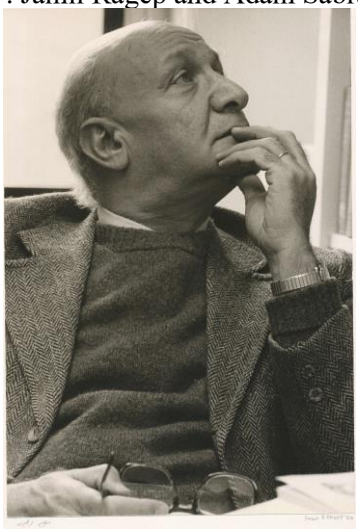
In memoriam
A. I. Sabra (1924-2013)

F. Jamil Ragep and Adam Sabra



Abdelhamid Ibrahim ("Bashi") Sabra, Professor Emeritus of the History of Arabic Science at Harvard University, passed away on December 18, 2013 in Lexington, Massachusetts after a long illness. Born on June 8, 1924 to a family of modest means in the Egyptian city of Tanta, Sabra was able to

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receive an education because he was his parents' only child to survive infancy. After attending the local Coptic school, he won a scholarship to study philosophy at the nascent Alexandria University. There he studied with scholars such as Yusuf Karam and Abu al-'Ala `Afifi. His group of college friends included the later literary critic, poet, and translator, Mohammad Mustafa Badawi, the actor Mahmoud Morsi, and the novelist Edward al-Kharrat. In 1950, the Egyptian government sent him to study at the London School of Economics, where he pursued a doctorate in Philosophy of Science under the supervision of Karl Popper, which he completed in 1955. In the same year, he married the fellow student Nancy Sutton, and they moved to Egypt where he taught at Alexandria University. In 1962, they decided to leave Egypt and Sabra took up a position at the Warburg Institute in London. Always an admirer of British society, he enjoyed the friendship of scholars such as Popper, Ernst Gombrich, Frances Yates, and D.P. Walker. In 1972, Sabra accepted an offer to join the History of Science Department at Harvard. He taught there until his retirement in 1996, serving one term as department chair. In 2005, he was awarded the George Sarton Medal for lifetime achievement by the History of Science Society. He had earlier received the Kuwait Prize, awarded by the Kuwait Foundation for the Advancement of Sciences. He is survived by his wife of fifty-eight years, Nancy, and his sons, Adam and Peter.

A.I. Sabra's publications are characterized by an elegance of style and an astuteness of content seldom encountered in the writings of historians of science. As such, his work has had an influence far beyond the specialized group working in the fields of Arabic and Islamic science.

Sabra's earliest research was on the optics of early modern European science, and indeed his first publication in 1954 managed in a page and a half of clear prose to contextualize Foucault's experiment, often held to have resulted in "driving the last nail in the coffin" of Newton's corpuscular theory of light, by providing insight into what a "crucial experiment" meant in the history of science and warning against anachronism, the latter proving to be an enduring theme in his writings. The fruits of these early years came with the publication in 1967 of his well-received *Theories of Light from Descartes to Newton*, which was a revision of his PhD thesis. The work combined rigorous historical research into seventeenth-century optical theories with an emphasis

on the relation of those theories to methodology. This synthesis of history and philosophy of science was an outgrowth of the training Sabra had received with Popper; in many ways Sabra became the most historically grounded of the "Popperians" but his philosophical training was never far below the surface of his many publications.

Though Sabra was a young professor in a philosophy department after his return to Egypt from England, his interests would take a decisive turn away from both philosophy of science and early modern European science. Most colleagues and acquaintances assumed that his turn to science in medieval Islam was somehow "natural," but in fact it was a decision made reluctantly and with some regret. There was much left undone in seventeenth-century optics, his excellent book notwithstanding, and he had intended to extend his research as far as the nineteenth century. But Sabra's meetings with the Egyptian physicist Mustafa Nazif, who had written a remarkable work on the optics of Ibn al-Haytham (Alhazen; d. ca. 1040), convinced him that there was much to be done on the history of Arabic/Islamic science. And after his return to England, his colleagues at the Warburg Institute, especially Frances Yates and D.P. Walker, urged him to use his linguistic talents on the understudied scientific traditions of medieval Islam. This he had already begun while in Egypt, having published articles related to "proofs" of Euclid's parallels postulate. And once he left England for America and assumed his professorship at Harvard, Sabra would confine his published work to the history of Arabic/Islamic science.

As mentioned, publications related to Euclid's fifth postulate began to appear when Sabra was teaching in Alexandria, and this work continued at the Warburg with noteworthy publications on Thābit ibn Qurra and Simplicius that substantially added to our understanding of what can be called the history of "non-Euclidean" geometry. Though he published relatively little on the subject, Sabra had a special affection for logic; his 1980 article, "Avicenna on the Subject Matter of Logic," is required reading for anyone interested in the epistemological status of logic among Islamic philosophers.

Sabra was initially drawn to the study of astronomy through his edition (with Nabil Shehaby) of Ibn al-Haytham's *Doubts (*or *Aporiae) Against Ptolemy*. Though the primary motivation was no doubt the section of the work devoted to Ptolemy's *Optics*, Sabra would publish a number of articles

related, either directly or indirectly, to the section of the work that criticized Ptolemy for failing to provide appropriate physical bodies for celestial motions and for violations of the accepted celestial physics that demanded uniform, circular motion in the heavens. In part, this turn to research on astronomy was influenced by the discovery by E.S. Kennedy and Otto Neugebauer that some of the alternative models inspired by Ibn al-Haytham's criticisms were to play an important role in the work of Copernicus. But Sabra, ever vigilant against "precursoritis," warned against taking this tradition out of its own context and seeing it only in terms of later European astronomy, a point he would make in his 1998 review article "Configuring the Universe." Another strand of this Islamic critique of Ptolemy was taken up in "The Andalusian Revolt Against Ptolemaic Astronomy," a work that had important implications not only for contrasting eastern and western Islamic approaches to Ptolemy but also for raising important issues about the intellectual movement characterizing 12th-c. Islamic Spain.

An interesting aspect of Sabra's research was his long-standing interest in *kalām*, roughly speaking Islamic theology, but, as Sabra often emphasized, a discipline that included far more than religious apologetics. One aspect that particularly intrigued him was the development of a novel physics, characterized imprecisely as atomistic, a subject to which he returned late in his career. He was also interested in the process by which Hellenistic philosophy and science came to be "naturalized" within later *kalām,* the subject of his "Science and Philosophy in Medieval Islamic Theology," a work that has proved groundbreaking for subsequent work on the subject.

Sabra's work in optics—his published editions (Books I-V) and translations (Books I-III; Books IV-V completed but as yet unpublished) of Ibn al-Haytham's *Kitāb al-Manāẓir*, as well as his many articles on the subject—stand as testimony to his monumental erudition. It would be difficult to overstate the clarity, insight, and careful scholarship displayed not only in his papers but also in his meticulous editorial work, his accurate translations, and his expansive commentaries. Among Sabra's many accomplishments, we can say that he made clear that Ibn al-Haytham's work in optics represented a revolutionary departure from previous work, while at the same time emphasizing that he was Ibn al-Haytham and not Kepler or Newton. Sadly his long illness and death have deprived us of the completion of this project, but

we can at least take solace in the part of the endeavor that was brought to fruition, which represents a substantial portion of the whole.

Sabra's importance to the field, not only Arabic/Islamic science but more generally history of science and intellectual history, should be noted. In Alexandria, Sabra introduced Arabic readers to a number of important works through his translations, among others, of Popper's *The Poverty of Historicism* and Jan Lukasiewicz's *Aristotle's Syllogistic, from the Point of View of Modern Formal Logic.* He would later produce a critical edition of the part of Ibn Sīnā's *Shifā'* devoted to Euclidian geometry. Sabra also played an important role in bringing Islamic science into the mainstream of history of science through his editorship of the articles dealing with Arabic/Islamic subjects in the *Dictionary of Scientific Biography;* included among his own contributions was an outstanding biography of Ibn al-Haytham. Over the years, Sabra produced several overviews of science in Islam for various publications, all "user-friendly" and used countless times in undergraduate courses. The most significant of these was his magisterial essay "The Appropriation and Subsequent Naturalization of Greek Science in Medieval Islam," a work that has been influential far beyond the confines of Arabic/Islamic science (as evidenced by the subsequent burgeoning of the word "appropriation" in all kinds of publications). Sabra here made explicit a number of themes that have characterized his writings and teaching: the importance of intellectual context (but with a brief nod toward social and political context); the dangers of anachronism ("precursoritis"); the embeddedness of Hellenistic science and philosophy in Islam (naturalization as opposed to marginality); and the proactive character of transmission into Islam (appropriation). In "Situating Arabic Science: Locality versus Essence," originally delivered as the Distinguished Lecture at the 1995 History of Science Annual Meeting, Sabra returned to another of his themes, this one strongly Popperian, namely the perils of essentialism and the importance of the "local."

Sabra also influenced the field through his teaching, supervision, and mentorship. Both at the Warburg and at Harvard, he had a significant impact on a number of historians of ancient, medieval Latin, and early modern science as well as philosophers of science. And through his support and encouragement, he played a decisive role in the early careers of several

historians and philosophers of science who were not “officially” his students. At Harvard, he oversaw at least 7 PhD dissertations and played a supporting role for a number of others. His students, all of whom were to have productive careers, would carry on his research in the history of astronomy, optics, mathematics, and *kalām,* a fitting tribute to the man and his work.

F. Jamil Ragep and Adam Sabra

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1954

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1959a

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1959b

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1960b

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1965b

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1965c

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1966

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1967a

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1967b

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1969

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1970-80

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1971a

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1974

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1975b

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1975c

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1976a

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1976c

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1977a

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(English translation of the Arabic Text published in 2002. See above: 2002.) The Table of Contents and the English preface to the 2002 edition are available at: http://www.people.fas.harvard.edu/~sabra/PDF/publications05.pdf (pp. 12-14, 18-25).