

On a Lighter Note

SCIENCE, SCIENTISM, AND THE LIBERAL ARTS

In much of the developing world today, particularly among countries populated by Muslim majorities, a dreadful ideological disease has erupted, spreading as an epidemic through several generations already. Arising out of presumptuousness, if not arrogance, as well as historical privation, if not cultivated ignorance, this is the disease of the conflation of science with scientism, a conflation that corrodes the faculty of imagination and critical thought of the inflicted, and eats up that very cultural space which provides for the free expression of ideas. The result is a fateful irony: the ostensible cry of scientism is “more science”! But scientism kills science! What is left is an ocean of electronic gadgetry, NMR machines, laboratories, technicians, computer programmers and a young generation with no cultural bearings, no cultural anchorage and a future utterly contingent upon the fluctuations of market forces: now rising, now falling.

What is scientism? It is an excessive faith in the power of scientific techniques, and in the applicability of these techniques to *all else*—to human behavior, to ethics, to society, to religion, to culture, to everything. Upon closer analysis, it would appear that scientism is made up of two sub-malignancies, one political, the other logical. Politically, scientism functions as an ideology of arrogance which places the scientist (correction: in the case of much of today’s Muslim world, one should rather say, “the applied scientist”; even better: “the technician”) upon a pedestal, thereby intimidating the common citizen who is dazzled, puzzled, and often dislocated by technology. The impression given is that

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the scientist has the solution to all problems; he knows what ordinary mortals can never even aspire to know. This sub-malignancy plays havoc with common peoples' eyesight and maneuvers to have huge funds diverted from the exchequer to the "scientists." It is this impaired vision that causes parents to throw their bright children into the factories that produce technicians by the hundreds every day—in the Muslim world by and large these factories are often called universities and institutes of learning.

The logical sub-malignancy, on the other hand, consists of a reductionism. The reductionism that *all* human knowledge is reducible to the methods of the natural sciences. So ultimately, all disciplines disappear into physics or biology or their sisters. This creates a milieu which undermines all disciplines of learning except the natural sciences. It also creates an epistemological hierarchy wherein the "lower" disciplines, such as literature or history, have absolutely nothing to contribute to science, whereas science has *everything* to contribute to them. No wonder that in much of the world of Muslim peoples today there is a trend of rapid depletion of the liberal arts from the curricula of colleges and universities, often to the limits of total extinction.

The political element of the disease spreads through the carrier of obfuscation, the obfuscation being one which darkens the distinction between science and technology. In a country like Pakistan, to take one typical example, science *is* technology for the general populace, including science teachers. Indeed, in the past decade or so there has been a mushrooming growth in that country of what are called universities or institutes of engineering and technology, and of computer software and programming, and, of course, of information technology (the magical "IT"). They exist in every nook and corner of the country—in purpose-built locations, in converted residential houses, in shopping malls. And in official government reports all of these masquerade as providing "science education." Note the historical emptiness here: there is no awareness and no recognition of the historical fact that technology can exist without science, and that science is not duty-bound to issue technological products; that the first one is inextricably meshed up with market forces while the second lies in the realm of creative and critical human thought and intellectually controlled imagination. Once in response to a student's insistent question in Karachi—"But Sir, what is the practical application of your theory?"—the pestered Nobel Laureate Abdus Salam had said, "None, my dear young man, none!" I was there myself.

The obfuscation also darkens the fact, otherwise a glaring fact, that with rare exceptions these universities and institutes are not at all involved in any fundamental “cutting edge” research. When I dubbed them “factories” above, I hardly exaggerated—for these are workshops of matter-of-fact instruction; vocational, career oriented, and market subservient instruction. Notwithstanding the very few possible counter examples, these are personnel-supplying camps, entirely governed by the contingencies of market forces. But, surely, this is not education. Let us note that education is the burden of emancipating and nurturing the faculties of critical reflection, imagination and creativity, and the provision of a cultural space for free intellectual inquiry. No, the aim of education cannot be the production of young individuals who do no more than fill in the slots created by certain technology-driven market currents. Here we have the affliction that stifles and stalls the thought process of young people. The result is that the population of “technically-trained” (an expression that is considered synonymous with “scientifically-trained”) people in the Muslim world is progressively swelling up while the young intelligentsia is shrinking vanishingly.

When one speaks like this, an objection is raised by the scientism-infected camps. They say, “All this is philosophy, but we are concerned with science”! And yet they are really concerned with scientism, the ideological disease; for these camps, science grows in laboratories and creates light bulbs and fluorescent tubes. A clear answer to their objection is to be found in what I have to say later in a historical vein. Here let me only address a pragmatic point. The infected camps promulgate a fallacy that young men and women trained in history or literature or philosophy or other liberal arts have no career prospects; they are doomed to become a burden on the “productive” members of the society. This is certainly not the case. In Pakistan, for example, the growing body of print media is desperate for young people who are able to construct correct English or Urdu sentences. Yes, it is a glaring fact that even those who are able to write the most inelegant sentences are guaranteed a job as long as the sentences are syntactically correct. Equally glaring is the fact that the rather well-paid editors of Oxford University Press Pakistan are practically *all* women; while the country’s young men have practically *all* been confounded to “technical training” and await hopelessly for the magic of IT to render their dreams true. Then, there is the compelling case of Pakistan’s civil service that promises by far the most prestigious and the most powerful jobs imaginable—in the civil service, those trained

in the liberal arts fare much better than those trained in (applied) sciences. What is mind-boggling is the fact that the fallacy has stuck.

Returning to what I have called the logical sub-malignancy, I shall only deal with some of its gross symptoms, and in a historical rather than logical vein. More specifically, the question I am addressing is this: What have the liberal arts disciplines, such as the history of science, got to do with science? Let us begin by noting that never in human history has any civilization or culture made scientific advances *to the exclusion of* advances in all other fields of human concern, particularly in what we call the liberal arts. This recognition may shatter comforting constructs of the scientism camp, but the study of language, arts, music, poetry, history, philosophy, society, religion—these are all *relevant* to scientific development; here I speak of a *direct* relevance for which we have an enormous body of evidence.

Roshdi Rashed, an outstanding contemporary historian of Islamic scientific tradition, has amply demonstrated that, for example, Islamic *religious* disciplines (‘*ulūm* such as *kalām* or *fiqh* or Qur’ānic hermeneutics) have played a fundamental role in the development of Islam’s natural scientific tradition. These ‘*ulūm* have been crucial even in creating conditions— intellectual, cultural, and linguistic—leading to the large-scale translation of Greek works into Arabic, a phenomenon of massive importance not only in Islam but in world civilization. Recently, Rashed has shown in the case of Ibn Sīnā a “double movement” between metaphysics and mathematics, a phenomenon embodied in the exchange between combinatorial analysis and ontological doctrines. The latter involved the question of the One and the many, of God and His creation, of intellects and angels.

Let us observe that in the history of the Scientific Revolution we see Copernicuses, Galileos, Keplers, and Newtons on the one hand, but also Leonardo da Vincis, Michaelangelos, Shakespeares, John Donnes, and the likes of the architect of Saint Paul’s Cathedral, Christopher Wren, on the other. In the Islamic intellectual history, the greatest of scientists al-Kindī, Ibn al-Haytham, al-Khwārizmī, al-Bīrūnī, and Ibn Shāṭir were accompanied by “humanists” such as the great master of prosody Khalīl ibn Aḥmad, the literary giant al-Jāḥiz, the monumental historian al-Ṭabarī, the “father of sociology” Ibn Khaldūn, the superb legislator al-Shāfi‘ī and the artists and architects of the grand Mosque of Cordoba. Science does not grow in laboratories; it arises in a milieu in which there exists a cultural space for the unfettered expression of the human mind’s critical,

creative and imaginative abilities, controlled only by human intellect itself.

How ironic! If the political leaders of the Muslim world need more science, they need to limit the growth of “scientific” institutes in their country and let young people write more poetry, learn languages, study history, play music, get into the discipline of metaphysics and logic, keep their fingers on the pulse of world events, philosophize freely.... In other words, eradicate the epidemic of scientism.