TODAY'S ZAMAN

An American reverend's faith in Turks, Islamic science revolutionizes modern medicine

by Sean Foley*

"Cotton Mather, you dog, dam [sic] you! I'll [sic] inoculate you with this; with a pox to you!"

Those were the words of the note attached to a bomb thrown into the home of Reverend Cotton Mather in the morning of Nov. 21, 1721. Undeterred by this act of terrorism, Mather continued to advocate for the use of an Ottoman medical procedure, inoculation, in which a doctor gives smallpox material to a healthy person through a cut, to combat the highly lethal disease. Mather's actions saved lives during Boston's 1721 smallpox epidemic and led to significant innovations in Western medicine. They are also a reminder of the contributions made by Muslims and Turks, in particular to the modern West. Despite his role combating Boston's smallpox epidemic in 1721 and his considerable intellectual achievements, Americans chiefly remember Cotton Mather for his unyielding defense of Puritan Christianity against all other faiths, including Islam, and his defense of the Salem Witch Trials, one of the worst miscarriages of justice in American history.

Nonetheless, Mather knew enough of the Quran to cite translations of the text in his sermons, and he lived in an era when educated Europeans viewed Islam and its civilizations with enormous respect. The English lexicographer Samuel Johnson observed: "There are two objects of curiosity, the Christian world, and the Mahometan [Muslim] world. All the rest may be considered as barbarous." The Royal Society, England's premier scientific organization in the 18th century, exemplified Johnson's views. The Society published articles in 1714 and 1716 in its journal, "Philosophical Transactions," detailing the success of inoculation in combating outbreaks of smallpox in the Ottoman Empire. That procedure had started to be used in the 1670s. It was built on Islamic contributions to medicine such as Ibn Sina's "Cannon of Medicine" and the work of Muhammad Ibn Zakariya al-Razi -- the first person to demonstrate that smallpox and measles were two different diseases.

Mather read articles from "Philosophical Transactions" with interest and wrote a fellow member of the Society that they were consistent with the experiences of

Onesimus, a Guinean slave he had once owned. While little is known about Onesimus' life, it is possible that he had been exposed to Islam: Guinea had Muslim populations in the 18th century and it is largely Muslim today. Convinced that inoculation was both safe and effective, Mather declared in 1716 that he would advocate its use during the next outbreak of smallpox in Boston. When smallpox appeared in Boston in 1721, Mather called on physicians to inoculate residents, citing the articles from "Philosophical Transactions" on the procedure. One physician, Dr. Zabdiel Boylston, responded to Mather's call, and a fierce public debate began when he inoculated his son and several others. City officials ordered Boylston to cease inoculating, while James Franklin, the brother of one of America's founding fathers, Benjamin Franklin, published scathing attacks on inoculation in his newspaper, "The New England Courant." Similar articles appeared in another newspaper, "The News-Letter."

Dr. William Douglas, the one doctor in Boston with a European medical degree, stated in "The News-Letter" that inoculation was dangerous. In his eyes, Bostonians should put their trust in experts like him to address the smallpox outbreak and not Mather and other well-meaning amateurs. He also questioned how it was possible for Mather to be a member of the Royal Society, an accusation meant to suggest that Mather was lying and that his recommendations could not be trusted. By contrast, religious opponents of inoculation argued that disease was God's way of punishing humans for sins. They asked what would happen should Bostonians oppose God's will through inoculation. Could He inflict a worse punishment? Nor could they find inoculation in the natural or divine laws of physics. Inoculation also seemingly violated biblical injunctions. One writer, John Williams, quoted Matthew 9:12 in which Jesus says, "It is not the healthy who need a doctor, but the sick." If it were possible that someone might perish from inoculation, he and others asked, didn't it violate both the Golden Rule (do unto others as you would have them do unto you) and the Sixth Commandment: Thou shalt not kill? Finally, because of its roots in the Muslim world, was inoculation suitable for Christians?

Mather challenged the assertion that inoculation was dangerous or against the will of God and Christian teachings. He stated that "experience has declared that there never was a more unfailing remedy" in human history than inoculation. He questioned the professional and personal motives of those who lobbied against such a beneficial procedure. Bostonians had to retain their faith in the gift that God had given them to combat smallpox, inoculation -- a gift of course that had come to them from Islam. Mather's argument was clear: Biblical and practical arguments justified using inoculation. Any other course of action would violate His laws and would lead to needless suffering and loss of life.

By February 1722 Boston was free of smallpox again but the debate over inoculation continued. In response, Boylston wrote “An Historical Account of the Small-pox Inoculated in New England.” In the book Boylston shows how the mortality rate from an experimental group (inoculated individuals) was seven times lower than individuals in a control group (those infected naturally). This type of statistical analysis was groundbreaking and paved the way for the type of numerical analysis used today to evaluate new medical procedures and drugs. In 1724, Boylston traveled to London, where the Royal Society made him a member, recognized the importance of his findings and published them.

During the remainder of the 18th century, death rates from smallpox declined and it was common practice, at least for elites, to have their children vaccinated. In 1798, Edward Jenner built on Boylston’s work when he pioneered a far safer form of inoculation: vaccination. Vaccination would become a cornerstone of modern public health and pave the way for the elimination of smallpox in the 20th century -- a major development in human history made possible in part by an American reverend’s faith in Turks and Islamic science -- along, of course, with his faith in the Royal Society.

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