

*Islam and Science
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Islam is today a purloined faith—in the East, by self-anointed prophets of intellectual intolerance and spiritual rancor, and in the West by self-appointed pundits whose poverty of knowledge about the rich and varied heritage of Islam is only matched by their eager disposition to traffic in tired clichés and bankrupt shibboleths.

Islam has been not just a faith, but many civilizations, sometimes ruled by those driven by dogma, other times by early but enlightened advocates of tolerance and pluralism. A thousand years ago, the greatest libraries in the world, and the greatest urban centers of living, the most creative advocates of Aristotle and Plato, and certainly the most accomplished astronomers of the time were found in the Islamic world—in cities like Baghdad and Nishapur, Rey and Damascus.

In Spain, a good five hundred years before the advent of the Italian Renaissance Muslims created what one scholar calls “The Ornament of the World,” an opulent culture of eclectic aesthetic, intellectual, and spiritual values, where “Muslims, Jews and Christians created a culture of tolerance” and engaged in scientific debate and inquiry. In their long days of exilic Diaspora, spanning over millennia, from Babylon and the Assyrian empire to Boston and the “New City on the Hill,” Muslim Andalusia was where Jews reached one of their three summits of cultural, Talmudic and economical accomplishments (with other summits reached in Alexandria during the early days of our common era, and Austria-German empire between 1890 to 1930.) Ironically, Islamist

radicals from North Africa, Christian armies keen on regaining the Iberian Peninsula for the Church, and finally the devastations of the plague ended that noble experiment. Today, the word Islam hardly conjures the tolerant cosmopolitanism that created the exemplar age of Islam in Europe.

Even in the heartland of Islam, the centuries from the eighth to the twelfth saw the development of scientists in every field of inquiry. Indeed, as many historians, from Goldziher and Makdisi, to Kennedy and Saliba, have argued, for almost five hundred years, it was amongst the Muslims that the natural sciences and mathematics, astronomy and physics “reached their highest state of development.” While Kharazami invented algebra, and Razi began to write treatise on the merits of experimental science, alchemists were laying some of the foundations of chemistry, and the Maraga School of astronomy had begun to criticize the Ptolemaic system.

There is something of a consensus that in the West, the works of Copernicus constituted the kernel of the scientific revolution, and that the scientific revolution itself is the core and engine of the Renaissance. But in eleventh century, the most sophisticated observatory in the world was in the city of Maragah, not far from Tabriz. Students from as far away as China and Europe traveled there to enjoy the fully endowed program of learning.

The Maragah Observatory was the best example of the Islamic system of endowment, or *vagf*, where the entire institutional expenses, from student tuitions to faculty salaries, were endowed. Moreover, as early as 1048 a Muslim scholar wrote what he called *Al Shukua Ala Batlamyus*, or *Dubitations on the Polemic system*. In those years, astronomers like Tutsi, and Biruni, Shatar Dameshgi and Shirazi, began to offer models

and equations that prefigured the Copernican model by several centuries. Scholars have in recent years found some tantalizing hints about how the work of the Maraga scientists found its way to the Vatican library and to Copernicus.

Surely like other monotheistic religions, Islam, too, has had many moments when false certitudes that are inimical to the iconoclastic spirit of scientific inquiry dominated the intellectual discourse of the land. The promise of permanence (in pillars of faith no less than in the pleasure of paradise), is surely at odds with the necessarily contingent nature of scientific cognition. But just as Savonarola or Torquemada can't define Christianity, Islam too should not just be reduced to the dogmatic intransigence of its own purveyors of false certitude.

A few years before his death, Pope John Paul II, issued an encyclical that tried to end for the church the trauma of Galileo. He tried to reconcile the dictates and demands of faith, and of Scriptural Truths, with the cognitive contingency that is the kernel of science—the belief that human knowledge is historic, temporal, and errant. The Pope argued for patience, prudence, and intellectual tolerance, when divine revealed truth seems to come into conflict with the multiplicities of truths discovered by scientists, or created by artists. We must, he said, wait for the time we can develop the wisdom to reconcile this tormenting cognitive dissonance.

Almost eight hundred years earlier, Ibn Sina, or Avicenna, as he is called in the West, and arguably one of the greatest scientists in the history of Islam, argued much along the same line, suggesting that Muslims must adapt the same posture of epistemological suspension of disbelief—they must, he said, neither reject *Qur'anic* truth, nor disallow the truths of science.

Even in the field of social and human sciences, where the cultural *Geist* is more likely to shape, or taint issues of method and narrative, the Islamic world has had singular accomplishments. Long before Vico and Herder heralded modernity's age of multi-cultural tolerance, and advocated the "belief that every nation has its own inner center of happiness," and suggested that no one must dismiss the cultural Other simply because of difference or "Otherness," Biruni, a foremost Islamic scientist visited India and wrote a treatise that covered with commendable impartiality the pluralism of faiths and rituals he found in that land.

Today, if we want to free our perceptions from the doom and dogma of prophets of intolerance and violence in the Muslim East, and from the jingoism of champions of Western cultural or religious hegemony, we must adopt the kind of humble, curious and respectful disposition about others that characterized the work of Biruni, no less than Vico and Herder.

Humanism begins with intellectual curiosity, and with an aversion to received opinions and facile stereotypes. And once we appraise History through such a humanistic prism, we will, I submit, conclude that today, the image of Islam is hijacked by cultural or political terrorists, and that Islam has a rich legacy of scientific inquiry, and has contributed much to the common heritage of humanity.