for the***
> ***comprehension of human life.***
> ***The directive force of reason is***
> ***weakened.***
> ***The leading intellects lack balance.***
> ***They see this set of circumstances,***
> ***or that set: but not both sets***
> ***together.***
> ***Whitehead***

Up to our current day there has been an overriding drive for formulas prescriptive step-by-step processes that inform people about how to live and act. Formulae are as if inscribed in biblical commandment stone, edicts of expert authorities, and are often blindly followed without question.

Business is increasingly valuing generalisation, and so there is an increased need and drive to span the grooves. A term often quoted is "we are interested in transfer" *i.e.*, what can we apply from another profession, system or field within our own. There is an increased awareness to find out about individual and professional paradigms and the matrix of thought and behaviour that locks people in.

Leaders and managers are required to span the grooves to move from the playing field of an old LP with deep entrenched grooves to that of a DVD - like its functionality to be able to jump and span the grooves when required.

Paradigm Shifts

The old scientific structures have started to demonstrate limitations: by the end of the nineteenth century it seemed like there were only a few more areas to explore, the whole world had been itemised.

Briggs observed that as they probed these remaining areas:

The puzzle-solving map-makers of normal science began to experience disturbing difficulties. They saw light behaving like both waves and particles and electrons jumping from one orbit to another instantaneously. The appearance of 'anomalies' which could not be fitted into the classical Newtonian picture of the world was bringing on what Thomas Kuhn calls a 'crisis' in the paradigm.

Kuhn noticed that during times of crisis new theories arise to explain anomalies, which are debated and questioned at length, before becoming the new paradigm.

> ***At each turn it is not the echo of a demise, a bell tolling for a passing away that is heard, but the voice of rebirth and beginning, ever afresh, of mankind and materiality, fixed for an instant in their ephemeral permanence.***
>
> ***That is why the great discoveries are not revealed on a deathbed like that of Copernicus, but offered like Kepler's on the road of dreams and passion.***
> ***Prigogine and Stengers***

Prigogine & Stengers argue that different points of view, cultural differences and philosophical convictions play a decisive role in the discovery of a paradigm. Rival paradigms are put to the test until one wins out.

Time takes over. With the appearance of a new generation of scientists, silence and unanimity take over again. New textbooks are written, and once again things go without saying.

Joel Barker in his famous video 'The Business of Paradigms', argues that most paradigms are written at the edge, and are usually discovered by people who had no investment in the old way of doing things and who generally were not part of the paradigm community.

The old prescriptive, reductionist model of Science has been challenged, the very foundations, premises and assumptions are questioned. Quantum Mechanics demonstrated the subtle way in which observer and observed are interwoven. Chaos theory revealed that the relationship between permanence and change was far from simple.

It is clear from this brief review of the development of the scientific approach over recent centuries that what we are experiencing now is equivalent to a backlash to the purely objective, reductionist, rationalist approach of the recent past.

The new tinge of modern minds is a vehement and passionate interest in the relation of general principles to irreducible and stubborn facts. All the world over and at times there have been practical men, absorbed in "irreducible and stubborn facts"; all the world over and at all times there have been men of philosophic temperament who have been absorbed in the weaving of general principles. It is this union of passionate interest in the detailed facts with equal devotion to abstract generalisation which forms the novelty in our present society.
Whitehead

There is now a growing realisation that science, as such, does not require a mechanistic world view. The reigning wisdom is under attack.Much evidence, especially from the new physics, suggests a less deterministic, more organic and subjective interpretation of nature. There is a 'within' of things which is what things are in themselves and to themselves. The stuff of the world is 'feelings' or relations clothed in 'emotion'. Subjectivity is everywhere in nature.
Birch

The new consciousness cuts across dualisms. It sees every dualistic concept as a gross abstraction from reality. The emphasis is on internal relations which constitute the inner aspect of all individual entities.
It is an experiential view of reality, as contrasted with the image of reality consisting of objects only. It finds the world a much more feeling place.
Birch

In Conclusion

We no longer find all our answers by dissecting, reducing and atomising things. Instead, we are beginning to witness the interrelatedness of things, knowing that the more we explore, the more complexity and richness we find and the more we isolate a given phenomena the more we see that it forms part of a complex interrelated web, filled with energy.

Our role here is not to get overwhelmed by this complexity but to look at the patterns and themes that are there. Look for the simplicity that emerges from complexity. There is an inherent pattern here of moving from simplicity to complexity to simplicity. Our very lives replicate this pattern from the simple but important needs of birth and early childhood to the complexity of our middle years with the fulfillment of complex needs and desires and finally to old age where there is a move towards rationalisation and simplification.

A further example illustrates this point. The Japanese tea ceremony or 'Wabachua' at first glance is a simple and stylised form of drinking tea. However hidden behind this surface level observation, is a rich and complex tapestry of cultural meaning and significance with complex rules that apply to the design of the Raku pot and cup and the method and timing of the ceremony.

Finally after immersing ourselves in this complexity, we come back to the elegant simplicity of the ceremony, this simplicity though is different it has been immersed through complexity it is a richer crystallised and more informed 'simplicity'- it is simplicity at the meta level.

As Leaders, we need to challenge our assumptions and operant paradigms, we need to move from a linear myopic, cause and effect view to a more holistic and cyclical view that extends to a longer time horizon. We also need to engage with a philosophical view of the world as much as we do the pragmatic.

We can utilise our creation, science to work with the tidal flow of human nature, we can achieve both, an understanding about the sun, the earth and the cosmos whilst enjoying the radiance of the sunset and the essence of humanity.

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