

RECONNECTING SCIENCE WITH THE POWER OF SILENCE

THOMAS R. ODHIAMBO

The three epochal revolutions that have involved the dominant societies of the world in the last four centuries – the Industrial Revolution from the early seventeenth century, the Electronic Age from mid-twentieth century, and now the prevailing Information Age – have catapulted the human family into new configurations in unprecedented ways never foreseen before. In each case, scientific discoveries, momentous technological innovations, and singular entrepreneurial talent have come together to re-direct human endeavour along paths rarely trodden before. The Industrial Revolution led to the emergence of massive industrial labour concentrating in large factory towns and cities, thus abandoning the countryside to commercial chemical-ly-oriented industrialized agriculture, and the wanton rape of the biosphere for self-interest, profit-making business. The Electronic Revolution led to the emergence of a burgeoning consumer society, and the uncovering of a global entertainment, popular culture. The Information Revolution is currently characterized by borderlessness, the creation of new employment patterns, and the phenomenon of the flexible working place and frame.

For 10,000 years, farming dominated society. This has changed dramatically other than the tropical developing countries of the world, the share of the farm sector to the gross domestic product of the industrialized countries is currently down to a mere 17%, where 90 years ago it was a dominant 70%, and the farm population is now tiny. Manufacturing is today going through the same diminishing scenario. The Information Age is on the ascendancy: for instance, information-dense products, such as education and healthcare, have five to six times the relative purchasing power that manufactured goods once commanded half-a-century ago [1].

The contemporary world is facing a seismic challenge in how to manage modern technology. The latter has today reached the capability to measure actual chemical events at the atomic level in femtoseconds and is, at the same time, treating life as a tradeable commodity. The globalized marketplace has substituted the *consumer* for the *citizen*, and is fast consigning the concept of citizenship to the container of fading, old-fashioned human sociology. The crucial question is whether there exists at this juncture of human evolution a will and an intention to govern and manage the scientific endeavour of discovery and innovation within a God-centered environment of universal truth and wisdom, of honesty and peace.

The contemporary scene seems to depict the process of scientific discovery and technological innovation as a mindless robot having no morality computer chip to guide its actions vitally important in the societal arena. Indeed, a 1998 survey by the University of Georgia showed that the great majority of scientists in the United States (93% to be exact) are either atheists or agnostics; whereas, for years, Gallup polls have shown that over 90% of ordinary Americans profess a belief in God [2]. The conclusion is dramatically clear: that the scientific community, by the manner in which they do things scientific, have by and large taken a different path to that taken by the great majority of humanity in the search for their wellbeing and wellness.

This situation, prevalent in the scientific community, is not a surprise. It is becoming clear, through social science research that through our assumptions, the topics we select, and especially through our choice of questions, we largely create the world we subsequently discover. We seem to live, each one of us, in our various worlds that our enquiries create. Thus, humans evolve in the direction of what they most persistently and genuinely ask questions about. Questions, in this sense, do more than gather information: the questions that we, as a group, ask consistently focus attention and direct energy toward that focus, thereby structuring what we subsequently find. What we find becomes the new starting point for our conversation and dialogue. And the results then constitute a platform from which we make sense of the world around us, narrate and imagine, speculate and theorize, and then create our future together emotionally, conceptually, and spiritually. As it happens, scientific enquiry in its modern practice over the last few centuries, through its conceptual scientific methodology of observation, study, and experimentation, has strictly limited itself by design to investigate and interrogate only those issues that can be validated by observation, that can be measured, and that can be counted. This

material-centered path to knowledge is extraordinarily successful; but it is constricting, and shuts out questions that go beyond the material realm.

It is clear, then, that science as we know it at present, progresses only, first, through the acute use of the entire sensory capabilities of the human being – observing, counting, and measuring – and, second, by the use of reason and the human being’s capacity to analyze the collected data in relation to a hypothesis as to how things work in this physical dimension. Thus, *science* is about revealed genius, and talent, and skills; it is about connectedness, and about knowing what is current and gone before; it is about endeavouring to know about the uncharted waters of the yet-to-be-known; and it is about understanding this novel aspect in relation to what we had conceived as our framework understanding. On the other hand, *spirit* is about worthiness – about revealed wisdom and knowledge, about righteousness; it is about connectedness and sharing, about forgiveness and love; it is about knowing God. The two, science and spirit, are not mutually exclusive, as *both deal with truth and knowledge*, and *both depend on connectedness and sharing* as their foundational underpinnings. The two, however, differ in a seemingly irreconcilable way by the current scientific methodology, which insists on the validation of scientific knowledge that is testable by objective observation and experimentation.

Yet, we need to understand that the great majority of the world’s people do not consider themselves merely as material, physical beings, responding to material exigencies and physical circumstances, and coming to know the world only through their physical senses and reasoning. This majority view themselves as spiritual beings, with the soul, the intellect, and the mind constituting the very basic essence of their life and being. In this view, then, the physical body and its physical apparatus (including the brain and its nervous and sensory systems) constitute the spiritual essence’s crucial embodiment for the physical manifestation of the outputs of the non-physical, essentially spiritual activities of the soul, the intellect, and the mind. *Intuition, revelation, and non-physical vision* then become a significant channel for instant knowing and comprehensive understanding. Thus, this great majority of the world population is as much concerned with spiritual and moral wellness as with material wellbeing [3].

The scientist, in consequence, neglects this visionary, revelatory, and intuitive source of knowing and understanding at his own peril. Indeed, one can state almost categorically that what singularly defines the human experience is this transcendental component of the gathering

mechanism for human knowledge and wisdom. It is what unlocks the creative capacities within human consciousness and, therefore, undergirds human self-dignity [4].

The apparent dichotomy between the rational (mostly science) and the sacred (largely spirit), and between reason and faith, is artificial. Reason and faith are complementary tools: they enable society to apprehend truth – a more comprehensive, all-dimensional truth. Science and spirit mobilize, into their own particular sectoral operations, both reason and faith. What the human world now needs is a new complementarity in human knowledge and in the perpetual search for truth and wisdom – an innovative new synthesis that draws upon both the scientific method for knowing and understanding and the explicit acknowledgment of instantaneously knowing and understanding accomplished by way of intuition, revelation, and non-physical vision as we design our experiments and scientific observations, or as we explore the underlying purposes in our lives and in our society. The contemporary dominance of a material-centered worldview is an impoverished view of a more abundant holistic reality, which encompasses the spiritual and the transcendent as well.

The operations of science are predicated on predicted observation, induction, the elaboration of a hypothesis, the employment of reasoning, and the testing of predictions based on the hypothesis. These same elements are also present in the operations of spirituality, except they operate in different configurations and at a different level of rigour. On the other hand, science too is built on elements of faith, especially faith in the regular order of nature, and the capability of the human mind to explain the workings of this natural order – even if that order is self-organizing. Consequently, science and spirit are truly complementary sources of knowledge and understanding – and both need to be interrogated for a more wholesome, comprehensive corpus of knowledge and wisdom.

The question arises as to how we can manage and make sense out of the estimated 60,000 thoughts that we experience each normal day of our lives.

The Nature of Silence

When one turns from the external world of a myriad sensory inputs arising from the entire sensory apparatus comprising sight, hearing, smelling, tasting, and feeling, and the equally myriad brain functions of managing and manipulating these enormous sensory inputs every millisecond of our being alive and awake, and instead turns inward into our

own psyche, one then opens up the mind space of inner thoughts and human consciousness. This is a different realm, an often unused dimension – an inner space for silence and contemplation – which can only be attained by totally quietening down the outer tumult of sensory inputs, and their receipt and manipulation by the brain. This inner quietitude, this silence of the mind, is the opening key to the soul, and its connectedness to God.

The attainment of deep silence in our inner being requires a great deal of practice. But when accomplished, it opens up a whole new dimension to one's being – that of our foundational transcendental nature, that of being at peace with ourselves, and that of knowing that our true power and wisdom comes, at its most basic, from our soul-ness. Indeed, the capacity to introspect is the hallmark of human consciousness – and therefore of the most primary element of human nature. It is in this light that reconnecting science to this capacity to introspect – this deep silence which is the fundamental result of conscious introspection – becomes our responsibility as scientists, to evoke in order to be transcendently powerful in our day-to-day work as scientists. It has been the selfsame message of many spiritual teachers across the millennia, as Jesus encapsulated this message of power so dramatically in these words [5]:

Then Jesus told him [the congenitally blind man he had just healed], 'I have come into the world to give sight to those who are spiritually blind and to show those who think they see that they are blind'. The Pharisees who were standing there asked, 'Are you saying we are blind?' 'If you were blind, you would not be guilty', Jesus replied. 'But your guilt remains because you claim to know what you are doing'.

This inner spiritual authority, this deep silence, provides the accomplished introspector with the power for decision-making and self-knowledge, because of its direct connectedness to God. The introspector no longer has to rely solely on the externally-sourced information derived from the sensory panoply. It is no wonder that when the famous nineteenth-century physicist of electromagnetism fame, James Clerk Maxwell, lay in bed in Scotland terminally ill in 1879, the Reverend Professor E.J.E. Hort who went to see him quoted Maxwell as making this profound statement [6].

What is done by what I call myself is, I feel, done by something greater than myself in me.

Maxwell had 'constructed major bridges to the future, but could only speculate about the nature of the land that lay beyond' – and he knew it and savoured it in his death-bed statement [6].

Or savour this legend of the genre of evening camp-fires, about Friedrich August von Kekule, a German chemist who in 1805 was puzzling over the structure of a newly discovered compound which contained six carbon atoms and six hydrogen atoms in a manner that it still respected the conventional rules of chemical bonding. The answer, so the story goes, came in a dream, as he was dozing in front of the fire. He saw a vision, of two intertwined serpents biting each other's tails. He promptly awoke; and realized that the novel molecule – what later became known as *benzene* – was a hexagon, with alternating single and double bonds. It is this quality silence, of being alone with one's inner space of spirit, that often leads to leaps of imagination, of innovation, and of discovery. Giant steps in scientific advancement are so replete with these stories of vision, of revelation, of intuition, that the scientific community must now transparently take it as a faithful way of leading to truth, to knowledge, and to wisdom – but by further subjecting such flashes of genius to experimentation and rationalization.

Our manifest problems are within – the way we have neglected the mind and the intellect, and the way we have forgotten that our fundamental selves are in reality constituted in the soul. All of these three entities (soul, intellect, and mind) are singular; and they are what characterizes human uniqueness in the universe. Our theories of evolution and genetic inheritance deal with the physical body; they have not as yet confronted the living reality of the mind, the intellect, and the soul – because we have not yet conceived how to scientifically study the spiritual, transcendental essences of our existence and life. The physical study of the body, and the heart, and the brain – the speculation and thorough investigation of which has occupied human attention for the last 6,000 years or so – is the easy part of our coming to know the physical part of ourselves. The hard part should now be the next stage of knowing ourselves – the understanding of the mind, the intellect, and the soul – all devoid of physical reality, and without a physical locus. How to make a study of these non-physical realities is a major question to settle first. But what is abundantly clear is that the conventional scientific methodology will not do it. For a start, it is impossible to be an objective observer of the three essences outside of our own mind, intellect, and soul: self-examination and self-observation will necessary be part of the study platform. A second concern is whether to sever, for the sake of research, the overarching connectedness of the three essences with the three homologues in other human beings, and the three essences' connectedness with God.

And, third, there is the concern of whether we can fashion a reference point – a sort of benchmark – for this study, or whether we are looking for another special relativity in the investigation of these transcendental elements. These are all momentous uncertainties; and we need to settle them, as we seek deeper into understanding ourselves, our innate connectedness with ourselves, and our relationship with the springwell of knowledge and wisdom.

We are currently wallowing in the Information Age, fueled by the incredible advances in digital information and communication technologies, as well as the epochal progress in bioinformatics through the unraveling of the human genome and its impact on the unraveling of the genetic information written into the genomes of other living non-human beings. But when we start to engage in the serious study of the three transcendental elements of humanness, employing new tools well beyond the 400-year-old scientific methodology, then we will truly be knocking on the door of a new epoch – *the Age of the Mind*. We will thus be transiting well outside the contemporary Information Age, and other earlier Ages (Agrarian, Industrial, Electronic) which were all dominated by the overwhelming reality of materiality and physicality. Then, human beings can truly characterize themselves as not what we are physically, but in what we think, what we imagine, and what we create.

Thought is central to the concept of culture. Frantz Fanon in his book, *The Wretched of the Earth*, has said it very well, avoiding to make a national culture congruent with a national folklore [7]:

A national culture is the whole body of efforts made by a people in the sphere of thought to describe, justify and praise the action through which that people has created itself and keeps itself in existence. (Page 88).

The scientific practitioners cannot continue to artificially keep science and spirit separate in opposing domains. The search for the knowledge and understanding of nature, including the universe, must now reach beyond the physical reality into the transcendental reality, by adopting a new path that goes outside the strictly conventional scientific methodology. The scientific methodology has served us extraordinarily well in the last three centuries; but it is now beginning to stultify itself into a dogma.

This search for a novel methodology is a daunting assignment. We, daring scientists, can only say with the Reverend Martin Luther King, 'I have a dream...'

FURTHER READING

1. Drucker, P. (2001) 'The next society'. *The Economist* 361 (8246): 3-5.
2. Center for Science, Policy, and Outcomes (2002) 'Living with the genie: Friction and fulmination'. *Static* 1(1): 3.
3. Cooperrider, C. and F.J. Barrett (2002) 'An exploration of the spiritual heart of human science enquiry'. *Reflections* (The SoL Journal) 3 (3): 56-62.
4. Institute for Studies in Global Prosperity (2000) 'Science, religion and development: Some initial considerations'. *One Country* 12 (3): 2-3, 15.
5. The Catholic Living Bible (1976) John 9:39-41. Wheaton, Illinois, USA: Tyndale House Publishers, Inc.
6. Seitz, Z.F. (2001) James Clerk Maxwell (1831-1879); Member of APS 1875. *Proc. Amer. Philos. Society* 145 (1): 1-44.
7. Fanon, F. (1978) *The Wretched of The Earth*. London: Penguin Books.

DISCUSSION ON THE PAPER BY ODHIAMBO

LÉNA: I just have one question for you. Could you give one example of any field of science where you would imagine this change that you are proposing?

ODHIAMBO: As far as my immediate concerns are involved, one is what is life. We as biologists are studying living things. We are not really studying life. We don't know what life is. I think that we have to characterise what we really mean by life, that's one. Another is, I think, quantum mechanics, that whole field is where you can really begin to have an interface between the physicality of what we normally observe and talk about as scientists and the essences that I've been talking about. But there may be many more, and I am willing to discuss them.