Osman Bakar. *Tawhid And Science: Islamic Perspectives On Religion And Science* (2nd Edition). Kuala Lumpur: Arah Publications, 2008

The often touted statement of the immense contribution of Islam to world civilization, especially in the area of science and mathematics, is sometimes ignored by many because it is an achievement of the too distant past and is too remote to produce any measurable excitement in those who live in the present. In some instances, a constant reminder of an antiquated truth, even a factual one, produces a quaint response in people who do not place too much stock in the past. Familiarity breeds contempt, and repetition indifference. Yet, those who do speak of the glory days of Islam today sometimes cannot themselves enumerate specifically what Muslims had attained in history and fall back on general statements that sound like fantastic claims from unverifiable sources rather than substantive facts. However, Professor Emeritus Dr. Osman Bakar supplements the veracity of the assertions of Muslims with evidence in his book, *Tawhid and Science*, and also provides cogent arguments on the motivation that brought success in the past.

The first edition of this book was published nearly two decades ago. The new release has, in addition to the original, an extensive bibliography, two reviews of the old edition, an appendix which has been turned into a chapter and a brilliant introduction that discusses development of the subject since the book was written. The book, which contains 12 chapters that are of varying intensity of thought, holds the position that all exploits engaged in by Muslim greats of the

past were initiated to proving the Unity of God (*Tawhid*). To Professor Osman, this was the central, unequivocal motivating force for all quests in Islam, academic or otherwise, that is, to illustrate the Oneness of God. Through the revelation of findings the existence of God is continually established, unabated, in the psyche of Muslims.

One of the most important discussions in the book centers on the justification for using the term Islamic science, the importance and necessity of its usage, which are, mainly singular in purpose, to show the Unity of God. All that nature offers amplifies this Unity. All that is is from God, and all that is manifests Him. The macrocosmic reality of the universe to its microcosmic representation within man affirm and confirm this truth. With this Professor Osman validates Islamic science, the precursor to modern science. However, unlike Islamic science, modern science has diverted from the Islamic motivation for enquiry and removed God from the equation. Since science was God-centered in Islam, the question of ethics and the purpose of science were paramount in past dealings. In the same light, similar considerations are made today by Muslim scientists in the tradition of an engrained past. Modern secular scientists make such considerations purportedly on moral, ethical grounds that are devoid of religious influence, though it is more than likely, it is the result of vestigeal remains that must stem from a similar root. The necessity for discussions on the permissibility of research is evident because the consequences of unfettered developments in "genetic engineering, technologies used to produce weapons of mass destruction and food and medical technology" can only be checked by strong moral guidelines.

We see Professor Osman's concern on these issues in the development of the chapters in this book on the subject of the philosophy of medicine and bioethics and technology. The author discusses the philosophy through the areas of "epistemology, metaphysics, theology, cosmology, psychology and eschatology," all of which "have a very important role to play in any intellectual project to formulate conceptual relationships between science and Islam" because "Islam look[s] upon knowledge as the central means to salvation of the soul and to the attainment of human happiness and

prosperity in this life as well as in the hereafter." Beneficial knowledge that helps attain this state is what we are to pursue.

Of the two reviews included in the book, Professor Reza-Shah Kazemi's is superior because he appears to have studied the content more closely and seems to have understood it better. His comments and observation are more precise and hence more insightful. His commentary on Islamic science is more apt, his elaboration of Professor Osman's central argument of the Oneness of God and Truth on the mark. The role of intuition in the process of discovery and enlightenment has been accorded a higher degree and an appropriate standing, its validity established with the road to knowledge of al-Tusi's model of planetary motion and Ibn Sina's theory of impetus. Though Kazemi may be criticized for providing just a summary of the book, his clear distillation of Professor Osman's ideas is nevertheless highly valuable.

In the sometimes excessive criticism and imprecise critical analysis of Professor Winkel, he presents Professor Osman's position as an idealistic yearning brought about by an unreasonable desire to portray the works of great Muslims as unreservedly noble pursuits to link God to their discoveries. They are too numerous to discuss here. His suggestions as to what the learned professor should have covered appear as criticisms rather than suggestions. In one place he says that "it is inconceivable that certain kinds of scientific experimentation could ever be done under a tawhidic framework," though Professor Osman's thesis clearly advocates the universal and not the particular. The *tawhidic* approach to science is a state of mind born out of faith; it is an inner compass that is to keep a person from straying or attributing to Nature that which should be attributed to God, for instance, the erronoeous belief that evolution is the logical explanation for existence and is exclusionary of a Creator. Hence, any finding that dismisses God based on scientific reason is suspect and must be dismissed as unreasonable and ludicrous. Such is the position of a *tawhidic* approach to any science.

Faith rules and dictates conditions and values, and science, however, is not neutral or *valueless*: it is value-laden—as much good as it brings, it brings evil too—that which results from the quest for knowledge. The horrific experiments on African-Americans in Michigan

who were deliberately infected with syphillis and withheld treatment as recently as the 1970s is an apt example of state-sanctioned *value-suspended* act that can neither retain the dignity of science nor sustain the argument that it is neutral. The possibilities of genetic engineering in its various forms and stem cell research adumbrate a great future and a terrifying one at the same time. Natural occurring mutations threaten to annihilate life as we know it on this planet: cancer, HIV-AIDS, Ebola, and a host of other gruesome diseases may be cured with the knowledge we have of their molecular workings; yet more unthinkable horrors may be replicated by humans to cause devastation of unimaginable proportions whose results may be as catastrophic as a nuclear holocaust. Their results are permanent and irreversible. Hence, the need for the development of a *tawhidic* philosophy to censor and censure. Professor Osman says that because of the role of *tawhid* as the overseeing guiding principle, Islamic civilization was selective in its choice of elements which they inherited from Greek, Persian, Chinese and Indian sciences, that is, after weighing how certain inclusions may affect or distort the worldview of Islam. This principle was not practised exclusively by Muslims. Likewise, modern Western civilization was selective in its inheritance of Islamic science in which it "discarded the God-centred approach to knowledge."

This book is by no means easy. Though it can stand to be edited better, the content cannot be simplified through language by nature of the subjects it covers. Reading it requires a great deal of patience and demands on its readers their fullest attention. The chapters which are especially difficult are:

Chapter 1: Religious Consciousness and the Scientific Spirit in Islamic Tradition

Chapter 4: The Unity of Science and Spiritual Knowledge: the Islamic Experience

Chapter 5: The Atomistic Conception of Nature in Asha'rite Theology

Chapter 7: The Influence of Islamic Science on Medieval Christian Conceptions of Nature

Chapter 8: Umar Khayyam's Criticism of Euclid's Theory of Parallels

The brilliance of Professor Osman is in the exhibition of his knowledge of philosophy, history, and science. He flows through the complexity of arguments with ease and comfort, demonstrating his mastery of the subjects. His familiarity with mathematics (since he was an Honours graduate from the University of London) gives him a distinct advantage over many. This is a challenging work that commands a grasp of an abundant knowledge of philosophy and its affiliated areas to be truly understood—a book written by a home-grown genius which bends and strains one's intellectual acumen.

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