J. Natn.Sci.Foundation Sri Lanka 2005 33(1): 55

BOOK REVIEW

විද්‍යා කතන්දර (SCIENCE STORIES) by NALIN DE SILVA (2003)

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"Does science discover theories which mirror a 'real world' or does it construct its own theories", is the fundamental question underlying this provocative book about modern science. Nalin takes a well known theory in physics to weave a convincing answer. Isaac Newton, the 17th century English scientist said that apples fall to the ground due to an unseen force called gravity. The earth's motion round the sun, the planets, in effect all motion in the Cosmos could be explained with this simple force termed gravity and the inverse square law governing the action of this force. Does a force called gravity exist out there and was Newton its intrepid discoverer? Or is it a construction (story) of Newton's mind?

Albert Einstein, as Nalin points out, developed a theory of General Relativity (1915) which did away with the need for gravity, and matter moved in space-time curves. Does gravity exist or Space-time exist are moot questions. What one can definitely say is that one is a construction of the mind of Newton, the other of Einstein, albeit with long historical roots. We could therefore call them 'stories' or narratives (stories with histories) in physics.

Nalin's book, although deep in philosophy, is highly readable, provocative and interesting. The titles of his 38 chapters are well chosen, for example the chapter on inertia, he titles as the 'laziness of objects' (වස්තුවක අලසකම්) or the 'Ghost of Ether' (ඊතර් භොල්මන). He situates his critique of the usual claims of science in Buddhist philosophy and shows how a deeper understanding of science (at least physics) could be reached. The sophistication is subtle but important, as he examines whether 'Time' is a construction of change (අනිත්‍ය) or change (අනිත්‍ය) occurs in 'Time'. The first (අනිත්‍ය) is a Buddhist and Einsteinian concept, and the second (අනිත්‍ය) is Newtonian and in his view, Western with Judeo-Christian roots.

All examples in his book are taken from physics, but it would have a wider readership if he had taken examples from the other sciences as well; Bio-science as a case in point. The language used in typical Nalin's style is strong, and may put off sensitive readership, although the points he makes are valid.

If one cannot determine a theory's value with respect to an ultimately 'real' world, how can one determine a good theory from a worse one? Or are we to be submerged in an ocean of relativity? In my own reckoning, one can assign a theory value by its predictive ability; Einstein's relativity can predict better than Newton's gravity at least in the macro world. There are whole fields of knowledge in science, with little or no predictive ability and hence little more than mere conjectures. Darwinian Evolution, and the plate tectonic theory in Geology are examples. As Nalin rightly points out, we should view modern science as a foreign knowledge system, and in my opinion distinguish conjectures from theories with predictive value. There are domains within which useful theories should have predictive value, and not merely provide explanations of what has been. Secondly a 'better' theory, should be more economical to the one it succeeds. Copernicus and his Sun centred motions are not truer than the theory of epicyclic motion of the planets with the earth as centre, but simply, more economical as Ernst Mach pointed out. Theory distinction is not an easy task, but I hope that Nalin de Silva embarks on such a journey and examines this important 'thing' called science with a wider lens in perhaps a sequel to විද්‍යා කතන්දර.

Finally may I point out that it is more important to be aware of the limits of knowledge, that fine boundary where knowledge ends and ignorance begins, than adopt an arrogance of universalism; which science does today.

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