

## Preface

This is essentially an essay in historiography. It critiques the current trends of the historiography of Islamic and Arabic science and attempts to make use of the latest historical findings in order to propose a new historiography that could better explain the scientific developments and, in a more general sense, the major trends in the intellectual history of Islamic civilization. It touches on periodization, on the relation of science to the general intellectual environment, on the social and political dimensions of scientific production, and on the relationship between the technical scientific details, in a particular discipline and the social support and recognition of those disciplines.

The main ideas discussed herein have already been articulated, in a preliminary manner, in my book *al-Fikr al-ʿIlmī al-ʿArabī* (Balamand University Press, Lebanon, 1998). Now they are available—more extensively developed in some major respects—to those who do not read Arabic. The main features of the thesis expressed earlier in *al-Fikr* are supported here by fuller evidence. Furthermore, the new literature that has appeared since the publication of *al-Fikr*, especially that which bears on that book's main thesis, is critiqued in this volume. This can, then, be seen as a critique of the contents of that literature, and of the conclusions reached therein. The scrutiny to which those conclusions are now subjected is necessitated by new evidence that has raised doubts about their validity.

The terms “Islamic science” and “Arabic astronomy,” used extensively in this book, call for an explanatory comment. “Islamic science,” is intended to designate those sciences that were developed in the Islamic civilization and which did not fall within the sphere of disciplines usually designated with the Arabic expression *al-ʿulūm al-islāmīya* (Islamic sciences). The latter

group usually dealt with religious Islamic thought proper and thus is not of central concern in this volume. In contrast, the “Islamic sciences” studied here were considered as part of the “foreign” or “rational” sciences (*‘ulūm al-awā’il* or *al-‘ulūm al-‘aqlīya*), or even the “philosophical” sciences (*al-‘ulūm al-falsafīya* or *al-ḥikmīya*), in classical Islamic times, and did not in any way designate the religious, juridical, exegetical, linguistic, or Qur’anic sciences that were usually separately classified as *al-‘Ulūm al-naqlīya* (the transmitted sciences). “Islamic” is therefore used in this more complex civilizational sense and not in the religious sense.

The term “Arabic” finds its justification in two major ways: First, Arabic was for a long time the scientific language of the Islamic civilization, from the eighth and ninth centuries to our own times, in much the same way as it was the language of the religious sciences as well, irrespective of the geographic area where those sciences were written or studied. These conditions, which prevailed throughout most of Islamic history, opened various avenues for people of various races and religious backgrounds to participate in the production of this civilization. Those same people may have spoken Persian, Syriac, or even later Turkish and Urdu at home. And yet they mostly expressed their intellectual production, and especially the scientific part of it, in Arabic, much as Ibn Maymūn (Maimonides) wrote most of his philosophical and medical works in Arabic while reserving Hebrew for his religious and juridical production. Second, the history of the discipline of astronomy is used in this book as a template to illustrate the periodization and the ups and downs of Islamic scientific thought in general. And the kind of astronomy that was most prevalent in the Islamic civilization, and that was also most vibrant, was the new astronomy that was called *‘ilm al-hay’a* (science of the configuration [of the world] = Astronomy), a coined Arabic phrase that had no Greek equivalent. It was this astronomy that continued to be written almost exclusively in Arabic from the ninth century on. This is also the astronomy that forms the main focus of this book. Furthermore, there were no times, throughout Islamic intellectual history, when the term “Arabic Astronomy” could have been possibly taken to mean that this astronomy was in any way restricted to the geographical domain of the Arabic-speaking regions, or that Arabic was the exclusive language of that discipline. The manner in which this term is used here simply means that Arabic was clearly the language in which most of the works in

this discipline were written, as is evidenced by the vast majority of the surviving texts.

Although this book is written in English, and may later appear in other European languages, its ultimate message may resonate differently with readers who feel a sense of kinship with the Islamic civilization, whatever their racial, national, linguistic, or religious affiliation. It is to these readers that the issues discussed here would make the most sense, irrespective of whether they would want to refer to this production as Islamic or Arabic. And to the same readers I extend the invitation to participate in the discussion that I hope this book will generate.

But I must quickly caution those readers not to read this book as an expression of the greatness of the Islamic scientific tradition, although it was indeed one of the greatest of such traditions, but to read it as an invitation to reflect on the sense of their own history, especially in these “post-colonial” and yet deeply “colonial” times for the Muslim and Arab worlds. I sincerely wish to invite such readers to consider ultimately the kind of history that could be written when one de-emphasizes the usual political and religious histories that are often narrated *ad nauseam*, and privileges instead the scientific production and the complex social, economic, and intellectual conditions that allowed that production to come into existence.

If there is a lesson to be learned here from the history of science for our modern times, and if there is any hope to learn something about the social, political, and economic mechanisms that allow scientific production to prosper, for purposes of modern development in almost all developing countries, irrespective of their religious or cultural legacies, it should be grounded in this kind of history of science that keeps an eye on the technical intricacies of scientific thought itself, and at the same time investigates the social, political, and economic mechanisms that allowed, and may still allow, this thought to flourish. This book is intended to shed light on such issues.

I now turn to the most pleasant task of acknowledging all the help I have had along the way that made this book possible. In that regard, my deepest thanks should go first and foremost to M. François Zabbal, of the Institut du Monde Arabe (Paris), for making the first expression of this book possible when he invited me to give its early contents as a series of lectures under the auspices of La Chaire de l’Institut du Monde Arabe during the spring of

2004. But of course there are many others whose names have to be withheld for fear of missing some in the midst of the multitude.

However, in the actual process of turning the contents of those early lectures into a book, I cannot but pay tribute to particular people without whose advice and encouragement this book would have never seen the light of day. Among those who made this book possible are Jed Buchwald, the editor of the Transformations series, and my colleague and friend Noel Swerdlow. The encouragement I received from those two people and the extremely valuable criticisms were incalculable, and have certainly gone a long way in saving me from many slips and errors. Whatever errors and misstatements remain are completely my own and no one else should be implicated in my folly.

A special expression of gratitude should also go to M. Alain Segonds, of the Belles Lettres, of Paris, who gave the manuscript a very thorough reading when it was still in its earliest stages, and who suggested a number of corrections that helped me greatly in sharpening the arguments. I am also indebted to my students and to the various groups of people who attended my public lectures over the years, when I first began to explore the germs of those ideas, which were not yet fully formulated, and are now further developed in this book. Those people patiently listened to what must have sounded to them like half-baked thoughts, and always pushed me to develop those ideas further in order to reach the form they have now reached.

In the same breath I also thank all those who abandoned the most beautiful Parisian spring evenings and flocked faithfully to the Institut du Monde Arabe in Paris, every Tuesday night, for six weeks in May and June of 2004, to participate in the formal presentation of the lectures upon which this book is based. Of those people, I specially thank those who raised the various challenging questions that forced me to reconsider a great number of issues and to rearticulate them much more precisely. But those questions could not have been raised had it not been for the most diligent team of simultaneous translators who rendered my unwritten English lectures into coherent French, a feat that continues to amaze me.

All those people are in no way responsible for the inevitable ambiguities that may still persist in the proposed formulation of this new Arabic scientific historiography. For the very nature of this proposal leaves it vulnerable to the experimental hazards incurred by its novelty.

I am also indebted to my friends and colleagues, both in the United States and in France, whose areas of expertise bordered very closely on the history of Arabic science, and who paid me the utmost complement by attending the lectures at IMA and by pointing out, to my benefit, the strengths and weaknesses of the arguments I made there. It is those subtle correctives that can no longer be separated from my main train of thought, nor can they be footnoted separately, that have now become part and parcel of my own convictions and, of course, inform my latest thinking on the subject. In this global sense, I thank them for those correctives. But I must single out my dear friends and colleagues: Professor Muhsin Mahdi of Harvard, who graced me with his presence at some of the lectures even when he was not feeling well, and M. Maroun Aouad, of the CNRS in Paris, for having given me the pleasure of good arguments over the years, and who has never failed to point out my follies with utmost politeness. He can obviously notice now that he has not been all that successful in curing me completely. The follies that still persist in this book can easily attest to that. But if any of the arguments I make here can make a small dent in changing peoples' thoughts about the nature of Arabic and Islamic science then all those arguments would not have been in vain, and I gladly accept the responsibility of their failure when they did.

The manuscript editor at The MIT Press was kind to listen to me and follow my instructions to "go lightly."

Last but not least, I should also thank all those wonderful people at the Kluge Center of the Library of Congress who made the production of this book possible by offering me, during my sabbatical year, a working space that I have described as the closest portal to heaven as I will ever see.