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Retrospectives: Uses of history of science in the late Ottoman Empire and early republican Turkey

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> I am a Turkish student of [the] History of Science and have been working on the subject within the last six years for the preparation of a History of Science [book] in Turkish.[1]

So wrote Adnan Adıvar (1882–1955), the first minister of health of the Turkish Republic, to George Sarton in 1932. After explaining his interest in the discipline and admiration for Sarton's work, Adıvar told Sarton about Salih Zeki, an Ottoman historian of science who wrote primarily on the history of mathematics, asking Sarton to accept two volumes of Zeki's work as a gift. In response, Sarton asked Adıvar to write an article on Salih Zeki's work for *Isis*.[2] This marked the beginning of a new friendship which would last more than three decades. Impressed by Sarton's friendship, Adıvar described his visit to Sarton at Cambridge, Massachusetts as a 'pilgrimage'.[3] Indeed, this is not the only example of Sarton inspiring a Turkish historian of science. In 1942, Aydın Sayılı became the first student to obtain a PhD degree in history of science from Harvard University under George Sarton's supervision.[4]

Last September, the Turkish government announced that 2019 would be the year of Fuat Sezgin, a prestigious Turkish historian of science who passed away in 2018. The aim of this decision was 'to enhance a better understanding of Islamic culture and Islamic civilization and to convey this heritage to the next generations as accurately as possible'.[5] This contemporary objective is in line with some of the most important roles attributed to the discipline of the history of science in the late Ottoman and early republican eras. In the second half of the nineteenth and the first half of the twentieth centuries, Turkish historians of science and Turkish science popularizers pursued a range of explicit ideological goals. According to some politicians, the history of science could be used as a tool to build up a self-confidence that seemed lacking in the newly

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1 Feza Günergun, 'Türk Bilim Tarihinin Gelişimine Tanıklık: Adnan Adıvar – George Sarton Mektuplaşması', *Osmanlı Bilimi Araştırmaları* (2006) 7(2), pp. 87–110, 90–91.

2 Günergun, op. cit. (1), p. 89.

3 George Sarton, 'Eski Bir Dostun Hatırasındaki Dr. Adnan Adıvar', in Halide Edib Adıvar (ed.), *Doktor Abdülhak Adnan Adıvar*, Istanbul: Ahmet Halit Yaşaroğlu, 1956, pp. 172–174, 174.

4 Gürol Irzık and Güven Güzeldere, 'Introductory remarks', in Irzık and Güzeldere (eds.), *Turkish Studies in the History and Philosophy of Science*, Dordrecht: Springer, 2005, pp. 1–5, 3.

5 '2019, Fuat Sezgin yılı ilan edildi', CNN Turk official website, 6 September 2018, www.cnnturk.com/turkiye/2019-fuat-sezgin-yili-ilan-edildi, accessed 28 December 2018.

established Turkish Republic. Erdal İnönü, the former prime minister of Turkey and a theoretical physicist who studied with Nobel Prize-winner Eugene Wigner after receiving his PhD from Caltech, explained how the history of science could help boost self-confidence. İnönü reminded his readers of the struggles the West had gone through for centuries and argued that if Turks studied the history of science they would not consider themselves so incompetent, seeing as the Turkish Enlightenment had only started a century ago.[6] To others, highlighting Ottoman and Muslim contributions to science would be important for tackling the orientalist claim that Islam was naturally opposed to reason and to science. This article aims to shed some light on the history of the history of science in Turkey by illustrating how various ideological concerns have shaped the field since its birth.

History of science as a weapon against orientalist claims

Turkish interest in history of science started in the late eighteenth century. The Ottoman days of glory were over. Military defeat meant the empire had to accept Western superiority in science and technology. The first works on the subject naively aimed to close this gap by introducing the history of science and technology to Turkish readers. These early studies informed Ottomans about key historical figures and developments in the West. In the late eighteenth century, the works of Descartes, Kepler and Galileo were introduced to Turkish readers to explain the 'new' theories of the West rather than to give a historical analysis of the development of science in the West.[7] On the other hand, despite acknowledging Western superiority in scientific development, early Ottoman 'historians of science' accuse *Frenk*s (Europeans) of pretending every achievement in science was in fact made by themselves, systematically ignoring Muslim contributions to science.[8]

The works published in the second half of the nineteenth century were primarily aimed at responding to the era's dominant orientalist claims, especially those concerning Islam's incompatibility with reason and science. A lecture delivered by French orientalist Ernest Renan in 1883, for instance, sparked great controversy in the Ottoman Empire, and thus motivated Muslim intellectuals to search for Muslim contributions to science. Renan argued that Islam, by its very nature, was hostile to science and as a religion it would not survive in a world dominated by science.[9] According to him, once people converted to Islam, whatever their race or nationality was, they felt themselves superior to other civilizations, including European civilizations. Hence not just science and education but anything related to *l'esprit européen* would be rejected by Muslims.[10] To

6 Erdal İnönü, 'Bilimsel Devrim ve Türkiye', *Osmanlı Bilimi Araştırmaları* (2004) 5(2), pp. 103–116, 108.

7 Hüseyin Gazi Topdemir, 'Türk Fizik-Optik Tarihi Üzerine', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 135–151, 136–140.

8 İhsan Fazlıoğlu, 'İki Ucu Müphem Bir Köprü: "Bilim" ile "Tarih" ya da "Bilim Tarihi"', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 9–27, 17.

9 Ekmeleddin İhsanoğlu, 'Modern Islam', in John Hedley Brooke and Ronald L. Numbers (eds.), *Science and Religion around the World*, Oxford: Oxford University Press, 2011, pp. 148–174, 163.

10 Ernest Renan, *L'islam et la science: Avec la réponse d'al-Afghânî*, Montpellier: L'Archange Minotaure, 2005 (first published 1883), p. 23.

prove Renan wrong, late nineteenth-century Muslim intellectuals aimed to show that Islam was not hostile to reason and to science.[11] Ahmet Midhat (1844–1912), for instance, translated John William Draper's *History of the Conflict between Religion and Science* (1874) to demonstrate that, contrary to Christianity, Islam had been welcoming to science in general and evolutionary theory in particular. This was an important book, and one of the earliest to argue for the existence of a conflict between science and religion with reference to the history of science. Yet Draper's criticisms had focused on Christianity, and in some contexts – especially in those concerning evolution – he even seemed to praise Islam.[12] Ironically, as a Muslim intellectual, Midhat translated one of the most controversial examples of the conflict thesis into Turkish explicitly to demonstrate religion's capacity to accommodate science.[13]

Indeed, there was another reason for the development of Ottoman intellectual interest in the history of science in the nineteenth century. Secular Ottoman thinkers, such as Abdullah Cevdet and Beşir Fuad, wanted to support their materialist stance with references to the Western Enlightenment experience and scientific world view. They published popular-science journals like *İçtihat* and translated several Western works on popular science and history of science into Turkish, including German materialist Ludwig Büchner's *Kraft und Stoff*.[14] Among secular intelligentsia throughout the empire, Draper's conflict thesis went almost unquestioned. Even those who did not totally embrace materialism were heavily influenced by Draper's scientific materialism.[15] One thing held in common between late Ottoman secular and Muslim intellectuals was that both valued science and used history of science to persuade Ottoman laymen of the truth of their ideological/metaphysical world views.

Ottoman intellectuals' ambition to search for Islamic contributions to science must not, however, be reduced to an attempt to defend the Islamic faith. These publications appeared in the nineteenth century just as Ottoman fears concerning colonialism reached their peak. Ottomans lost a substantial amount of territory and were anxious that more might follow. Colonial powers and those fearful of colonialism alike believed that in order to survive in a modern world, a nation had to prove its relevance to modernity. Ottoman intellectuals believed that the modern world had its own rules, and a nation that had not contributed to science, let alone having resisted it, would have no legitimate right to exist in the twentieth century.[16] Previous contributions to scientific development mattered in this sense. Considering that Ottoman scientists were largely not in a position to contribute to scientific knowledge on the world stage at this time,

11 Cemil Aydın, 'Türk Bilim Tarih Yazımında "Zihniyet", "Din" ve "Bilim" İlişkisi: Osmanlı Örneği', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 29–44, 30–31.

12 See John William Draper, *History of the Conflict between Religion and Science*, New York: D. Appleton and Company, 1874, p. 118.

13 For a more detailed analysis of this translation and commentary see M. Alper Yalcinkaya, 'Science as an ally of religion: a Muslim appropriation of "the conflict thesis"', *BJHS* (2011) 2, pp. 161–181.

14 M. Şükrü Hanioğlu, 'Blueprints for a future society: late Ottoman materialists on science, religion, and art', in Elisabeth Özdalga (ed.), *Late Ottoman Society: The Intellectual Legacy*, London: Routledge Curzon, 2005, pp. 27–116, 32–47.

15 Şerif Mardin, *Jön Türklerin Siyasî Fikirleri 1895–1908*, Istanbul: İletişim, 2014, p. 128.

16 Abdullah Cevdet, 'Kastamonu'da Kurun-i Vusta', *İctihad* (1913) 58, pp. 1271–1274, 1273.

Ottoman historians of science had a crucial role to play in underlining earlier Muslim/Turkish contributions to science which would hopefully justify Ottoman demands for survival.[17]

Early Ottoman studies in the history of science targeted different audiences and accordingly adopted different styles. Popular works, for instance, aimed at informing the Ottoman general public about Western civilization. Ebüzziya Mehmed Tevfik, Ahmed Rasim and Şemsettin Sami's works could be classified under this category. These were not in-depth studies but mainly consisted of translations of French sources on science by Turkish journalists, rarely including the Turkish authors' comments on the issue.[18] Şemsettin Sami, for example, justified this by arguing that the Muslim intellectuals' role was to inform Turkish audiences about Western civilization, which was vital 'since the survival and glory of Islam are contingent upon this alone'.[19]

Other works went beyond translating Western sources into Turkish. Ahmet Midhat's aforementioned work, which included Midhat's lengthy commentaries on Draper's original work and Namık Kemal's refutation of Renan, are some examples of this category.[20] Namık Kemal (1840–1888), in a pamphlet, challenged Renan's claim that Islam was hostile to science and philosophy by reference to an Islamic golden age and an account of Islamic contributions to Western civilization.[21] Ironically, although these works were written in response to then contemporary Western orientalist claims, they used Western orientalist literature to prove the importance of science in the Muslim tradition, instead of carrying out original research on Seljuk/Ottoman scientific works.[22] Ottomans wanted to prove themselves to the Western critics and thus believed that showing 'proof' from the Western sources concerning the existence of important scientific activity in the Muslim tradition would be more efficient and persuasive. Another reason could be the authors' intellectual inadequacy to evaluate the contribution of previous Seljuk/Ottoman scientific manuscripts to the field.[23] Although nineteenth-century Ottoman intellectuals working on history of science were more or less familiar with Western history of science, they had limited knowledge concerning the context in which Seljuks and earlier Ottomans had undertaken their scientific studies. In addition, late Ottoman intellectuals were educated in institutions that had

17 Alper Yalçınkaya, 'Din, Bilim, "Din ve Bilim": Araştırma Hatları ve Vaat ettikleri Üzerine Bir Değerlendirme', in Sanem Güvenç-Salgırlı and Vefa Saygın Öğütle (eds.), *Geç Osmanlı'dan Günümüze Modern Doğa Bilimciliği*, Istanbul: Doğu Batı, 2019, pp. 273–310, 276.

18 Remzi Demir and İnan Kalaycıoğulları, 'Osmanlılar Dönemi'nde Bilim Tarihi Yazıcılığına Genel Bir Bakış ve Ahmed Râsim'in "Terakkiyât-ı İlmiyye ve Medeniyye" Adlı Eseri', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 595–627, 596–597.

19 Şemseddin Sami Frasheri, 'Transferring the new civilization to the Islamic peoples' (tr. M. Şükrü Hanioğlu), in Charles Kurzman (ed.), *Modernist Islam, 1840–1940*, Oxford: Oxford University Press, 2002, pp. 149–151, 150.

20 Demir and Kalaycıoğulları, op. cit. (18), p. 597.

21 Doğan Gürpınar, *Ottoman/Turkish Visions of the Nation, 1860–1950*, Basingstoke: Palgrave Macmillan, 2013, p. 80.

22 Fazlıoğlu, op. cit. (8), p. 18.

23 Fazlıoğlu, op. cit. (8), pp. 18–19.

been substantially Westernized and secularized in the last century and thus were less familiar with the religious language dominant in earlier scientific studies.

The real problem with these works was that they were not systematic studies, but instead cherry-picked data to suit the story they wished to tell. Indeed, even *Athar-i Baqiya*, the first systematic, genuine contribution to the Turkish history-of-science literature, had similar goals to the earlier amateur works.[24] The author, Salih Zeki, intended to underline Muslim contributions to mathematics, specifically to the fields of trigonometry and algebra, and thus to refute the claim that Islam was hostile to scientific development. He also focused on the ways Muslim mathematicians contributed to ancient Greek knowledge and went beyond translating ancient texts.[25]

Republican Turkey and the new identity crisis

The establishment of the Turkish Republic in 1923 brought new ideological concerns. The early works written in this period intended to establish a new national identity and prove the relevance of the 'Turkish race/nation' to the world civilization. To emphasize the Turkish contributions to science, historians of science extended the scope of their studies to include pre-Ottoman and sometimes pre-Islamic contributions to scientific knowledge. Adıvar went further and saw studying the history of the natural sciences in Byzantium as a national responsibility since he believed that Ottoman science had non-Islamic sources of which Byzantium science was one.[26] In this period especially, the founding fathers' stress on the importance of creating a secular identity had a profound impact on studies in the field. Although prominent historians of science of the early republican era, such as Adnan Adıvar and Aydın Sayılı, did not explicitly hold Islam responsible for scientific underdevelopment in Muslim societies, they argued that these societies had to choose science over religion to survive in the modern world.[27]

Aydın Sayılı seems to be an ideal example of a scholar in the young republic endeavouring to use the history of science to build a national identity. He was sent to the United States by Atatürk to study history. In the early years of his studies, Sayılı grew an interest in natural sciences and decided to study history of science at Harvard University under the supervision of George Sarton.[28] The title of his thesis was 'The observatory in Islam', in which he analysed the role observatories played in Islamic civilization.[29] This thesis is in tension with Sayılı's secular world view. Yet the first republican historians of science often saw early Islamic contributions to science as part of a common Muslim heritage. Since Western science owed a debt to this heritage,

24 Aykut Kazancıgil, *Osmanlılarda Bilim ve Teknoloji*, Istanbul: Etkileşim, 2007, pp. 13–15.

25 Feza Günergun, 'İ.Ü. Bilim Tarihi'nin Kurumsallaşması: Araştırmalar ve Eğitim Programları (1984–2004)', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 545–580, 547.

26 Feza Günergun, 'Adnan Adıvar'ın Bilim Tarihi Çalışmaları: *Osmanlı Türklerinde İlim*'den Önce ve Sonra', *Osmanlı Bilimi Araştırmaları* (2006) 7(2), pp. 13–54, 38–40.

27 Aydın, op. cit. (11), p. 37–38.

28 G.A. Russell, 'Eloge: Aydin Sayili, 1913–1993,' *Isis* (1996) 87(4), pp. 672–675, 672.

29 Selami Çalışkan, 'Türkiye'de Bilim Tarihi Sahasında İlk Doktora Tezi: Aydın Sayılı "Observatory in Islam"', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 701–710.

underlining those contributions would make Muslims – and thus Turks – an integral part of world civilization.[30] In his later works, on the other hand, in line with secular republican ideology, Sayılı tried to stress Turkish contributions to the scientific endeavour and also argued that traditional Islamic culture was responsible for the underdevelopment of science and technology in the Ottoman Empire. Although he praised Islamic civilization for its contributions to the development of science in the Middle Ages and noted that Islam was not categorically hostile to scientific development, he argued that Ottomans, like many others who chose religious culture over science, were destined to lose.[31] Similarly, although Sayılı underlined the inadequacy of science as a moral compass, he named one of his books on the history of science after Atatürk's aphorism 'Science is the most truthful guide in life'.[32]

A further important work of this era was Adnan Adıvar's treatise on Ottoman science titled *Science among the Ottoman Turks*. The book was originally published in French in 1939 under the title *La science chez les turcs ottomans* and a more detailed version in Turkish was published in 1943. Adıvar's work was reviewed in *Isis* by George Sarton one year after its publication in French. Sarton found the work 'modest' and criticized it especially for not referring to the role politics had played in the nineteenth- and early twentieth-century Turkish interest in scientific discussions. Sarton questioned Adıvar's claim that he had neglected this question in his book on the ground that he believed the introduction of Western knowledge to non-Western contexts had been more or less the same everywhere, and Turkey was not an exception in this regard.[33] In the Turkish version of his book, Adıvar did not deny the importance of Sarton's criticisms but asked young historians to answer Sarton's questions in their future works.[34]

This book lacks the overt republican concerns present in Sayılı's work. This was partly due to Adıvar's personal history and the difficulties he had experienced through his political career.[35] Adıvar fought in the Turkish Independence War alongside Atatürk, and became the first minister of health of the Turkish Republic. Yet he had to leave the country in 1924 allegedly due to being part of an assassination plot against Atatürk. All these experiences might have made using the history of science for the formation of a new secular and nationalist identity for Turkish citizens less of a priority. Still, in this book, and more obviously in his later works, Adıvar championed the conflict thesis. For instance, in his *Tarih Boyunca İlim ve Din* (Science and Religion throughout History), published in 1944, Adıvar argued that religion had lost its fight against natural sciences although it still kept fighting against social sciences.[36]

30 Fazlıoğlu, op. cit. (8), pp. 17–18.

31 Aydın Sayılı, 'Ortaçağ İslam Dünyasındaki İlmi Çalışma Temposunun Ağırlaşmasının Bazı Temel Sebepleri (Avrupa ile Mukayese)', *Araştırma* (1963) 1, pp. 5–71, 7, 32; Aydın, op. cit. (11), p. 30.

32 Aydın Sayılı, *Bilim Tarihi: Hayatta En Hakiki Mürşit Bilimdir*, Istanbul: Gündoğan Yayınları, 1989, p. 16.

33 George Sarton, 'La science chez les turcs ottomans by Abdulhak Adnan', *Isis* (1940) 32(1), pp. 186–189.

34 A. Adnan Adıvar, *Osmanlı Türklerinde İlim*, 4th edn, Istanbul: Remzi Kitabevi, 1982, p. 228.

35 Günergun, op. cit. (26), p. 14.

36 A. Adnan Adıvar, *Tarih Boyunca İlim ve Din*, 4th edn, Istanbul: Remzi Kitabevi, 1987, p. 478.

Despite these works by Adıvar and Sayılı, it would be wrong to conclude that all history-of-science works of the era were shaped solely or primarily by secularist concerns. The first Turkish works on the history of medicine by Süheyl Ünver (1898–1986), for instance, were written with nationalist concerns which perceived Islam as an important artefact of Turkish culture rather than an obstacle. Ünver was a medical doctor who wanted to refute the orientalist claim that European doctors were the first to establish medical institutions in the Ottoman Empire.[37] He tried to show that medical institutions had existed in Muslim Anatolia even before the Ottomans. In a 1938 article he analysed the hospitals that had been built during the Seljuk era, in the twelfth century.[38] In another, Ünver explained the medical functions Süleymaniye Complex (Külliye) had served, starting with the mid-sixteenth century. Based on Western and Ottoman sources, Ünver also gave a detailed account of the staff and their salaries.[39] Ünver was a prolific historian who did not limit his studies to a single field of history. He studied history of astronomy in the Ottoman Empire and, as is the case with his studies in medicine, he aimed to show that Ottoman Turks were interested in natural sciences. He wrote a book on the fifteenth-century Turkish astronomer Ali Kuşçu in 1948 and another on the Istanbul Observatory in 1972.[40]

The contribution of early republican works to the discipline of the history of science in Turkey should not be underestimated. Sayılı and Adıvar published several articles in *Isis*.[41] Süheyl Ünver and Aydın Sayılı were accepted to the International Academy of the History of Science (Académie internationale d'histoire des sciences) in 1938 and 1957 respectively.[42] Besides, these figures did not only contribute to the discipline by writing scholarly articles. They were also central to the institutionalization of the discipline in Turkey. Süheyl Ünver founded the Turkish Institute for Medical History in 1933. In 1955, Aydın Sayılı established the first chair for the history of science at Ankara University. The institutionalization of the discipline of the history of science marked an important milestone as, until this point, study of the history of science had been undertaken almost entirely by non-professionals. Still, explicit ideological concerns would keep their prominence for several decades. The academics who taught at the history-of-science chair at Ankara University, for example, published books and articles that tried to prove Atatürk's cultural and educational reforms relevant. Sayılı's article titled 'Turkish as a language of science and education' ('Bilim ve Öğretim Dili Olarak Türkçe') could be considered one of these works which aimed to show how vital and

37 Günergun, op. cit. (25), p. 549.

38 Süheyl Ünver, 'Büyük Selçuklu İmparatorluğu Zamanında Vakıf Hastanelerin Bir Kısmına Dair', *Vakıflar Dergisi* (1938) 1, pp. 17–27.

39 A. Süheyl Ünver, 'Süleymaniye Külliyesi'nde Darüşşifa, Tıp Medresesi ve Darül'akakire Dair', *Vakıflar Dergisi* (1942) 2, pp. 195–207.

40 Kazancıgil, op. cit. (24), p. 33.

41 See Esin Kahya, 'Ord. Prof. Dr. Aydın Sayılı'nın Ardından,' *Ankara Üniversitesi Osmanlı Tarihi Araştırma ve Uygulama Merkezi Dergisi* (1995) 6, pp. 427–450, 445–450.

42 Feza Günergun, 'Ekmeleddin İhsanoğlu: Biyografisi, Bilim Tarihi ile İlgili Çalışmaları ve Yayınları,' *Osmanlı Bilimi Araştırmaları* (1995) 1, pp. 19–45, 22–23.

necessary the new republic's language reform was for enhancing scientific studies in Turkey.[43]

History of science in modern Turkey

Despite the growing interest in the field, history of science is relatively untouched territory compared to other fields of history in Turkey. No history-of-science courses are offered in primary and secondary education. Science textbooks include superficial knowledge on the topic and it is down to the individual lecturer to decide whether or not to dwell on historical discussions. Even in the top Turkish universities, like Istanbul Technical University and Middle Eastern Technical University, there are no compulsory courses in the curriculum for the physics, chemistry and biology majors, although those students have to take courses on the history of the Turkish Republic to graduate.[44] Boğaziçi University, on the other hand, asks physics and chemistry students to take HSS electives which include courses like history of science, history of classical physics and history of modern physics.[45] There are history-of-science departments in several universities, including prestigious ones like Istanbul and Ankara Universities. Those universities also offer graduate degrees in the history of science. Still, for many it is not a popular field of study since these graduates are seen as having limited opportunities in the job market. Thus it is seen as an intellectual endeavour to study history of science rather than a sensible investment in one's financial future.

There are non-profit organizations like the Turkish Society for History of Science (TBTK) and the Research Center for Islamic History, Art and Culture (IRCICA) that undertake national and international projects, organize symposiums and workshops and publish books on history of science.[46] The two notable museums on history of science are the Museum for the History of Science and Technology in Islam and the Gaziantep History of Islamic Science Museum.[47] As the names suggest, both museums

43 Yavuz Unat, 'A.Ü.D.T.C.F. Bilim Tarihi Anabilim Dalı', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 493–521, 501

44 'Course plans', Istanbul Technical University, Chemistry Department official website, www.kimya.itu.edu.tr/EN/course-plans, accessed 4 March 2019; 'Molecular biology & genetics program curriculum', Istanbul Technical University, departmental official website, www.sis.itu.edu.tr/tr/dersplan/plan/BIOE/201110.html, accessed 4 March 2019; 'Undergraduate program', Middle East Technical University, Chemistry Department official website, http://chem.metu.edu.tr/undergraduate, accessed 4 March 2019; 'Undergraduate curriculum', Middle East Technical University, Biology Department official website, https://catalog.metu.edu.tr/program.php?fac_prog=238, accessed 4 March 2019.

45 'Undergraduate program', Boğaziçi University, Physics Department official website, http://boun.edu.tr/tr_TR/Content/Akademik/Lisans_Katalogu/FenEdebiyat_Fakultesi/Fizik_Bolumu, accessed 4 March 2019; 'Undergraduate program', Boğaziçi University, Chemistry Department official website, http://boun.edu.tr/tr_TR/Content/Akademik/Lisans_Katalogu/FenEdebiyat_Fakultesi/Kimya_Bolumu, accessed 4 March 2019.

46 See Mustafa Kaçar, 'Türk Bilim Tarihi Kurumu (TBTK) ve Bilim Tarihi Çalışmalarındaki Yeri', *Türkiye Araştırmaları Literatür Dergisi* (2004) 2(4), pp. 581–593; 'Main functions', Research Center for Islamic History, Art and Culture (IRCICA) official website, www.ircica.org/main-functions-2, accessed 1 May 2019.

47 'İstanbul İslam Bilim ve Teknoloji Tarihi Müzesi', Museum for the History of Science and Technology in Islam official website, https://ibttm.muzeler.gov.tr, accessed 21 May 2019; 'History of Islamic Science Museum', Gaziantep Provincial Directorate of Culture and Tourism official website, https://gaziantep.ktb.gov.tr/EN-200822/history-of-islamic-science-museum.html, accessed 21 May 2019.

specialize in the history of Islamic science and especially Muslim contributions to astronomy, medicine, chemistry and physics between the ninth and seventeenth centuries. In the promotional video for the Museum for the History of Science and Technology in Islam it is stated that, with the exception of orientalists and historians like Johann Wolfgang von Goethe and Eilhard Wiedemann, Europeans intentionally disregarded Muslim contributions to Western science. This attitude has a 'detrimental effect on Muslims'. As a result Muslims forgot their civilization's contribution to science and technology, and lost their self-confidence in the face of Western claims of superiority. The museum, the video states, would 'eliminate this detrimental effect and expose Muslims' great role in the history of science and technology'.[48]

In contrast with these explicit ideological concerns expressed by the museum curators, things have substantially changed in the Turkish academy. Today, especially compared to the late Ottoman and early republican eras, overtly ideological tones in academic studies seem to be rarer and weaker, with modern historians of science preferring to study a wide range of topics for a variety of reasons.[49] Still, the public interest in history of science revolves around ideological and metaphysical concerns. Popular works discussing, and most of the time propagating, the conflict thesis still receive considerable attention. Turkish laymen seem to prefer superficial works of those such as the philosopher Cemal Yıldırım and geologist Celal Şengör over sophisticated and well-documented works written by Turkish historians of science. In a similar way, television programmes on history of science primarily focus on discussions related to the conflict thesis and are frequently designed to attract public attention by sparking a live controversy between scientists and theologians. The most popular theme in these programmes is the validity of evolutionary theory and its implications for religion.

Concluding remarks

Sarton was no doubt right in his critique of Adıvar's *La science chez les turcs ottomans*. One needs to include the role politics has played in kindling Turkish interest in scientific discussions. As this brief analysis has demonstrated, diverse ideologies and politics have been central to Turkish interest in the history of science as well. The development of the history of science in Turkey cannot be understood unless Turkish political experience, and especially the social and political traumas that Turks have gone through, are taken into consideration. The discipline has never limited itself to analysing historical figures, events and processes. Although Western history of science has not been agenda-free and was also utilized for political purposes, namely to foster a sense of Western exceptionalism and rationalism as well as to build national identities, the impact of ideological concerns in motivating historians to attend to science has been more explicit in the Turkish case.

48 'Müze Tanıtım', Museum for the History of Science and Technology in Islam official website, https://ibttm.muzeler.gov.tr/TR-238285/muze-tanitim.html, accessed 7 November 2019.

49 See, for instance, Meltem Akbaş's article on the early perception of Einstein's relativity theory in modern Turkey. Meltem Akbaş, 'Einstein'ın Görelilik Teorisini Türkiye'ye Tanıtanlar (I): Mehmet Refik Fenmen ve Kerim Erim', *Osmanlı Bilimi Araştırmaları* (2003) 4(2), pp. 29–59.