Ṭanṭāwī Jawharī and the Qurʾān

Shaykh Ṭanṭāwī Jawharī was an Egyptian exegete known for having produced a scientific interpretation of the Qurʾān. A pioneering scholar in terms of familiarising the people of his time with many previously neglected matters regarding Islam and science, his publications shocked the Cairo educational system and other Muslim places of learning in the early twentieth century.

This book examines the intersection between Ṭanṭāwī Jawharī and Egyptian history and culture, and demonstrates that his approach to science in the Qurʾān was intimately connected to his social concerns. Divided into three parts, part one contains three chapters which each introduce different aspects of Ṭanṭāwī Jawharī himself. The second part explores the main aspects of his *tafsīr*, discussing his approach to science and the Qurʾān, and how he presented Europeans in his *tafsīr*, and then addressing the impact of his *tafsīr* on wider Muslim and non-Muslim society. The third section draws attention to the themes from all 114 *sūra*s of the Qurʾān that are discussed within his commentary. It also analyses the current status of his views and the post-Jawharism perspective on science and the Qurʾān, both today and in an imaginary future, in 2154.

Providing new English translations of Ṭanṭāwī Jawharī's work, the book delivers a comprehensive assessment of this unique figure, and emphasises the distinctive nature of his reading of the Qurʾān. The book will be a valuable resource for anyone studying modern Egypt, the Qurʾān, Islam and Science, and scientific interpretation and inimitability.

Majid Daneshgar teaches Islamic Studies at the University of Otago, New Zealand. His research interests pertain to the connection between Islamic intellectual and exegetical progress in the nineteenth and early twentieth centuries as well as Malay Islamic studies. His main volumes are: *Islamic Studies Today: Essays in Honor of Andrew Rippin*, co-edited with Walid A. Saleh (Brill 2016) and *The Qurʾān in the Malay-Indonesian World: Context and Interpretation*, co-edited with Peter G. Riddell and Andrew Rippin (Routledge 2016).

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To my wife, Azar

Contents

Author's note

In the media and various scholarly works, people often refer to the subject of this book as "Ṭanṭāwī/Ṭanṭāwy" and/or "Jawharī/Gawhary," and there are several other scholars in Egypt who also have the name Ṭanṭāwī. To prevent any confusion, the name appears as "Ṭanṭāwī Jawharī" throughout.

Foreword

8 Zein el-Abedeen street,
Sayyeda Zaynab, Cairo, Egypt.

This was the address of the house in which Shaykh Ṭanṭāwī Jawharī lived. In that same house I was born. My grandfather passed away when I was only one year old, but he still had a strong presence all around the place and in my life. I grew up roaming in the very same house where he used to spend most of his time meditating and writing. I got acquainted with bits and pieces of his person, habits, stories, and anecdotes and ideas told over and over again by my mother and her sisters and brothers. His vision and ability to connect science to religion and spirituality was to me intriguing.

Like my grandfather I developed a passion for science and the more I got captivated by the subtle lucidity of science the more I felt the dire need to get a better understanding of Ṭanṭāwī Jawharī's works through which he sought to bridge the gap between mind and soul, science and religion, human advancement and spiritual growth. This was why I decided, in 2005, as director of the Center for Documentation of Cultural and Natural Heritage, CULTNAT, to set up a website for Ṭanṭāwī Jawharī (www.tantawigawhari.name.eg) where I, along with my team, tried to gather, as much as possible, his publications and books and even articles written about him.

In the early twentieth century, Shaykh Ṭanṭāwī Jawharī was internationally recognised. His works were translated and commented on by renowned oriental and occidental scholars. In addition to his vast written works, he was actively involved in the Egyptian liberation movement and was a key figure in different civic initiatives aiming at laying the foundation for a modern and enlightened Egypt. His writings reveal that Ṭanṭāwī Jawharī had a deep concern for humanity and its troubled existence. He combined his knowledge and concerns with an intricate analysis and interpretation of the Qurʾān. In addition to his production in writing, he was an active and key figure in several NGOs.

As a young scholar Ṭanṭāwī Jawharī studied at al-Azhar. His journey was interrupted when he was called back to his hometown due to his father's illness. He stayed caring for his father for three years. He became interested in walking in the fields during the day, examining the plants and trees, and watching the starry skies, planets, and constellations in the evening. Following classical thinkers, Ṭanṭāwī Jawharī noted that the number of verses in the Qurʾān that urge people to ponder the universe and the laws of nature is between 750 and 800, while those

verses directly addressing rituals are around 150. His three-year interruption or journey is largely similar to what Albert Einstein went through when he spent five years as an employee at a patents office. During these five years, Einstein was able to publish four papers and received the Nobel Prize for one of them.

Once back in Cairo, to resume his studies, Ṭanṭāwī Jawharī decided to join Dār al-ʿUlūm, the only school in Egypt at the time where different scientific disciplines, including mathematics and astronomy, among others, were taught side by side with Islamic theology and sciences. He was appointed as teacher in various high schools.

In the late nineteenth century, Egypt was occupied by the British and a robust national Egyptian movement succeeded in mobilising the people to fund the establishment of what is now known as Cairo University, Egypt's biggest University. This academic institute was the manifestation of the pronounced will of a young and vibrant Egypt to advance and grow. Very soon, Shaykh Ṭanṭāwī Jawharī was chosen to be the first Egyptian professor to teach philosophy at Cairo University. Later on, Ṭanṭāwī Jawharī's grandsons graduated from this University where I currently work as Professor of Computer Engineering.

Before teaching at Cairo University, Ṭanṭāwī Jawharī was known among his fellow national activists, scientists, and Egypt's top thinkers. He was closely connected to the Egyptian national leader Muṣṭafā Kāmil, who was the first to call him "Ḥakīm" (the wise man), and who invited him to write a series of articles for his journal, *al-Liwāʾ*. These articles were later gathered together to form his book *Nahḍat al-Umma*.

Shaykh Ṭanṭāwī Jawharī took a stand against the British occupation. As a consequence, he was prohibited from teaching at the university, and subsequently the police searched his house. After he left the university, he was posted to various schools away from Cairo before being appointed to a school in Alexandria. Meanwhile, his adherents together formed an informal university known as "the Jawharian University." He stayed in Alexandria for another three years and then went back to Cairo.

Ṭanṭāwī Jawharī paid particular attention to the significance of global order and peace in his books *Ayn al-Insān* and *Aḥlām fi'l-Siyāsa*, for which he was nominated for a Nobel Prize, although he died a few months before the nomination.

This monograph will highlight why and how a nineteenth- and twentieth-century figure tried to combine religious thinking with modern knowledge, and hopefully it would increase knowledge of twentieth-century exegetical and Islamic works in general, and Ṭanṭāwī Jawharī's *tafsīr* and its influence in particular.

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Professor of Computer Engineering at Cairo University
Founder and Emeritus Director of CULTNAT
Cairo, December 2016

Preface

Academic studies on modern Egypt and the appearance of the reform movement in the Muslim world in the late nineteenth and early twentieth centuries have gained the attention of scholars from around the world. The main foci of such studies have been the three prominent figures of Sayyid Jamāl al-Dīn [al-Afghānī/of Asʿad Ābād near Kabul][1] (d. 1897), Muḥammad ʿAbduh (d. 1905), and Rashīd Riḍā (d. 1935). While these influential scholars have each been examined to some extent, other thinkers closely connected to them, and who also made significant contributions to the modern Egyptian reform movement, have yet to receive the attention they deserve.

The current volume is an attempt to provide readers with a comprehensive assessment of a follower of Sayyid Jamāl al-Dīn and ʿAbduh, one who paid particular attention to the peaceful relationship between reason (*ʿaql*) and Islam, and to Muslim unity. This was Shaykh Ṭanṭāwī Jawharī (d. 1940), an Egyptian Qurʾān exegete whose publications shocked the Cairo educational system, including staff at al-Azhar University and other Muslim places of learning, in the early twentieth century. The printing and distribution of his Qurʾān commentary was banned throughout Arabia, and it has also been said that his strong belief in spiritualism also caused some of his works to be banned in the Dutch East Indies for a time.[2] Although many have assumed that he was not as influential as his predecessors (such as ʿAbduh), he was a pioneering scholar in the process of familiarising the people of his time with many previously neglected matters regarding Islam and science.

The main works frequently seen in his *musalsal* exegesis of the Qurʾān, which covers the whole of that Book, regard the translation of important scientific events and reports published in various Eastern and Western magazines and journals. Studies of early twentieth-century history suggest that a translation movement dedicated to bringing the results of European industrial progress to the Muslim world was steadily undertaken by Arabs. As a result of this there developed a competition of sorts between followers of European science on the one hand and supporters of the coherence of Islam and science on the other. For example, Christian Arabs such as Jurji Zaydan (d. 1914) and Shiblī Shumayyil (d. 1917) highlighted the remarkable discoveries made in the West (such as Darwinism), often without reference to Islam, in Arabic-language journals,

while early twentieth-century Islamic thinkers in general, and Ṭanṭāwī Jawharī in particular, tried to prove the truth of qurʾanic verses through reference to the translation of European intellectual and industrial discoveries, which were new to them, instead.

This was not simply a new approach to qurʾanic exegesis, but one that sought to be more informative than that of other thinkers of Ṭanṭāwī Jawharī's time, as per his wish. At the beginning of his commentary on *sūra Yūsuf* (Q 12) he presented himself as an environmentalist, displaying his passion for nature and the environment. In the early years of the twentieth century, he argued that some birds are useful and so should not be hunted to extinction. Among them he listed Abū Qirdān (the cattle egret), "a common bird of the fields,"[3] which the government protected after several years' effort by Ṭanṭāwī Jawharī and his followers.[4]

As well as such distinguished activities, he founded and directed various associations in which he also promoted the ideas expressed in his *tafsīr*. Initiating a society dedicated to spiritualism and the use of mediums in Cairo, writing a book entitled *al-Arwāḥ* ("The Spirits"), and frequent references to spiritualism and mediums in his Qurʾān commentary, are some of the more controversial ideas and practices of Ṭanṭāwī Jawharī. As a result, the audience of his *tafsīr* was sharply divided between supporters and opponents.

Studying his works suggests that his opponents' criticism did not concern him. In many ways, he had moved one step further than Muḥammad ʿAbduh. Unlike ʿAbduh, who had often written short treatises and notes, Ṭanṭāwī Jawharī presented his ideas in fully-developed volumes. His references to "the need for perpetual moral guidance of the community of believers", his refusal to unthinkingly imitate earlier writers, his highlighting of the importance of Islamic civilisation, the need for a reformed pedagogical system, and the significance of agriculture, family, and health, and his application of the ideas of Europeans such as Herbert Spencer (d. 1903), all reflect Muḥammad ʿAbduh's social and political concerns.[5] Following ʿAbduh's stress on both the spiritual and physical aspects of human beings in general, and young Muslims in particular, the final part of the current book reflects the same concerns Ṭanṭāwī Jawharī had.[6]

However, this study also demonstrates that Ṭanṭāwī Jawharī significantly developed such ideas in his *tafsīr* and in many other published books and essays, all of which are highlighted in the Appendix.

As part of the effort to explore the various aspects of Ṭanṭāwī Jawharī's ideas about Islam, the Qurʾān, and Muslims, the main purpose of this study is to highlight the way he read the Qurʾān in the early twentieth century, a time when the East and the West were separated by "science and industry," and by inattention to one (by Easterners) and full engagement with the latter (the Europeans).

This book is divided into three parts. Part I contains three chapters, which introduce different aspects of Ṭanṭāwī Jawharī himself. The first chapter considers the emergence of his thought, his identity, and the reception of his *tafsīr*, showing how the process of rational development and the inequality in the balance of power and knowledge between East and West stimulated some Muslims to produce works dealing with Islam, the Qurʾān, and science. In this chapter, readers

are also furnished with additional modern literature and scholarship on his *tafsīr*. The second chapter reflects Ṭanṭāwī Jawharī's social status and concerns, and argues that he has, until now, been seen as mainly an exegetical figure. In opposition to such an approach, it instead highlights his role as a social activist in the modern Arab world. The third chapter is an annotated English translation of an article written in German in 1916 by Martin Hartmann (d. 1918), an Arabist who studied Ṭanṭāwī Jawharī's concept of nature as it was found in three of his books. These three chapters together demonstrate that Ṭanṭāwī Jawharī's concern with stimulating Muslims to read the Qurʾān – along with beholding natural wonders – was not primarily aimed at establishing a new genre of commentary or movement in the Muslim world.

After an introduction to Ṭanṭāwī Jawharī's thought, the second part explores the main aspects of his *tafsīr*. The first chapter of Part II analyses his approach to science and the Qurʾān, and specifically whether it is an empirical approach or a broader (more general) one, as defined by earlier Islamic scholars. To do so, his perspective on various matters and their relationship with qurʾanic verses will be considered.

In line with Sayyid Jamāl al-Dīn and ʿAbduh, Ṭānṭāwī Jawharī viewed Europeans differently from the way that other, earlier Muslims did. In his opinion, Europeans were not only non-Muslim Christians, but were also political rivals, able to shape the concept of Orientalism, and scientists, with whom interactions could lead Muslims towards renaissance and reform. The second chapter of Part II shows how Ṭanṭāwī Jawharī presented Europeans in his *tafsīr*, while the final chapter in this part addresses the impact of his *tafsīr* on wider Muslim and non-Muslim society, one that can be seen as a post-Jawharism movement, and which initiated by the next generation of scholars based in the West. In this chapter, the perspective of the French physician Maurice Bucaille (d. 1998) on the Qurʾān and science is discussed and compared with that of Ṭanṭāwī Jawharī. Both (one from the East and one from the West) drew attention to variant readings of the Qurʾān. The European (Bucaille), with his empirical background, paved the way for others to establish a doctrine known as *iʿjāz ʿilmī*/*ʿilmiy* ("scientific inimitability"). This chapter also highlights the differences between an Islamic *ʿālim*'s and a European scientist's approaches to science.

Part III, "Reading the Qurʾān with Ṭanṭāwī Jawharī," draws attention to the themes and topics from all 114 *sūra*s of the Qurʾān that are discussed within the 26 volumes of Ṭanṭāwī Jawharī's commentary. This section is intended to show the distinctive nature of his early twentieth-century reading of the Qurʾān. The final section of Part III is the "Final Thought," which gives some consideration to Ṭanṭāwī Jawharī's commentary and analyses the current status of his views and the post-Jawharism perspective on science and the Qurʾān both today and in an imaginary future, in 2154. This imaginary future is based on the notion of the connectivity between the past and present.

The book ends with an Appendix, which lists all the known published and unpublished works and communications of Ṭanṭāwī Jawharī. An English translation of his article on "The Relativity Theory of Einstein" is also presented.

Notes

1 For more information on Sayyid Jamāl al-Dīn's biography see Brown's *The Persian Revolution of 1905–1909* (Cambridge, 1910), pp. 3–15.
2 A. Goldschmidt, *Biographical Dictionary of Modern Egypt* (Colorado, 2000), p. 96.
3 Yūsuf al-Shirbīnī, *Ḥazz al-Quḥūf*, ed. and trans. H. Davis (New York, 2016), p. 469.
4 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 2nd edn (Cairo, 1931), 4:2.
5 M. Elshakry, *Reading Darwin in Arabic, 1860–1950* (Chicago and London, 2013), pp. 185, 194–195, 197.
6 According to Elshakry, "ʿAbduh's own prescription for educational reform was framed within a Muslim context and emphasized the benefits of his recommendations in countering what he called the declining 'spiritual health' of Egypt. He saw teachers as Physicians of the soul," ibid., p. 194.

Acknowledgments

This monograph is the result of research that began in 2011, when I was exploring various aspects of Egyptian exegetical works and their reception beyond that country. A debt of gratitude is owed to many people for helping turn my vision into reality.

First, I am thankful to my both PhD supervisors for shedding light on the importance of modern exegetical works in the Muslim world. Professor Zulkifli fully supported my initial idea about scientific exegesis of the Qurʾān. Professor Andrew Rippin, who sadly passed away a few weeks before I wrote these acknowledgments, drew my attention to modern approaches to science in the Qurʾān with particular reference to Ṭanṭāwī Jawharī in Egypt and Maurice Bucaille in France. He kindly provided me with rare copies of non-English studies dealing with Arabic-Islamic movements in the nineteenth and twentieth century. Both Rippin's and Zulkifli's detailed comments on my thesis, as well as helpful feedback received from the thesis examiners, stimulated me to further research on various complex and obscure facets of Ṭanṭāwī Jawharī's life.

My thanks go to Professor Fathi Saleh, the grandson of Shaykh Ṭanṭāwī Jawharī, without whom I would have been unable to understand fully Ṭanṭāwī Jawharī's concerns and complete this project. This monograph also passed by the detailed eye of Dr Alex Mallett who not only improved the language but also commented on the content for which I am most grateful. I place on record my sincere thanks to Mendelin, whose initial help translating the German text in 2014 was extremely useful. I appreciate the comments of two anonymous reviewers of the monograph for providing me with helpful suggestions as to how the volume could be improved. I am also thankful to my friends and colleagues in the Department of Theology and Religion at the University of Otago, particularly Will Sweetman, Cara-Jane Smith, Katherine Rae, Emily Bisset, and Sandra Lindsay, among others, all of whom have provided me with unfailing support. I must gratefully acknowledge the assistance of Donald Kerr and Romilly Smith at University of Otago's Special Collections who provided me with access to rare manuscripts, mainly dealing with the Latin version of Arabs' medical works. The greatest gratitude goes to Koninklijke Brill NV (Brill Publishers) for granting me permission to re-publish my article entitled "An Approach to Science in the Qurʾān: Re-examination of Ṭanṭāwī

Ğawharī's Exegesis" in *Oriente moderno* 95/2 (2015) with amendments, which comprises the fourth chapter of this monograph. Chapters 2, 3, and 5 were also presented at academic symposiums in Sydney and Yogyakarta in 2015 and 2016 respectively. I also thank my medical students at the University of Otago for motivating me to elaborate the issue of religion and science.

Working with the Routledge team has been a pleasure from the beginning. I am especially grateful to Joe Whiting, Acquisitions Editor, and Emma Tyce, Editorial Assistant, for Middle East, Islamic, and Jewish Studies. I am also grateful to Professor Walid A. Saleh, the editor of the Routledge series to which this volume belongs.

Last and by no means least, I am greatly indebted to my wife and my love, Azar, who bore my absence for writing this book.

Dunedin, December 2016

Part I

Ṭanṭāwī Jawharī: His life and thoughts

أيها المسلمون: أيها المصريون: دينكم يدعو للجمال و فهم الطبيعة[1]

Ṭanṭāwī Jawharī

1 Introduction

Rational progress and the reception of a modern *tafsīr*

Curiosity about the nature of things is a trait shared by all human beings; generally speaking, a strong urge to explore is felt by all. For instance, around 6000 BC, people developed one of the oldest applied sciences, now known as metallurgy. Some of the metals discovered since then include gold (c. 6000 BC), copper (c. 4200 BC), silver (c. 4000 BC), lead (c. 3500 BC), tin (c. 1750 BC), iron and smelting (c. 1500 BC), and mercury (750 BC); they were introduced to Mesopotamians, Egyptians, Greeks and the Romans.[2] There have been other geographical movements, or "discoveries," such as the Asian migration to North America. Along the same lines, the re-discovery of Britain, the discovery of Fiji, Tonga, and Samoa by the Polynesians (c. 1300 BC), Hanno's voyage to West Africa (c. 490 BC), the Chinese (re-)discovery of the Americas (c. 458 AD), Marco Polo's visit to China (c. 1280), Ptolemy's *Geography* being taken to Italy (c. 1405), and the voyage of Zheng He (c. 1407–33) were some of the most important geographical explorations.[3] Following this, it is said that humanity passed through four major periods of discovery, namely: (a) *the great age of discovery*, from Cape Bojador (1433) to the law of falling bodies (1599); (b) *the age of enlightenment*, from Pompeii (1549) to the Rosetta Stone (1799); (c) *the nineteenth-century world*, from the atomic structure of matter (1803) to the cause of yellow fever (1900); and (d) *the modern world*, from hormones (1903) to the altar of Zeus on Mount Lykaion (2008) and other recent findings.[4]

This classification of humanist discoveries mainly focuses on discoveries made in or by Western and European communities. At the same time, the great achievements of Muslim (Arab and non-Arab), Near Eastern and Levantine-Mesopotamian polymaths like Muḥammad b. Zakariyā al-Rāzī (Rhazes) (c. 865–925), Yūḥannā b. Māsawaih (Mesue) (c. 777–857), Ibn Sīnā (Avicenna) (c. 980–1037), Ibn Rushd (Averroes) (c. 1126–1198), and Naṣīr al-Dīn al-Ṭūsī (c. 1201–1274), among others, are all but ignored. Indeed, the bond between *ʿilm*, *ḥikma*, and *state* in the brief Muʿtazilite period during the Abbasid era created a coherence between thinkers and rulers; this bond not only displayed various types of eternal philosophical-theological schools of thought – many of them a consequence of Greek philosophy – but also, in turn, influenced Western societies (encouraging them to move away from the "dark ages") through, for example, astronomical, medical, and chemical research. Thus, this transfer of knowledge between the

East and the West could be considered one reason why Europeans translated Easterners' and Muslims' works into European languages.[5] Following the triumph of Ashʿarism, however, Muslims pursued de-Hellenised and jurisprudential approaches while, at the same time, the natural-empirical theories and the investigation of scientific hypotheses in Europe continued intellectual progress there and helped bring about two principal periods, those known as *the great age of discovery* and *the age of enlightenment.* Relying on literature and history and filled with imperial and colonial urges, Europeans felt validated by their discoveries. These in turn gave them increased power and great wealth, creating some distance between them and the Orient in general, and the Muslim world in particular. The majority of Muslims were almost unable to reach the levels of wealth and power attained by Europeans, as they spent much of their time on non-scientific matters and were controlled by local religious thinkers as well as the colonial powers; the resulting economic and commercial gap was one Alexander Gerschenkron[6] has termed "backwardness."[7] This gap between the two regions (in terms of scientific progress and development) peaked in the nineteenth and early twentieth centuries following the appearance of new branches of science in the nineteenth century. Pure sciences and experimental studies in Germany, as well as practical studies in England, were the starting points for these new branches. Likewise, the way the industrial revolution helped create a connection between industry, study, and ideas was very clear in the West. Thus, the pursuit of knowledge in the West was split into scientific-technological discoveries including steel, electricity, railways, etc., on the one hand, and "middle-class" theoretical developments such as gender division and the optimism and growth of individualism, along with an articulation of middle-class values such as punctuality, discipline, and respectability, on the other.[8]

Significant development in the social sciences also took place as Wundt (1832–1920) and Comte (1798–1875) developed psychology and the theory of scientific positivism, respectively, and contributed scientific data to questions related to social issues. Subsequently, Leopold von Ranke (1795–1886) confirmed the authenticity of official documents over historical information that was based on any kind of "tradition." Intellectual theories that developed in the field of naturalism, originating in Darwinism, encompassing the biological origins of humans as well as human morality, nature and religion, were also important as they overturned previously-held ideas. These included the Freudian theory of psychoanalysis and Einstein's theory of the physical world, the latter of which partially contradicted the Newtonian world order.[9] A number of these innovations prompted further scientific discoveries, including those of Maria Mitchell and David Alter in astronomy, John Tyndall in ecology, and Hermann Schaaffhausen in anthropology and archaeology.[10] Such unstinting scientific research by Western scholars yielded yet more wealth for the people of that region; while Muslims still longed for such wealth and power, they continued to cling to the non-scientific, jurisprudential, and comparatively basic matters of *sharīʿa.*[11]

However, Western colonial officials' and scientists' projects and studies gradually made their way to the Muslim world, and particularly Egypt, whose land had been touched much earlier by the ideas of Europeans such as "Homer, Lycurgus,

Solon, and Pythagoras, and conquered by Alexander the Great." Europeans saw Egypt as the jewel of the Orient, a land which "was the focal point of the relationship between Africa and Asia, between Europe and the East, between memory and actuality."[12] It has been known as the land of mystery, the Pyramids of Giza, and the Sphinx (called by Abū l-Hawl "the Terrifying One"), whose greatness and importance had been mentioned in ancient folk tales and traditions.[13] For a long time, Egyptians shared history with the Greek community and inhabitants (Egyptiotes) of Alexandria. Thus, finding out more about Egypt resulted in them learning more about the history of power and knowledge. For example, Jean François Champollion (1790–1832), a French hieroglyph decipherer, and philologist who apparently knew the Hebrew, Arabic, Syriac, Chaldean, Chinese, Coptic, Ethiopic, Sanskrit, and Persian languages, took many Egyptian artefacts to the Louvre in Paris for conservation. In 1828 and 1829 he stayed in Egypt to conduct his initial surveys on Egyptian monuments and history, many of which had not been examined previously from a scientific perspective. Following this, the Chair of Egyptian history and archaeology was established for him at the College de France in Paris. Western scientists' efforts led French scholars to discover the Rosetta Stone, a famous ancient Egyptian granodiorite stele dating from around 196 BC, and the young Champollion translated the hieroglyphs found on it.[14] Western scientists thus approached Muslims as part of their efforts to delineate scientific boundaries, particularly those in the arts and archaeology. At that time, although European articles, magazines, and periodicals had been introduced to Islamic countries, Muslims in general were still unfamiliar with many of the scientific projects and achievements of Westerners. Moreover, Western dominance of Egypt through their scientific achievements caused Egypt to acquire a global reputation as a Muslim country incapable of competing with the achievements of the West.[15]

Western influence (especially British) in important Muslim countries such as Egypt gradually increased and, as such, "the history of Egypt, especially in the second half of the 19th century, intersects with the historical development of British colonial strategies and policy."[16]

Some European thinkers of the Enlightenment period, such as Immanuel Kant (d. 1804), Adam Smith (d. 1790), and Denis Diderot (d. 1784), "were critical of the barbarity of colonialism and challenged the idea that European had the obligation to 'civilize' the rest of the world."[17] However, opposition to Western schools of thought, European concealment of the significance of the Islamic golden age, and the publication of purely scientific works that challenged the status of religion in society was primarily voiced by Muslim thinkers and reformists such as Sayyid Jamāl al-Dīn (1833–1897). This opposition was quickly transmitted throughout Egypt and the Muslim world through his friends, acquaintances, and students, including Muḥammad ʿAbduh (1849–1905). Some of the Muslim reformists who received such messages were acquainted with both Islamic knowledge and the natural sciences, and they attempted to establish a new model of Islamic revivalism in which the Qurʾān would play a crucial role, and by which they would not have to witness the decay of Muslim communities or imitate Westerners.

Other concerns for these Muslims were the independence of Egypt (and the Arab World and its co-religionists more widely) and the preservation of their own identity and culture.

ʿAbduh himself had wanted to highlight the peaceful relationship between Islam and science. However, there had been some Muslims before him (such as Aḥmad al-Iskandarānī) who, without having any particular socio-political motive – at least before 1883 and the occupation of Egypt by Britain – were familiar with European physiological discourses and wrote various works that attempted to show the harmony between the Qurʾān and modern science.

Ṭanṭāwī Jawharī (1862–1940) was one such influential figure who produced a considerable number of works and essays on this subject (see Appendix). He was often seen talking to ordinary Muslims, and he followed the anti-British stance taken by both Sayyid Jamāl al-Dīn and ʿAbduh.[18] As the last part of this book shows, Ṭanṭāwī Jawharī also wished to highlight the possibility of co-existence between Islam (and by extension Muslims) and modern science. In one of his most important works, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, scientific remarks are placed alongside qurʾanic verses, demonstrating that Ṭanṭāwī Jawharī was an advocate or a guardian for Muslims who were, according to him, at that time living in a state of backwardness and ignorance.

A commonly-held view is that through this work, Ṭanṭāwī Jawharī promoted a new exegetical movement by establishing a novel approach to qurʾanic exegesis. However, many Muslim scholars, commentators, and thinkers did not support his methodology. Some adherents did, nevertheless, appreciate his lengthy *informative* work. Ṭanṭāwī Jawharī was one of the first early twentieth-century qurʾanic exegetes (*mufassirūn*) to receive significant criticism and praise in both the East and the West. His strong interest in scientific discoveries, as well as his method of using them in his *tafsīr* to interpret qurʾanic verses, was also a main feature of the work of this popular Egyptian Shaykh, who was highly renowned by late nineteenth- and early twentieth-century Western scholars.

Aside from Ṭanṭāwī Jawharī's personal contacts with a limited number of non-Muslims, he owed his familiarity with European scientific reports and his reputation in the West primarily to the information contained in Arab-language journals.[19] Jurji Zaydan (1861–1914), a Christian Arab who was the acting editor of *al-Hilāl*, conveyed the latest news regarding Muslim scholars and their revival movement to Western journals (and vice versa), most of which were published in France and Germany. As such, Ṭanṭāwī Jawharī's scholarly output was also on a number of occasions translated and printed in some European journals. Not only was his exegetical approach analysed; his political and social agenda was also assessed by his European contemporaries. For example, the 1909 *Revue du monde Musulman*, a well-known magazine dedicated to various issues related to Islamic countries, when referring to *al-Hilāl*, published a short review on Ṭanṭāwī Jawharī's famous book *Nahḍat al-umma wa-ḥayātuhā*, which had discussed Muslim thought critically.[20]

His exegetical method was criticised for many years because he added scientific notes to his comments on qurʾanic verses, despite lacking knowledge of the

natural sciences. After his death in 1940, Muslim scholars gradually lost interest in Ṭanṭāwī Jawharī's concerns and his approach to science and the Qurʾān, although Muslims around the world continued to follow and analyse his principal methodology (*manhaj*) of *tafsīr*.

However, a serious weakness with previous criticisms, and particularly those voiced by Muslims, of Shaykh Ṭanṭawī Jawharī's methodology is that it has been assessed only in relation to that of other qurʾanic exegetes. As a result, little attention has been paid to: (a) the aspect(s) of his life unrelated to exegesis; (b) his approach to science; (c) the purpose for which Ṭanṭāwī Jawharī wrote his commentary; and (d) other works by Ṭanṭāwī Jawharī and his social and political concerns. Also, there is no comprehensive work, to my knowledge, that addresses the themes and topics discussed in his *tafsīr* through which a reader can assess whether his interpretation constitutes a "scientific *tafsīr*" or not.

During Ṭanṭāwī Jawharī's life, his supporters showered him with praise while opponents accused him of encouraging an erroneous understanding of *tafsīr* and of the purpose of the Qurʾān. Muḥammad Ḥusayn al-Dhahabī (1915–1977) in *al-Tafsīr wa'l-Mufassirūn,* Muṣṭafā al-Ḥadīdī (1881–1945) in *Exegetical Trends of the Qurʾān in the Modern World*, Bint al-Shāṭīʾ (1913–1998) and Nidhal Guessoum (b. 1960)[21] all declared Ṭanṭāwī Jawharī's exegesis to be a scientific encyclopaedia. Some of them also agreed that Ṭanṭāwī Jawharī tended to follow Fakhr al-Dīn al-Rāzī's (1149–1209) exegetical methodology, which thus shaped his exegesis to some extent, meaning Ṭanṭāwī Jawharī offered ideas unrelated to qurʾanic phrases.[22] As such, these four Islamic scholars all based their opinion of Ṭanṭāwī Jawharī's work on the views earlier thinkers had regarding al-Rāzī's exegesis. For instance, Abū Ḥayyān al-Gharnāṭī (1256–1344) maintained that several remarks from al-Rāzī's *tafsīr* are redundant, while Ibn Taymiyya (1263–1328) said that al-Rāzī's commentary "contains everything but *tafsīr*."[23] Al-Suyūṭī (1445–1505) wrote that al-Rāzī's *tafsīr* is replete with thinkers' and philosophers' commentaries while exegetical discussion is rendered irrelevant to the verses' meanings. According to Ibn Khallīkān (1211–1282), al-Rāzī's *tafsīr* also comprises some rather odd information.[24] In 2006, the *Iranian Quran News Agency* (IQNA) published a report by one of the most renowned Iranian philosophers, Gholāmḥossein Ebrahīmī Dīnānī (b. 1934), in which he declared that scientific commentaries on the Qurʾān, such as those written by Ṭanṭāwī Jawharī, are not helpful because science reflects a changing understanding of both nature and scientific theories, any of which can be rendered invalid over time.[25]

Muḥammad Bahrāmī also disapproved of Ṭanṭāwī Jawharī's attempt to link qurʾanic phrases to scientific discoveries. The theory of *the equatorial bulge,* for example, expresses that there is a disparity between the equatorial and polar diameters, in that the areas of the Earth's poles are smaller than that of the equator. Ṭanṭāwī Jawharī found a link between this theory and verse 41 of *sūrat al-Raʿd* "See they not that We gradually reduce the land [in their control] from its outlying borders? [Where] Allah commands, there is none to put back His Command: and He is swift in calling to account." Ṭanṭāwī Jawharī asserted

that this verse was revealed to indicate particular situations found in nature, such as the changing and development of some devastated parts of the earth, or how sea coasts are expanding in certain regions but decreasing in others, or how the Earth's poles are diminishing, and so forth.[26] Bahrāmī rejected such interpretations because of the incompatibility between the context and *siyāq*, as its argument lies in the meaning behind the term "earth/soil" or *al-arḍ*,[27] as well as other scientific and grammatical arguments. Bahrāmī went on to critique Ṭanṭāwī Jawharī's opinion: "Moreover, He comprehended in His design the sky, and it had been (as) smoke: He said to it and to the earth: 'Come ye together, willingly or unwillingly.' They said: 'We do come (together), in willing obedience'" (Q 41:11). According to Ṭanṭāwī Jawharī, "sky" in this verse implies the existence of space, while "earth" represents the nature of the earth. Bahrāmī felt that this interpretation is inaccurate because the term *iʾtiyāʾ* refers back to a time many years ago when the heavenly bodies had not yet been formed. This argument of Bahrāmī resonates in the majority of the critical studies (e.g. case by case, verse by verse) undertaken by various Muslim scholars.

What is apparent today, however, is that there are, to my knowledge, fewer Muslim opponents of scientific exegetical work on the Qurʾān than there are supporters. Nevertheless, the majority of adherents have attempted to assert the equality of scientific interpretation with the scientific inimitability of the Qurʾān (*iʾjāz ʿilmī*; this will be discussed in the following chapters).

As indicated above, some European scholars of Islam contemporaneous with Ṭanṭāwī Jawharī highlighted his ideas in the West. The renowned Arabist Martin Hartmann (1851–1918) wrote a piece that attempted to investigate Ṭanṭāwī Jawharī's theological views alongside the naturalistic interests outlined in three of his works. In so doing, Hartmann was able to make his voice heard in Egypt and other Muslim societies at the time. Concerning Ṭanṭāwī Jawharī and his colleagues in the West, Hartmann stated that:

> It must also be acknowledged that all this praise for practising serious science and all the references to the achievements of the West carry little prospect for genuine progress, as genuine progress can only be achieved by sending hundreds of young Egyptians, Syrians, and Iraqis to the schools of Europe in order to acquire the solid foundations of the many areas that form the basic conditions for the prosperous and independent continuation of work. Those who have completed these foundations may then divide themselves according to their skills: some may return to their home country, others may acquire a higher level of education in the land of studies, and the best among them may acquire insights by travelling to cultured lands and by communicating with the greatest minds so that they may be appointed leaders. At the moment, men like Ṭanṭāwī Jawharī render an excellent service to their people and beyond, to [those in] other Islamic nations in which Arabic is read, by arousing the brainless masses through awakening the passion to familiarise themselves with the works of the people of the West, about which it is spoken here with respect and understanding, as usually hard to find among Arab Muslims.[28]

It was believed that Ṭanṭāwī Jawharī followed the ideas of Muḥammad ʿAbduh, and it is thus not surprising that some of ʿAbduh's friends and colleagues criticised Ṭanṭāwī Jawharī. As Elshakry says, "another of ʿAbduh's protégés, Maḥmūd Shaltūt (later the rector of al-Azhar), thought that Jawharī made the error of applying temporal knowledge to 'eternal truth' and thereby detracted from the 'true purpose of revelation.'"[29]

Although Rashīd Riḍā did not *fully* agree with Ṭanṭāwī Jawharī's scientific exegesis, he stated that Ṭanṭāwī Jawharī loved the science and technology that was the main source of industry, wealth, and authority in this period. Riḍā continued by expressing that Ṭanṭāwī Jawharī fully understood how weak and divided the Muslims were at that time, being the slaves of the powerful (Westerners) because of their own ignorance (*jahl*). Furthermore, they would not be powerful and wealthy, and thus would be unable to gain their independence, unless they learned science; only then could they protect their religious beliefs, customs, rituals, and laws.[30] Despite this, Riḍā, and later Sayyid Quṭb (1906–1966), both rejected the extraction of scientific notions from qurʾanic verses.[31]

One group of people highlighted Ṭanṭāwī Jawharī's insistence on establishing the first society of "spiritual advising" in Cairo.[32] He was extremely interested in talking about matters related to the souls, and as such his exegesis was occasionally labelled a spiritual *tafsīr* (*tafsīr rūḥī*).

Other people reproached him by asking why he claimed that "all sciences in the West are available in the Qurʾān."[33] To show the importance of reasoning Ṭanṭāwī Jawharī replied "I never indicated that Europeans' discoveries were derived or deducted from the Qurʾān, but they made these advances due to how they think . . ."[34] Other opponents asked him why he made an excessive amount of cosmological comments in his work, to which he declared that there is no benefit in the Qurʾān for unschooled Muslims unless they read and study all the sciences.[35] There were other scholars who were extremely negative about Ṭanṭāwī Jawharī's interest in presenting so many scientific accounts in his exegesis, and assumed he was trying to trick people through these stories.

Ṭanṭāwī Jawharī's exegetical works among non-Arab commentators

Ṭanṭāwī Jawharī's *tafsīr* has not been used frequently by later commentators. References to his *tafsīr* are, of course, to be found in many Islamic and non-Islamic publications, but few non-Arab exegetes of the Qurʾān have been profoundly impressed by his work(s). Among those who have, a Persian *mujtahida* (clergywoman), Sayyida Noṣrat Amīn (Bānū Amīn) (d. 1983), wrote a fifteen-volume commentary called *Makhzan al-ʿIrfān dar Tafsīr-i Qurʾān* ("The Treasure of Gnosis in the Interpretation of the Qurʾān"). Apparently, she was the only Muslim woman (*Muslima*) at that time who compiled a *musalsal* exegesis covering the whole Qurʾān, and, in explaining various verses, she frequently alluded to Ṭanṭāwī Jawharī's commentary. For instance, to express the meaning of the verse "If thou couldst see, when the wrong-doers reach the pangs of death . . ." (Q 6:93), she asserted that Shaykh Ṭanṭāwī Jawharī had a unique definition for this verse and

٢ ـ تقريظ العلامة هاشم منصور تقى زاده

من علماء تبريز (إيران)

صاحب المعالى الأستاذ الحكيم الشيخ « طنطاوى جوهرى » أدام الله أيام إفاضاته السنية بعد تقديم التحية والاحترام ، نفتخر أمام أمم العالم بأن تجلى فى عالم الإسلام حجة الإسلام الثانى (الغزالى) وقام من الشرق العربى بمصر المظهر الأكبر لأعظم آثار الفيلسوف الشهير « خواجة نصير الدين الطوسى » : أعنى نابغة الشرق الأستاذ الحكيم والمفسر الجليل الشيخ (طنطاوى جوهرى) أعز الله الإسلام بطول حياته ، وبعد أن اطلعنا على التفسير المقدس لحضرتكم العلية (الجواهر) صممنا العزم على ترجمته إلى اللسان الفارسى الجذاب ، حتى يطلع المسلمون من أهل إيران على وجود تفسير جامع كبير . وبهذا ابتدأنا بترجمة تفسير سورة الفاتحة المباركة (الحمد لله رب العالمين) ونشرنا جزءا من تلخيص تفسيرها الجلى . وهذان جزءان منها لقد أهديناها لمقامكم الرفيع ونشكركم على الخدمة المهمة للاسلام مطلقا فى هذا العصر الطاغى فى الظاهر ، المظلم فى الباطن . لاسيما فى الشرق ، ونلتمس من الله القادر أن يوفقكم لإصلاح الجامعة الإسلامية بإيقاظ علمائها كما قال أعظم الرجال الأستاذ الكبير (السيد جمال الدين الأفغانى) : لايصلح الشرق إلا بعد تيقظ العلماء .

لجزاكم الله عن الإسلام خير الجزاء ، وإن الله لايضيع أجر المحسنين ؛ ومن السعادة أن سلطان الوقت لإيران مولع بنشر المعارف ، وناصر للعلماء الناصرين الحقيقيين لدين الإسلام الخالص المنزه عن الخرافات وقد ألقى حكما جليلة بتأسيس مدرسة العلوم الدينية العصرية . وأسس صاحب الفخامة وزير المعارف مدرسة عالية فى مركز مملكة إيران (طهران) وفى سائر الإيالات ، وهذه السنة دورة خامسة لطلاب العلوم الدينية فى المدرسة المذكورة : ونحن واثقون من الله بتأييده للحقيقة . ونرجو أن تؤثر نصائحكم وخطبكم البليغة فى عالم الإسلام .

وبعد ترجمة تفسير (سورة الفاتحة) المباركة وانتشارها أخذ أحد وعاظنا الكرام وهو الحاج الميرزا على أكبر الواعظ العزيزى الشهير الناطق الفصيح المندرج اسمه فى ختام ترجمة سورة الفاتحة تحت عنوان (الاعتذار والامتنان) بتقريظ تفسيركم (الجواهر) وتحريض المسلمين الحاضرين والغائبين على قراءة الترجمة الفارسية للفاتحة ، وقد حسن فى نظر الجمهور العام استحسانه وتمجيده تفسيركم ، وكان هذا فى يوم الجمعة من شهر رمضان سنة ١٣٥١ هجرية فى المسجد الجامع المملوء من جم غفير من الأهالى والأشخاص المحترمة من الأفاضل ورجال المعارف ، ولازال يمجد تفاسيركم على المنبر والمواضع التى تقتضى ذلك ، حفظه الله وحفظكم ورزقنا ورزقكم سعادة الدارين ، إنه على كل شىء قدير وهو ذو القوة المتين .

المنصور التقى زاده

المترجم للفاتحة على اللسان الفارسى

٧ ذى القعدة الحرام سنة ١٣٥١ هـ

Figure 1.1 Taqī-zādah's letter regarding the translation of Ṭanṭāwī Jawharī's commentary

Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qur'ān al-Karīm*, 26 vols (Cairo, 1923–1935)

that he talked broadly about how the spirit (*rūḥ*) was discussed in America, England, Italy, and elsewhere. Ṭanṭāwī Jawharī supposedly communicated with spirits about the features of people; according to the spirits' messages, people can be defined as being in one of two groups: the pious (*sālihūn*) and the sinners (*fāsiqūn*). He also mentioned that there are two types of bodies for the human spirit: the fine, transparent body (*laṭīf-i shaffāf*) and the heavy, earthly body (*arḍi-yi thaqīl*). Ṭanṭāwī Jawharī explained that the heavy, earthly body will be replaced by a soft, transparent one after death. Bānū Amīn developed her own ideas about the verses on the heavens, the earth, and so on, by again employing Shaykh Ṭanṭāwī Jawharī's statements.[36]

Some of his works, such as his commentary on Sūrat al-Fātiḥa (Q 1), were initially introduced to Persian communities by Manṣūr Taqī-zādah and ʿAlī Akbar Vāʿiẓ ʿAzīzī, two religious thinkers of Tabriz, who had been significantly impressed by Ṭanṭāwī Jawharī's effort to reform Muslim communities. A letter written by Taqī-zādah (see Figure 1.1), dated March 1933, shows that he had been keen to translate and publish other volumes of *al-Jawāhir fī Tafsīr al-Qurʾān*. Later on, Saʿdī Bihbūdī translated Ṭanṭāwī Jawharī's *Tafsīr Sūrat al-Fātiḥa* into Persian for publication by the Cultural Committee of Jamiat-e Islami Afghanistan, based in Tehran, in 1988.[37] Among his non-*tafsīrī* collections, Ṭanṭāwī Jawharī's book *al-Arwāḥ* was also translated into Persian by Ḥabībullāh Āmūzigār (d. 1980), and published in Tehran in 1928. Before publishing the book, Āmūzigār had initially divided the book into a number of essays, which were separately published in *Iṭṭilāʿāt* newspaper.[38]

Further east, traces of a considerable number of references to Ṭanṭāwī Jawharī's treatises and *tafsīr* are evident in a few South Asian in general and Malay-Indonesian qurʾanic exegetical works in particular, such as *Tafsir al-Quran al-Karim* by Abdul Halim Hasan, Zainal Arifin Abbas, and Abdul Rahim Haitami, written in 1937 in northern Sumatra, Indonesia.[39]

Previous scholarship on Ṭanṭāwī Jawharī's *tafsīr*

Contrary to the opinions of some Muslim scholars who have claimed that Ṭanṭāwī Jawharī's scientific work was just a new, fresh voice on the inimitability of the Qurʾān,[40] his own aim in and reason for compiling his exegesis was different. He felt that his "exegesis invites young people to stand up in their *umma* and compete with Europeans in agriculture, medicine, mineralogy, mathematics, engineering and other sciences. Why should Westerners be the pioneers in everything, when the Qurʾān contains many verses dealing with *ʿilm*?"[41]

His other statement about the purpose of *al-Jawāhir fī Tafsīr al-Qurʾān* reads:

> The exegesis was written based on divine inspiration. Assuredly, this exegesis will be recognised by Muslims who need to learn.[42]

Ṭanṭāwī Jawharī made a number of polemical statements that were criticised by his opponents. These include:

> O Muslim community! It is quite surprising that only a few verses were revealed about the religious law, but more than 700 verses related to the natural wonders are only recited . . .! Today is the era of learning and science. This era signifies the emergence and advancement of the light of Islam. Why do we not dynamically study the verses concerning the universe and wonders, just as our ancestors used to interact enthusiastically with verses dealing with inheritance? Thanks to Allāh, my commentary will offer and uncover the gist of sciences whose teachings are far better than teaching legal-ordinance knowledge.[43]

> Amazingly, in the sections on legal ordinances (*farāʾiḍ*), Muslim scholars blackened thousands of pages, even though the number of qurʾanic verses related to do not exceed 150! At the same time, Muslims rarely touched the verses related to sciences and cosmos. The verses dealing with these sciences are enumerated (more than 750 in number). Although our ancestors were pioneers in jurisprudence, we must compete with others (i.e. Europeans) in the natural sciences.[44]

> Rhetorical sciences are not the main purpose of qurʾanic studies, and are just one part of the science of phonetics. We write today about modern science is fully compatible with those sciences that God has made apparent on earth. In fact, these sciences, which are highlighted in this commentary, have been neglected by various arrogant, deluded Muslim jurists; indeed, now is the time for a revolution and to uncover the truth.[45]

He believed that having knowledge of nature is an important duty for every Muslim. In response to jurists' criticisms, Ṭanṭāwī Jawharī pointed out that the Qurʾān frequently highlights the significance of nature without being in response to any questions asked of the Prophet(s), in comparison to the majority of jurisprudential notes about the Qurʾān being based on the Prophet's answers to peoples' questions.[46]

Aside from Islamicist scholars and philosophers, some thinkers have regarded Ṭanṭāwī Jawharī as a figure whose exegesis failed to capture his readers' interest. Ayatullāh Ruḥullāh Khomeinī (d. 1989), the former Iranian leader, for instance, said that Ṭanṭāwī Jawharī compiled an exegesis in an unusual style, one that is not a *tafsīr* of the Qurʾān in any sense.[47] Jomier,[48] Bajlon,[49] and Jansen[50] are other prominent scholars whose works refer to Ṭanṭāwī Jawharī primarily as an interpreter of the Qurʾān (*mufassir*). *Le Cheikh Tantawi Jawhari (1862–1940) et son commentaire du Coran*, by Jacques Jomier, comprises one of the most detailed works on Ṭanṭāwī Jawharī and his exegesis, and in it the author remarks that Ṭanṭāwī Jawharī tried to encourage Muslims to pursue modern science.[51] Frederick De Jong said "one of the most remarkable expressions of the Islamic modernist trend in the early twentieth-century Egypt may be found in the works of Ṭanṭāwī Jawharī (1862–1940)." He felt that Ṭanṭāwī Jawharī's works concentrate on proving the compatibility of qurʾanic teachings with human nature and Western methodologies and theories.[52] Baljon (1968) and Jansen (1978) spent considerable

time researching modern qurʾanic exegeses in the Muslim world, and in Egypt in particular. Baljon briefly explained Ṭanṭāwī Jawharī's role in promoting a scientific interpretation of the Qurʾān, and stated that "without too much exaggeration his commentary is a manual for the general public on biology and other sciences, accompanied by practical advice and paternal admonitions addressed to the reader and ornamented with Koranic sayings applied as a kind of heading."[53] Concerning critical statements about Ṭanṭāwī Jawharī's exegesis, Baljon said ". . . when we are blaming the commentator for it, we must, to be fair, not lose sight of the fact that in his days the Egyptians were getting information about Western knowledge for the first time on a wider scale. In that situation the best chances of its introduction were to be expected, if a connection could be made with the sacred Scriptures, so that people might become less suspicious of it."[54]

Other relevant literature on his tafsīr *in the Muslim world*

ʿAbd al-ʿAzīz Jādū wrote the book *al-Shaykh Ṭanṭāwī Jawharī: Dirāsa wa-Nuṣūṣ*,[55] which recounts, in Arabic, Ṭanṭāwī Jawharī's biography, research interests, books, and opinions. First, Jādū relates Ṭanṭāwī Jawharī's educational background, followed by his socio-political interests. Although this book addresses various aspects of Ṭanṭāwī Jawharī's political and scientific life, it fails to fully explore his exegetical views and wider approach (not meaning his methodology) to science in the Qurʾān. He also presented many sections from Ṭanṭāwī Jawharī's publication but failed to provide any explanation or contextualisation for them. H'mida Ennaïfar, a well-known Tunisian scholar, drew a connection between Ṭanṭāwī Jawharī's scientific perspective and al-Ghazālī's qurʾanic statements. He briefly talked about al-Ghazālī's conception of Ashʿarites as outlined in *Iḥyaʾ ʿUlūm al-Dīn* ("The Revival of the Religious Sciences") and their influence on modern interpretations of the Qurʾān.[56] Al-Jamblāṭī quoted a statement by Bernard Carra de Vaux (1867–1953) in *Les penseurs de l'Islam* that highlights the special status of Muslim *ulema* (religious figures) in modern Egypt, and how Ṭanṭāwī Jawharī promoted a different version of Islam by encouraging important individuals to try to develop an advanced, modern society.[57] ʿAbdul Ḥalīm ʿAṭiyya's eloquent article in the journal *al-Muslim al-Muʿāṣir* articulates some philosophical thoughts written by Ṭanṭāwī Jawharī. From this text, it seems that ʿAṭiyya felt that Ṭanṭāwī Jawharī's numerous works of exegesis and books on social reform and movements had one central principal they were following: a Utopian approach to reform of the Muslim world.[58]

Esmaʿeel ʿAbdullāh and ʿAbd al-Manās had one of the most recent works about Ṭanṭāwī's *tafsīr* published in the *Journal of Islam in Asia*.[59] These scholars studied the exegetical methods applied by Ṭanṭāwī Jawharī and maintained that his work was the first, and the fullest, scientific interpretation of the Qurʾān. They also stated that Ṭanṭāwī Jawharī's exegesis is testament to his knowledge of modern science and his understanding of the natural sciences and philosophical schools. Their article concludes with the idea that Ṭanṭāwī Jawharī endeavoured to encourage Muslims to study modern science and thus

build advanced communities, as had Western societies. In addition to the works mentioned above, Muḥammad Ibrāhīm Sharīf wrote a book on the new directions in Egyptian qurʾanic exegesis in which he demonstrated the novel methodologies and directions applied by Ṭanṭāwī Jawharī.[60] ʿAbd al-Majīd ʿAbd al-Salām Muḥtasib wrote about the exegetical methods of the Qurʾān in the present era (*fī l-ʿaṣr al-rāhin*) in a book that, in general, encapsulates the essence of Ṭanṭāwī Jawharī's exegesis.[61] Anwar al-Jundī, a distinguished Egyptian scholar, prepared a large volume listing eminent figures of the Muslim world, one of whom was Ṭanṭāwī Jawharī, a "preacher of world peace."[62] In 2004, *The Encyclopaedia of Islamic Thought Figures* was published in Cairo, which describes Ṭanṭāwī Jawharī as an eminent, influential Islamic figure. A number of streets, schools, and institutions carry his name, e.g. "Shāriʿ Ṭanṭāwy *or* el-Johary," "Jāmiʿa Ṭanṭāwiyya," "Madāris Jawhariyya" and "ʿAqāʾid Jawhariyya."[63]

The Encyclopaedia of Muslim Arab Thinkers and Scholars was published in Beirut in 2005, and its fifth volume presented Ṭanṭāwī Jawharī, his influences, his new ideas, and his philosophical tendencies. The *Bayt al-Ḥikma Encyclopaedia of Arab Figures from the Nineteenth and Twentieth Centuries*, printed in Baghdad in 2000, contains an entry that states Ṭanṭāwī Jawharī was a reformist, a pioneer of a modernism, a religious figure, and a contemporary thinker. Ṭanṭāwī Jawharī also has a reputation among Iranians; according to the translation of Jomier's essay that was published by Fāṭima Tuhāmī in the journal *Āyina-yi Pazhūhash*,[64] Ṭanṭāwī Jawharī's exegesis was admired by many of the *ulema* for a time, but only briefly, i.e., until his death. Muḥammad Javād Pīrmurādī composed the essay "Ṭanṭāwī and his exegetical methodology,"[65] in which he critiqued Ṭanṭāwī Jawharī's working method. He stated that Ṭanṭāwī Jawharī seemed to be a positivist, based on his "strange" deductions. Pīrmuradī remarked that "exegetical writing" was Ṭanṭāwī Jawharī's preferred tool for expressing himself, and that it was unrelated to the Qurʾān. This Iranian scholar held Ṭanṭāwī Jawharī responsible for the the development of the positivist style that persuaded people to not follow the spiritual and divine aspects of the Qurʾān.

Likewise, in strong support of Ṭanṭāwī Jawharī's exegesis, Ḥassan al-Anbānī, the chief editor of *al-Ḥalabī*, wrote "my special thanks go to He who revealed the Qurʾān and nominated a human to uncover the secrets of heavens and the earth. As such, Shaykh Ṭanṭāwī, as a great philosopher and wise man, spreads divine knowledge as is stated in the Qurʾān: *we have neglected nothing in the book* (Q 6:38). It is very fortunate that God allowed him to complete his treasure [of a book], including the cosmological and civil sciences that are useful for Muslims."[66] Furthermore, Muṣṭafā al-Saqāʾ noted "this *tafsīr* is based on Shaykh Ṭanṭāwī Jawharī's lessons at *Dār al ʿUlūm*. He established a specific methodology in his *tafsīr* that nobody had employed previously. Muslim thinkers clearly understand his aims wholeheartedly. This great exegesis presents principles for the improvement of the (Islamic) nations. Ṭanṭāwī Jawharī shows how Islam is the origin of bliss in this world and in the Hereafter. He shows that it is a Muslim's responsibility to do the best he can to obtain an appropriate status in the Hereafter

by relying on the Qurʾān."[67] Other writers have stated that Shaykh Ṭanṭāwī Jawharī was familiar with both Eastern and Western philosophies and was very knowledgeable about the backwardness of Eastern nations; as such, his exegesis has been seen as a way of removing that backwardness from the Muslim world.[68] Other followers of his have held that Ṭanṭāwī Jawharī inspired Muslim communities to preserve their dignity by showing them that seeking scientific knowledge does not conflict with Islamic values. On this subject, Ṭanṭāwī Jawharī believed that the Qurʾān teaches us to investigate the natural sciences. He explained that the verse "Say: behold all that is in the heaven and on earth" (Q 10:101) tells Muslims to read about natural wonders as well as legal matters. People (particularly Muslims) can develop their skills in industry, agriculture, business, etc., and come to know the Almighty through the natural and cosmological sciences.

The newspaper *al-Muqaṭṭam* printed the following on 24 November 1926: "This exegesis has been written based on contemporary knowledge. The book has many benefits which have not been seen in earlier commentaries."[69]

The monthly journal *al-Majmaʿ al-ʿIlmī al-ʿArabī* in Damascus (vol. 5/6, no. 10, 1929) noted neutrally that "Ṭanṭāwī's exegesis drew the attention of readers to the fact that his exegesis resembles an 'encyclopaedia' that increases the Muslims' level of familiarity with the most recent discoveries."[70]

Notes

1 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm* (Cairo, 1933).
2 A. W. Cramb, "A Short History of Metal" [Online source].
3 See R. Castleden, *Discoveries that Changed the World* (London, 2008).
4 Ibid., 1–30.
5 For instance, the work of ʿAlī b. ʿĪsā, *Treasury for Ophthalmologists*, describing the eye and its diseases, was translated into Latin as *Tractus de oculis Jesu ben Hali*. See J. Freely, *Light from the East: How the Science of Medieval Islam Helped to Shape the Western World* (London and New York, 2011), p. 29.
6 He was an economist who developed the theory of economic backwardness.
7 See: *Economic Backwardness in Historical Perspective: A Book of Essays reviewed by Albert Fishlow*.
8 Read Caroline Oldcorn Reid's *Middle Class Values* (1976).
9 *19th Century Society and Culture* [Online source].
10 Ibid.
11 It should be noted that this sentence does not suggest that wealth and power can be found in all Western countries, but it does sketch the pioneering Western countries that tried to develop the empirical sciences.
12 E. W. Said, *Orientalism* (New York, 1978), p. 84.
13 See C. E. Bosworth, *Eastward Ho!* (London, 2012), p. 60.
14 This stone is preserved in the British Museum, UK: *Jean François Champollion* [Online source]
15 The population of some Muslim countries (particularly those in Africa, such as Egypt, Zanzibar, and Sudan) faced the possibility of being enslaved at the time, as the nineteenth century was a thriving age for slavery in Egypt. According to various archives, 5,000 African slaves were imported each year to Egypt from the 1840s to the 1850s. It seems there were at least 30,000 slaves in Egypt during the nineteenth century; see Kenneth M. Cuno, "African Slaves in 19th-Century Rural Egypt" *International Journal of Middle East Studies* 41/2 (2009), pp. 186–188

and Gabriel Baer, "Slavery in Nineteenth-Century Egypt" *The Journal of African History* 8/3 (1967), pp. 417–441.

16 J. E. Tucker, *Women in Nineteenth-Century Egypt* (Cambridge, 1985), p. 4.

17 Margaret Kohn, "Colonialism," *The Stanford Encyclopedia of Philosophy* (Spring 2014 Edition) [Online source]

18 Johanna Pink, "ʿAbduh, Muḥammad" (2015) [Online source].

19 Some of his contributions were published in *al-Liwāʾ* ("The Standard"), although I was unable to locate them.

20 Majid Daneshgar, "French Journals: A Bridge for the Presence of Muslims in Europe in the Nineteenth and Twentieth Centuries" *Āyina-yi Pazūhash* 24/2 (2013), pp. 16–18.

21 "Tantawi Jawhari, who in 1923 produced nothing less than a full Qurʾanic encyclopedia of scientific subjects, complete with pictures and tables, trying to show that the Qurʾan contained many jewels (*jawahir* in his book's title) of knowledge"; N. Guessoum, *Islam's Quantum Questions: Reconciling Muslim Tradition and Modern Science* (London, 2010), p. 149.

22 ʿAbdul Ḥalīm ʿAṭiyya, "al-Dars al-Falsafī ʿinda Ṭanṭāwī Jawharī," *al-Muslim al-Muʿāṣir* 23/90 (1998), pp. 43–82.

23 As Jaffer says: "[Ibn Taymiyya], too, recognized the diversity of exegetical threads and plurality of ideas that Rāzī had woven into his commentary . . . [and this sentence] was a response to the plurality of modes of interpretation and the excessive scope of material that Rāzī introduced into Sunnī tafsīr"; T. Jaffer, *Rāzī: Master of Quranic Interpretation and Theological Reasoning* (Oxford and New York, 2015), pp. 6–7.

24 See the entry in *Tahoor Encyclopedia* about al-Rāzī's *tafsīr* [Online source]

25 *Dīnānī dar guftugū bā IQNA: Tafsīr-i ʿIlmi-yi Qurʾān Sāzandih nīst* [Online source]

26 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 7:196.

27 Bahrāmī stated that the intention of *al-arḍ* in this verse is "the land of *Hijaz*," and does not mean the earth; Muḥammad Bahrāmī, "Rīsha Yābī–yi Kāstīhā-yi Tafāsīr-i ʿ Ilmī dar Qarn-i Muʿāṣir" *Pazhūhash-hā-yi Qurʾānī* 7/8 (1996/1375), pp. 178–205.

28 Martin Hartmann, "Schaich Ṭanṭāwī Dschauhari, Ein Modaerner Egyptischer Theolog und Naturfreund" *Beitrage zur Kenntniss des Orients* 13 (1916), pp. 54–82.

29 Elshakry, *Reading Darwin in Arabic*, p. 315.

30 Rashīd Riḍā, *al-Manār* (1929), pp. 515–517 [Online source].

31 Marwa Elshakry, *Reading Darwin in Arabic*, pp. 315–316.

32 Also *Jamʿiyat [al-Ahrām] al-Rūḥiya*; see also Marwa Elshakry, *Reading Darwin in Arabic*, p. 314.

33 Anwar Abū Ṭāhā, *Khitāb al-Tajdīd al-Islāmī: al-Azmina wa'l-Asʾila* (Damascus, 2004), p. 270.

34 Rashīd Riḍā, *al-Manār* (1929), pp. 515–517 [Online source].

35 Ṭanṭāwī Jawharī, *al-Jawhāhir fī Tafsīr al-Qurʾān al-Karīm*, 8:196.

36 N. Amīn, *Makhzan al-ʿIrfān dar Tafsīr-i Qurʾān* (Tehran, 1982), 5:92–93.

37 S.Bihbūdī (trans.), *Sūra-yi Ḥamd az Tafsīr-i al-Jawāhir by Ṭanṭāwī Jawharī* (Tehran, 1988/1367).

38 Ḥabībullāh Āmūzigār (trans.), *ʿĀlam-i Arvāḥ taʾlīf-i Ṭanṭāwī Jawharī* (Tehran, 1928/1307), pp. 2–3.

39 For further information, see N. Ahmad, *Methodologies and Issues within Tafsir al-Quran al-Karim by Abdul Halim Hasan et al.: An Analytical Study* (PhD diss., Kuala Lumpur, 2014).

40 "The exegesis of the Qurʾān entitled *al-Jawāhir fī tafsīr al-Qurʾān al-Karīm*, by Shaikh Ṭanṭāwī, is one of the most important and comprehensive works to address the subject of scientific miracles throughout the whole Qurʾān"; see Esmaʿeel ʿAbdullāh and ʿAbdul Manās Suyūṭī, "Manhaj al-Shaykh Ṭanṭāwī Jawharī fī Tafsīrih," *Journal of Islam in Asia* 2 (2011), pp. 53–82.

41 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 1:1–2.
42 Ibid., 3:19.
43 Ibid.
44 Ibid., 25:53.
45 Ibid., *Introduction*.
46 Ibid., 1:8.
47 R. Khomeinī, *Interpretation of Surah al-Hamd. in Light within me* [Online source].
48 Jacques Jomier, "Le cheikh Tantāwī Jawharī (1862–1940) et son commentaire du Coran," *Mélanges de l'Institut Dominicain d'Études Orientales du Caire* 1 (1958), pp. 115–174.
49 J. M. S. Bajlon, *Modern Muslim Koran Interpretation (1880–1960)* (Netherlands, 1961).
50 J. G. Jansen, *The Interpretation of the Koran in Modern Egypt* (Netherlands, 1980).
51 J. Jomier, "Le cheikh Tantawi Jawhari (1862–1940) et son commentaire du Coran," pp. 115–174.
52 Fred. De Jong, "Transmission of Islamic Learning between Egypt and the Volga-Ural Region in the Early Twentieth Century: The Case of Ṭanṭāwī Jawharī and Dhākir al-Qādirī", *Proceedings of the International Symposium on Islamic Civilisation in the Volga-Ural Region: Kazan* 10 (8–11 June 2001), p. 77. One of De Jong's works dealing with Ṭanṭāwī Jawharī was outlined in the *Bibliotheca Orientalis* in 1977, where he produced a biography and a bibliography of Ṭanṭāwī Jawharī's works. See also A. Goldschmidt, *Biographical Dictionary of Modern Egypt*, p. 96.
53 J. M. S. Baljon, *Modern Muslim Koran Interpretation* (1880–1960), p. 5.
54 Ibid., p. 6.
55 ʿA. ʿA. Jādū, *al-Shaykh Ṭanṭāwī Jawharī: Dirāsa wa-Nuṣūṣ* (Cairo, 1978).
56 Hʾmida Ennaïfar, "al-Tafsīr al-ʿilmī min Ṭanṭāwī Jawharī ilā Abī Ḥamid al-Ghazālī" *Āfāq al-Thaqāfa wa'l-Turāth* 6 (1996), pp. 18–27.
57 al-Jamblāṭī, "al-Shaykh Ṭanṭāwī Jawharī wa-Jāʾiza Nobel," *Minbar al-Islām* 8 (1962), pp. 146–149. Baron Bernard Carra de Vaux was a French thinker who published several books about Islam and religious figures. The book *Les penseurs de l'Islam* has two main subjects, "Mohamadans" and "Mohamadanism," the fifth volume of which focuses on Islamic thinkers. Carra de Vaux, *Les penseurs de l'Islam* (Paris, 1921).
58 ʿAbdul Ḥalīm ʿAṭiyya, "Iʿāda Iktishāf Mufakkir ʿArabī (?) Ḥadīth: Ṭanṭāwī Jawharī," *Majalla al-ʿArabī al-ʿUlūm al-Insāniyya* 23 (1986), p. 6.
59 E. ʿAbdullāh and ʿAbdul Manas Suyūti, "Manhaj al-Shaykh Ṭanṭāwī Jawharī fī Tafsīrih" (2011), pp. 53–82.
60 Muḥammad I. Sharīf, *Itijāhāt al-Tajdīd fī Tafsīr al-Qurʾān al-Karīm* (Cairo, 1982).
61 ʿAbd al-Majīd ʿAbd al-Salām Muḥtasib, *Itijāhāt al-Tafsīr fī l-ʿAṣr al-Rāhin* (1982), pp. 272–273.
62 A. al-Jundī, *Tarājim al-Aʿalām al-Muʿāṣirin* (Cairo, 1970), pp. 175–183.
63 M. H. Zaqrūq, *Encyclopedia of Islamic Thought Figures* (Cairo, 2004).
64 Fāṭima Tuhāmī, "Ṭanṭāwī va Tafsīr-i ʾŪ" *Āyina-yi Pazhūhash* 64 (2000/1379), pp. 27–43.
65 Muḥammad Javād Pīrmurādī, "Ṭanṭāwī va Ravish-i Tafsīri-yi ʾŪ" *Miṣbāh* 48 (2003/1382), pp. 51–68.
66 *al-Shaykh Ṭanṭāwī Jawharī*, tantawi-gawhari.net [Online source].
67 وأن المسلم يجب عليه أن يصلح حال دنياه مع سعيه لصلاح آخرته
68 "al-Sheikh Ṭanṭāwī Jawharī," [Online source].
69 *al-Muqaṭṭam*, 24 November (1926) [Report].
70 *al-Majmaʿ al-ʿIlmī al-ʿArabī* 5/6 (1929) [Report].

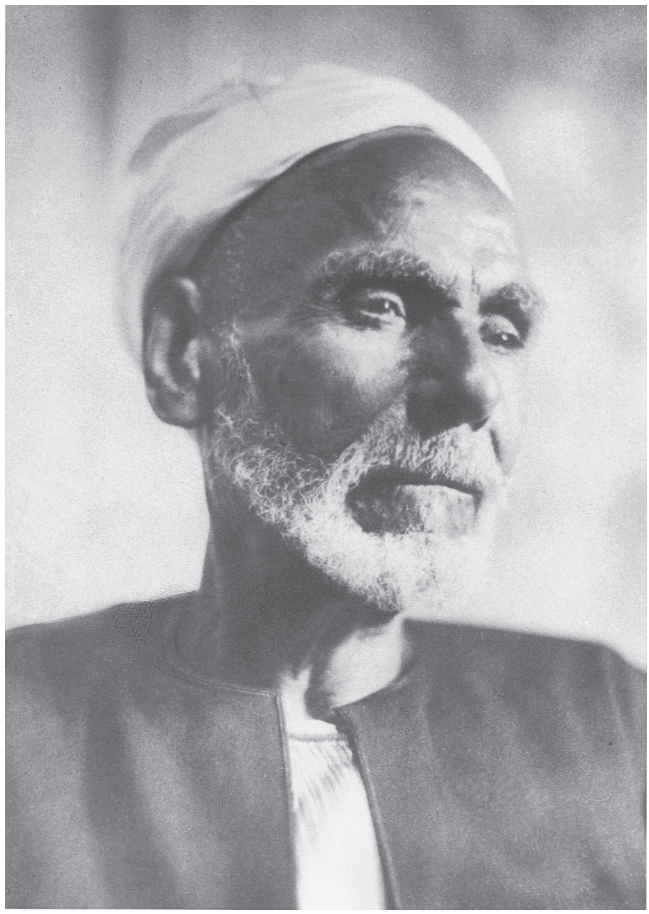

Figure 2.1 Portrait of Ṭanṭāwī Jawharī (1862–1940)
Family archive from Fathi Saleh, Cairo, Egypt

2 Background and social concerns

Ṭanṭāwī Jawharī (1862–1940) was born in Kafr ʿAwaḍallāh Ḥijāzī village, southeast of al-Zaqāzīq (Zagazig) in al-Sharqiya Province, Egypt. After learning the basic tenets of Islam, he began attending al-Azhar in 1877. He was well-versed in Arabic literature and its grammatical principles, in *fiqh*, and in issues related to *kalām*. Due to his father's illness he returned to his home village where he worked on farms; it was here, he said, that he came to see the manifestation of God.[1] This seems to be reflected in his particular, and perhaps excessive, interest in nature, farming, and agriculture. He was extremely interested in natural and cosmological phenomena, stating, "when I was in al-Azhar, I had an inordinate enjoyment of the planets; how many nights I passed simply gazing at the stars and their beauty. Such was my negligence."[2]

During the First World War, he was denounced several times for his outspoken anti-colonial stance and his contacts with the Democratic (National) Political Party (*al-Ḥizb al-Waṭanī*), a secret society founded by Muṣṭafā Kāmil Pasha (d. 1908), one of the figures most strongly opposed to the British occupation of Egypt.[3] Ṭanṭāwī Jawharī himself was also dedicated to political and social affairs, and likewise played a role in the anti-colonial movement. It is thought that colonial officers monitored his activities. Not only was he named *al-ustādh al-ḥakīm* ("the wise master")[4] but, among other epithets, he was also referred to as *faylasūf al-sharq wa'l-Islam* ("the philosopher of the East and of Islam"), a title that often appears before his name. Several years after the war, a number of Arab newspapers began referring to Ṭanṭāwī Jawharī as *al-faylasūf al-kabīr* ("the great philosopher"), for the following reasons: (a) his writings were the most recent on the idea of the Arab Utopia; (b) he had written the most important interpretation of the Qurʾān after Shaykh ʿAbduh; and (c) he helped revive Arabic sciences in Cairo.[5]

Some of his works have received global acclaim, and both westerners and Muslims have translated and reviewed them in languages including English, French, and German. The Italian scholar Santillana (d. 1931), for instance, assessed one of Ṭanṭāwī Jawharī's most famous works, *Ayn al-Insān* ("Where is Man?") in *Rivista degli Studio Orientali*.[6]

There is some evidence suggesting that Ṭanṭāwī Jawharī frequently criticised the Cairo educational system and recommended that the language used in Egypt be reconsidered.[7] He also pointed out that the standard of science and its practice

would have a direct impact on the success or failure of any nation, and that a nation's downfall and decadence or success and victories is related to what is in the hearts of its people, as stated in the Qurʾān: "Allāh does not change a people's lot unless they (first) change what is in their hearts" (Q 13:11).[8]

One of the main aims in his works was to link Islamic texts and history with ordinary Muslims' social life and thought. He also observed that knowledge of mathematics and the physical/natural sciences is the basis for success in a community, as maths and geometry are useful in the military and agriculture for planting, harvesting, and so on, while astronomy helps humans to determine time and thereby guides merchants, princes, engineers, or physicians while travelling.[9] Ṭanṭāwī Jawharī's *Nahḍat al-umma* was seen as a sign of the rising or progress of a nation in a review from April 1909, as it was believed to reflect the "change" and "bliss" in that society from Ṭanṭāwī Jawharī's perspective.[10] In actuality, this is clearly a form of social commentary by Ṭanṭāwī Jawharī, who used Islamic sources in order to underscore the implications of intellectual change for Muslims. For him, Muslims needed progress and movement, something he first understood while in his hometown where he saw a passing train invented by Western powers. He affirmed this by saying,

> The advent of the railway, which I saw for the first time run past a neighbouring village, filled me with awe and wonder, and made me think of the people of the West. I had no doubt that the inventors of the locomotive were masters of science and I wanted to know something about their belief in God. Another enquiry in which I was engaged was about the causes of Muslims being backward.[11]

This incident caused him to return to Cairo, where he started composing essays and various other works. The Muslims' comparative backwardness in the nineteenth and twentieth centuries may have been the main reason Ṭanṭāwī Jawharī wrote his interpretation of the Qurʾān, which is, as noted earlier, replete with notes on modern scientific findings. He made some important remarks in his *tafsīr* (particularly in the tenth volume) regarding the backwardness in the Muslim world and Western advances, where he stated that Europeans had made such technological progress in the modern era mainly due to their contact with Muslims during and after the Crusades, when they acquired knowledge and scientific concepts from the Muslims.[12] Such a stance highlights his wish to revive Muslim dignity throughout the world. He also declared that Muslims were not concerned with their preeminence in the world and the golden age of Islamic heritage and civilization. He therefore often attempted to remind Muslims of their status, of being in the presence of God, through his Qurʾān commentary. In his view, God truly displayed His love (*ḥubb*) for Muslims through the Qurʾān.

Together with Sayyid Jamāl al-Dīn and ʿAbduh, Ṭanṭāwī Jawharī wanted the (re-)unification of the Islamic world and was extremely worried about the conflicts raging among those who shared the same language, such as those in: Morocco and Algeria, Tunisia and Tripoli, and in Egypt, Yemen, Najd, Iraq,

Sudan, etc. He supported the idea that Muslims should observe their alliances with China, Japan, Spain, and France as part of his effort to convey this message of a "language of unification."[13] Ṭanṭāwī Jawharī's principal concern regarding the Muslim world is evident in his supplication "my Lord, this *tafsīr* is meant as way for the Qurʾān to be used to solve the Muslims' problems; to help Muslims be united and not divided."[14]

Social thought and the Nobel Prize

Of Ṭanṭāwī Jawharī's works and treatises, some of which have been published in other languages, two earned him Nobel Peace Prize nominations (seemingly in the first domestic round) in 1939. At the same time, two of his books, *Aḥlām fī l-siyāsa wa-kayfa yatahaqqaq al-salām al-ʿām* ("Political Dreams and How Universal Peace Can Be Realised")[15] and *Ayn al-insān* ("Where is Man?"), were reviewed by both Muslim and non-Muslim scholars in various journals and newspapers.

He was familiar with English and had contacts with several famous non-Muslim scholars. For instance, a survey of Ṭanṭāwī Jawharī's works suggests the influence of John Lubbock, also known as Lord Avebury (d. 1934). Ṭanṭāwī Jawharī himself stated, "I made sufficient progress to (be able to) read English books and at the time the book that impressed me most was *The Beauties of Nature and the World We Live in* by Lord Avebury, with whom I corresponded for many years."[16] It is thought that Ṭanṭāwī Jawharī's *Jamāl al-ʿālam* ("The Beauty of the Universe") and other works in which his love for nature is clear were inspired by Lubbock's books *The Pleasures of Life* (1887) and *The Beauties of Nature and the Wonders of the World we live in* (1892). He apparently also communicated with other Europeans who occasionally reviewed his works. David Samuel Margoliouth (d. 1940) reviewed Ṭanṭāwī's *Political Dreams* and wrote:

> The title of this work invites to take into account the two treatises from the collected works of Immanuel Kant, Träume eines Geistersehers[17] and Zum ewigen Frieden.[18] Kant was a mathematician and astronomer, but these sciences do not enter into his expedients for perpetual peace; both are employed by the Sheikh as well as botany, chemistry, anatomy, and psychometry . . . The reviewer's acquaintance with the Shaikh dates from 1904, when he had already commenced what is now a long series of works, all of which have lofty and philanthropic aims. He has endeavoured, not without some success, to eradicate prejudices and to promote good will. It may be hoped that his book may do something to compass these ends.[19]

Margoliouth wanted to highlight Ṭanṭāwī Jawharī's attempts to bring about peace and mutual respect between various peoples. Indeed, this review displays an open-minded image of this Egyptian Shaykh, one who had not descended into fanaticism. *Political Dreams* was also dedicated to all the nations of mankind (*taqdīm al-kitāb ilā umam al-insāniyya*), and more specifically to the scientists

(*rijāl al-ʿilm*), philosophers (*al-falāsifa*), and general public peace communities in the East and the West (*jamāʿāt al-salām al-ʿāmm fī l sharq wa'l-gharb*).

In Ṭanṭāwī Jawharī's *Where is Man?* the order of the universe is compared to the order of the nations (*fī l-muqārana bayn al-niẓām al-ʿālam wa-niẓām al-umam*). This section explicitly displays his concern about the current situation of the Muslims and the challenges faced by Eastern (Muslims as well as Asians more generally) and Western communities. He deemed that man (*insān*) moves against the natural order established by God: the movements of the planets in the universe are wondrous, while the movements of the nations in their injustice and disunity are unnatural.[20] Ṭanṭāwī Jawharī's idea was portrayed very clearly as "The sun and the moon follow courses (exactly) computed, as do the plants and the trees – both prostrate themselves in adoration of the order, as do all the planets, stars, the earth, moon, and comets, each in its rounded course, with accurate calculation . . . As for the human nations and earthly states, they do not do likewise (*fa'sh-shams wa'l qamar bi-ḥusbān* [1], *wa'l-najm wa'l-shajar yasjudān* [2], *bi-niẓām, wa-kullu kawkab wa-najm wa-arḍ wa-qamar wa-mudhannab, kullun fī falak-in yasbaḥūn* [3], *bi-ḥisāb-in daqīq...fa-ammā al-umam al-insāniyya, wa'l duwal al-arḍiyya fa-innahum ʿan al-ṣirāṭ lanā kibīn* [4])."[21] Ṭanṭāwī Jawharī further expressed his teachings through the supplication: "O Allāh! You are the owner of the kingdoms, possess hearts as [You] possess the stars, and conduct human bodies as [You] manage the planets."[22]

Reading his publications, it is clear that, just as Herbert Spencer's views had influenced Muḥammad ʿAbduh,[23] so is Immanuel Kant's thought frequently referred to in Ṭanṭāwī Jawharī's works, especially *Where is Man?* In this work, a translation by Annette Churton of *Über Pädagogik* (Education) (or his own Arabic translation of the English version of *Über Pädagogik*) is employed to convey Kant's message that "each generation, provided with the knowledge of the preceding one, is able more and more to bring about an education which develops man's natural gifts in their due proportion and in relation to their end, and thus advances the whole human race towards its destiny."[24] As indicated earlier, Ṭanṭāwī Jawharī emphasised the role mathematics and the natural sciences should play in the life of Muslims, which also demonstrates the impact of these notions of Kant: "the first lesson of science will most advantageously be directed to the study of geography and mathematics, as well as physics fields. Tales of travel, illustrated by pictures and maps, will lead on to political geography. From the present condition of the earth's surface we go back to its earlier condition, and this leads us to ancient geography, ancient history, and so on . . . But in teaching children we must seek insensibly to unite knowledge with putting that knowledge into practice. Of all the sciences, mathematics seems to be the one that best fulfils this."[25]

In the fifth volume of *Les penseurs de l'Islam* ("Muslim scholars"), Carra de Vaux (1867–1953), a famous French scholar, explained the latest Egyptian intellectual trends and the fact that one of the most prominent figures in the Islamic movement was Shaykh Ṭanṭāwī Jawharī who, through his pen (*qalam*), conveyed his ideas to the people. Throughout this part of his book, Bernard Carra de Vaux

praises Ṭanṭāwī Jawharī and places him in the same rank as Muḥammad ʿAbduh. He mentions that modern Egypt is the result of three factors: (1) Muḥammad ʿAlī Pasha (1769–1849) and his efforts to familiarise people with the Occident and European knowledge, progress, and talent; (2) the influence of the Egyptian Muslim religious scholars Muḥammad ʿAbduh and Shaykh Ṭanṭāwī Jawharī; and (3) modern nationalists, such as Muṣṭafā Kāmil and Saʿad Zaghloul.[26]

According to Carra de Vaux, in his final works (i.e. *Niẓām al-ʿĀlam wa'l-Umam* and *Nahḍat al-Umma wa-Ḥayātuhā*) Ṭanṭāwī Jawharī followed a political philosophy (*philosophie politique*) similar to that of al-Fārābī (*il rappelle un peu Al-Farabi pour le fondés ideas*) and used a methodology and application of scientific data like that of Ibn Ṭufayl (*Ibn Tofail Par L'usage des données scientifiques*). He is also compared to the social philosopher, Thomas More (1478–1535), the Italian theologian and philosopher Campanella (1568–1639), and Han Ryner (1861–1938), an activist and philosopher. Ṭanṭāwī Jawharī's citations of prominent European (Western) works affirm that his main concern was to demonstrate the progress of non-Muslims in order to encourage Muslim communities across the world to improve themselves.[27]

A further point worth noting is Ṭanṭāwī Jawharī's interaction with Muslim leaders from across the globe. He explicitly conveyed his social and political philosophy and ideology through his interpretation of the Qurʾān. After the first volume of his *tafsīr* was printed along with a letter signed by Ṭanṭāwī Jawharī himself, it was submitted to the king of Egypt, the kings of Persia and Afghanistan, the ruler of Hyderabad, Sultan Ḥusayn ibn ʿAlī in Mecca, and Imām Yaḥyā of Yemen. Ṭanṭāwī Jawharī opened his letter by placing particular emphasis on the need to rethink and moderate religion and suggested that progress would never be achieved by Muslims unless they became acquainted with the Qurʾān; according to Ṭanṭāwī Jawharī, the commands found in the Qurʾān include modern science and all types of human industries, as well as qurʾanic legal issues such as prayer, pilgrimage, fasting, etc., through which Islam could become known for its virtue and justice.

As well as his correspondence with the renowned Persian Shīʿī cleric Āyatullāh Marʿashī Najafī (1897–1990) in 1938 and other Iranian ulema based in Qum and Tabriz,[28] a number of authentic archives belonging to Ṭanṭāwī Jawharī's family, which are currently looked after by his grandson, indicate that Ṭanṭāwī Jawharī's book *Aḥlām fī 'l-Siyāsa* was sent to the Shah of Iran, Rezā Shāh Pahlavī (r. 1925–1941), in 1935. Rezā Shāh responded via the Foreign Minister, Mr. [Bāqer] Kāẓemī, confirming that writing and publishing such works is most worthy at such times when the world very much requires a movement towards peace.

Over the course of his academic, social, and political life, Ṭanṭāwī Jawharī was active in establishing or supporting a number of associations and societies, many of which were aimed at attracting the non-traditionalists (i.e. the young people) of Cairo and Egypt. Since the important activities and events in Ṭanṭāwī Jawharī's life are not well known, Table 2.1, created on the basis on information received from his grandson, summarises the main details of his life, including his contributions to various societies.[29]

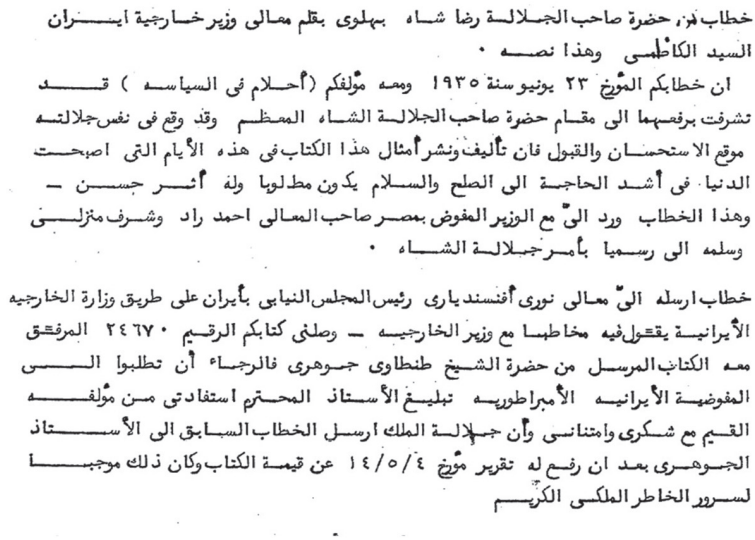
١ ــ خطاب من حضرة صاحب الجلالة رضا شاه بهلوى بقلم معالى وزير خارجية ايران السيد الكاظمى وهذا نصه ٠
ان خطابكم المؤرخ ٢٣ يونيو سنة ١٩٣٥ ومعه مؤلفكم (أحلام فى السياسه) قد تشرفت برفعهما الى مقام حضرة صاحب الجلالة الشاه المعظم وقد وقع فى نفس جلالته موقع الاستحسان والقبول فان تأليف ونشر أمثال هذا الكتاب فى هذه الأيام التى اصبحت الدنيا فى أشد الحاجة الى الصلح والسلام يكون مطلوبا وله أثر حسن ــ وهذا الخطاب ورد الىّ مع الوزير المفوض بمصر صاحب المعالى احمد راد وشرف منزلتى وسلمه الى رسميا بأمر جلالة الشاه ٠
٢ ــ خطاب ارسله الىّ معالى نورى أفنسند ياري رئيس المجلس النيابى بأيران على طريق وزارة الخارجيه الأيرانية يقول فيه مخاطبا مع وزير الخارجيه ــ وصلنى كتابكم الرقيم ٢٤٦٧٠ المرفق معه الكتاب المرسل من حضرة الشيخ طنطاوى جوهرى فالرجاء أن تطلبوا الى المفوضية الأيرانيه الأمبراطوريه تبليغ الأستاذ المحترم استفادتى من مؤلفه القيم مع شكرى وامتنانى وأن جلالة الملك ارسل الخطاب السابق الى الأستاذ الجوهرى بعد ان رفع له تقرير مؤرخ ١٤/٥/٤ عن قيمة الكتاب وكان ذلك موجبا لسرور الخاطر الملكى الكريم

Figure 2.2 Rezā Shāh Pahlavī's message regarding Ṭanṭāwī Jawharī's *Political Dreams* in 1935

Family Archive from Fathi Saleh, Cairo, Egypt

Table 2.1 Ṭanṭāwī Jawharī's timeline from 1862 to 1940

Year	*Activities*	*Explanation*	*Writings/ publications*	*Important events*
1862	Birth of Ṭanṭāwī Jawharī	In Zagazig		
1866	Memorisation of the Qurʾān	A part of Islamic domestic educational culture popular in many parts of the Muslim world.		
1877	Enrolment at al-Azhar	With his cousin		
1883	Father's illness			
1886	Return to al-Azhar			
1889	Enrolment at Madrasa Dār al-ʿUlūm (Teacher Training College)			
1893	Graduation from Dār al-ʿUlūm			

1894	Teacher at Damanhūr Primary School	For three months		
1895	Teacher at Dār al-ʿUlūm			
1888	Teacher at al-Nāṣiriyya School		*al-Farāʾiḍ al-Jawhariyya fī l-Ṭarīq al-Naḳwiyya*	
1889				Founder of *Jamāʿa al-Ukhuwwa al-Islāmiyya*
1900			*Mīzān al-Jawāhir*	*Jamʿiyyat al-Shubbān al-Muslimīn*
1901	Teacher at Madrasa al-Jīzah (al-Gizah)		*Jawāhir al-ʿUlūm*	*Jamʿiyyat al-Muwāsāh/ al-Moasat al-Islāmiyya*
1902			*Jamāl al-ʿĀlam*	*Dāʾira al-Ḳāhira al-Rūḥiya*
1903			*Al-Niẓām wa'l-Islām*	*Al-Ikhwān al-Muslimīn* (?)
1904	Teacher at al-Khidīwiyya Secondary School		*Al-Zahra fi Niẓām al-ʿĀlam wa'l-Umam, and Jawāhir al-Taqwā*	
1905			*Niẓām al-ʿĀlam wa'l- Umam*	
1906			*Al-Tāj al-Muraṣṣaʿ*	
1908			*Naḥḍat al-Umma wa-Ḥayātuhā,* and *Mudhakkirāt fī Adabiyyāt al-lugha al-ʿArabiyya*	
1910			*Mudhakkirāt fī Adabiyyāt al-Shiʿr wa'l- Taʿrīb* and *Ayn al-Insān*	
1911	Teacher at Dār al-ʿUlūm			
1912	Lecturer at the University of al-Maṣriyya			
1914	Teacher at al-ʿAbbāsiyya al-Thānawiyya bi'l-Iskandariyya		*Al-Musīqī al-ʿArabiyya*	

(continued)

Table 2.1 (continued)

Year	*Activities*	*Explanation*	*Writings/ publications*	*Important events*
1915			*Jawhar al-Taqwā*; *Majmūʿa Rasāʾil*; *al-Sirr al-ʿAjīb fī Ḥikma Taʿaddud Zawjāt al-Ḥabīb*, *Risāla al-Hilāl* and *al-Ḥikma wa-l-Ḥukamā*	
1916			*Aṣl al-ʿĀlam*	
1917	Teacher at al-Khidīwiyya School			
1919		Armed forces raid his house		
1921			*Jawhara al-Shiʿr wa'l-Taʿrīb*	
1922		Retirement	*Rasāla ʿAyn al-Namla*, *al-Madkhal fī Falsafa* and *Barāʾa al-ʿAbbāsa* (or maybe in 1936)	Begins writing his *Tafsīr*
1923			*Al-Qurʾān wa'l-ʿUlūm al-ʿAṣriyya*	
1926			*Sawāniḥ al-Jawharī*	
1928			*Al-Qawl al-Thawāb fī Masʿala al-Ḥijāb*	
1929			*Ḥadīth al-Māʾida*	
1931			*Al-Arwāḥ*	
1933				Becomes editor of *Majalla al-Ikhwān*
1934			*Jawāhir al-Inshāʾ*	Completes his *Tafsīr*
1935			*Aḥlām fī l-Siyāsa*	
1936			*Kitāb al-Tarbiya* and *Bahjat al-ʿUlūm*	
1938				Finishes his editorial job at *al-Ikhwān* magazine
1939		Nomination for the Nobel Prize		
1940		Death (12 January 1940)		

Created in Arabic by Fathi Saleh, Cairo, Egypt. Translated into English and edited by Majid Daneshgar, Dunedin, New Zealand

Notes

1 For more on Ṭanṭāwī Jawharī's life and background, see Majid Daneshgar, "Ṭanṭāwī Jawharī," *Oxford Islamic Studies Online* [Online source].
2 Ibid.
3 Ziad Fahmy, "Francophone Egyptian Nationalists, Anti-British Discourse, and European Public Opinion, 1885–1910: The Case of Mustafa Kamil and Ya'qub Sannū'" *Comparative Studies of South Asia, Africa and the Middle East* 28/1 (2008), pp. 170–183. See also: *Encyclopedia Britannica Online*, "Muṣṭafā Kāmil" [Online source].
4 Muḥammad Yūsuf Khalīfa, "Malāmiḥ Shakhṣiyya: Ṭanṭāwī Jawharī", n.d.
5 Aḥmad ʿAbdul-Ḥalīm ʿAṭiyya, "Iʿāda Iktishāf mufakkir ʿArabī ḥadīth: Ṭanṭāwī Jawharī" *Majalla al-ʿArabī al-ʿUlūm al-Insāniyya* 23 (1986), p. 6.
6 Santillana, "Kitab Ayn al-Insan" (1911), pp. 762–773.
7 In the 14th section of *nahḍat al-umma wa-ḥayātuhā*, Ṭanṭāwī Jawharī discusses the signs of and resistance to reform in *al-Azhar*.
8 Ṭanṭāwī Jawharī, *Nahḍat al-umma wa-ḥayātuhā*, (Cairo, 1954/1353), p. 16.
9 Ibid., p. 63.
10 David Samuel Margoliouth, "*Nahdat al-Ummah wa-Hayâtuhâ*. The Uprising of the Nation and its Life by Shaikh Tantâwî Jauharî," *Journal of the Royal Asiatic Society of Great Britain and Ireland* (April 1909), pp. 500–501.
11 H. K., "An Egyptian Candidate for the Nobel Peace Prize," *Egyptian Gazette* (1939).
12 Ṭanṭāwī Jawharī, *al-Jawāhir fi Tafsīr al-Qurʾān al-Karīm*, 10:137. Tantāwī Jawharī's scientific views regarding qurʾanic verses are not only rooted in the Muslims' backwardness in modern times but also in theological-jurisprudential notions as to why, despite being "those whom Your blessings are upon" (according to the Qurʾān), Muslims should be merely observing the non-Muslim (i.e. Jewish or Christian) discoveries of the divine wonders. He presumed that Muslims were ignorant about the science of nature and empirical methods, and so felt the need to write a fully developed exegesis, in which the verses are explained according to the situation in the world during his lifetime. Ṭanṭāwī Jawharī introduced scientific ideas in line with Muslim familiarity with modern science and Western findings.
13 Ibid., p. 242.
14 Nonetheless, he also believed that the presence of the West in the Muslim world had some advantages, including encouraging Muslims to study/seek history and science: Ṭanṭāwī Jawharī, *al-Jawāhir fi Tafsīr al-Qurʾān al-Karīm*, 10:244.
15 This was initially written in English.
16 H. K., "An Egyptian Candidate for the Nobel Peace Prize".
17 "dreams of a spirit-seer".
18 "perpetual peace".
19 David Samuel Margoliouth, "*Political Dreams and how Universal Peace can be Realized* by al-Ustadh al-Hakim al-Shaikh Ṭanṭāwī Jauhari," *Journal of the Royal Asiatic Society of Great Britain and Ireland* 2 (April 1937), pp. 378–379.
20 Ṭanṭāwī Jawharī, *Ayn al-Insān* (Cairo, 1978), p. 18.
21 Ṭanṭāwī Jawharī used several verses as the basis for his comparison between the universe and the order of the nations.
22 Ṭanṭāwī Jawharī, *Ayn al-Insān*, p. 18.
23 "'Abduh found many echoes of his own thought in Spencer. He too saw education as a moral as much as an intellectual enterprise, a concept he would also have derived from canonical Muslim models of education on moral and character development"; Elshakry, *Reading Darwin in Arabic*, pp. 195–196. According to Elshakry, ʿAbduh was keen to translate Spencer's *Education: Intellectual, Moral and Physical* into Arabic.
24 I. Kant, *Über Pädagogik*, trans. Annette Churton (Boston, 1900), pp. 10–11. It seems Ṭanṭāwī Jawharī saw the significance and importance of education (for bringing about progress) in much the same way as had ʿAbduh, as he stated in *al-Manār* that

education is a very important element that women should undertake in order to reform the social conditions affecting the lives of women in Muslim lands. Charles C. Adams, *Islam and Modernism in Egypt: A study of the Modern Reform Movement Inaugurated by Muōhammad Abduh* (New York, 1933), p. 230.

25 I. Kant, *Über Pädagogik*, p. 75.

26 C.Vaux, *Les penseurs de l'Islam,* 5:275–284; Ṭanṭāwī Jawharī, *Aḥlām fi'l-Siyāsa* (Cairo, 1935), preface: ḥā-khā.

27 He cited Sir James Jeans, Paul Berl, and Robert Brown's works: Ṭanṭāwī Jawharī, *Aḥlām fi' l-Siyāsa*, pp. 3, 33, 65. It came to my attention that Jādū also referred to non-Muslims' statements about Ṭanṭāwī Jawharī.

28 It seems that Ṭanṭāwī Jawharī took a neutral stance to Shīʿism; he dedicated a part of his *tafsīr* to the historical analysis of Imāmiyya, divided into main groups of Ismāʿiliyya, Ithnāʿashariyya, Zaydiyya, and Kaysāniyya.

29 I especially thank Professor Fathi Saleh, Ṭanṭāwī Jawharī's grandson, for providing me with such important information.

3 A *mufassir* and nature

This chapter examines the early twentieth-century author and Arabist Martin Hartmann (1851–1918), who discussed three of Ṭanṭāwī Jawharī's books. The following English translation of Hartmann's essay provides an opportunity to re-examine Ṭanṭāwī Jawharī's ideas through the eyes of a German scholar, a contemporary of Ṭanṭāwī Jawharī. Hartmann examined Ṭanṭāwī Jawharī's contribution as a social and political thinker whose work had a much broader scope than the qurʾanic exegesis for which he was famous. Hartmann also used Ṭanṭāwī Jawharī's works to make a number of critical observations about the way in which Western scientific knowledge was being assimilated within the Islamic world at that time. Hartmann's own works broadly cover the early history of Islam, as well as providing contemporary analyses of Islam and the Arab world during the nineteenth and early twentieth centuries. During his life, Hartmann frequently commented on politics and society in the Muslim world; he "believed the British to be behind the appearance of Arab Nationalist ideas in Egypt . . . [and] . . . [B]y 1908, he had come to believe that Arab independence would follow only an arduous 'step-by-step' process of enlightening Arab Muslim opinion."[1] Hartmann, the founder of the Deutsche Gesellschaft für Islamkunde (German Society for Islamic Studies), an organisation dedicated to contemporary Islamic studies, was in contact with the famous editor of *al-Hilāl* magazine, Jurji Zaydan, who updated him on the latest news from Egypt. In 1916, Hartmann's article "Schaich Ṭanṭāwī Dschauhari, Ein Modaerner Egyptischer Theolog und Naturfreund" ("Shaykh Ṭanṭāwī Jawharī: A modern Egyptian theologian and nature-lover") was published in *Beiträge zur Kenntniss des Orients*. The article focused on Ṭanṭāwī Jawharī's theological ideas as well as his interest in nature, which were outlined in the three works *Jamāl al-ʿĀlam* ("The Beauty of the Universe") (Cairo, 1329/1911), *al-Tāj al-Muraṣṣaʿ bi-Jawāhir al-Qurʾān wa'l-ʿUlūm* ("The Crown Adorned with the Jewels of the Qurʾān and the Sciences") (Cairo, 1324/1906), and *al-Niẓām wa'l-ʿĀlam* ("Order and the Universe") (2nd edition, Cairo, n.d.).

An English translation of Hartmann's essay

Shaykh Ṭanṭāwī Jawharī: A modern Egyptian theologian and nature-lover
by Prof. Dr. Martin Hartmann[2]

The work of al-Ghazālī (d. 1111) remains essential. That great Imām represents a key stage in the development of Islamic theology,[3] and he continues to influence educated Muslims even today. But times have changed. Sharp minds who rely on his opinions today apply other sources as well, including Frankish ones. We may not be able to overestimate [the importance of] statements derived from this combination of al-Ghazālī's ideas and more recent sources, but it is important to acknowledge that such an approach is based on earlier works in order to avoid a complete departure from older wisdom, which would insult and frighten away the Muslim masses who are still under the spell of the rigid theology [found] almost everywhere in the [Islamic] world. In Egypt, Shaykh Ṭanṭāwī Jawharī, Professor of Arabic at Dār al-ʿUlūm University in Cairo, may be regarded as the main proponent of this contemporary synthesis of the old and new. Two of his works I have come across are *Jamāl al-ʿĀlam* ("The Beauty of the Universe," 2nd edition, Cairo, 1329/1911) and *al-Tāj al-Muraṣṣaʿ bi-Jawāhir al-Qurʾān wa'l-ʿUlūm* ("The Crown Adorned with the Jewels of the Qurʾān and Science," Cairo, 1324/1906). The first work can only be understood through the second, in which the author describes his spiritual development, although in a less profound and introspective manner than al-Ghazālī's *al-Munqidh min al-Ḍalāl* ("The Deliverer from Error"). Nevertheless, Ṭanṭāwī Jawharī provides us with a glimpse of the field and of the inner conflict of a modern Egyptian who becomes more likeable the more we immerse ourselves in his independent mindset, one which pursues problems of profound moral consequence.

Ṭanṭāwī Jawharī's al-Tāj al-Muraṣṣaʿ bi-Jawāhir al-Qurʾān wa'l-ʿUlūm

In *al-Tāj al-Muraṣṣaʿ*, Ṭanṭāwī Jawharī provides the background and recounts his reason for writing that book (pp. 2–4, excerpt):

> When the spiritual movement in Japan was on the rise, it came to my attention that I could pursue/implement my [old] plan, so I wrote *al-Tāj al-Muraṣṣaʿ bi-Jawāhir al-Qurʾān wa'l-ʿUlūm* in October 1905 [to briefly demonstrate the science of Islam]. My friend [al-ʿAllāma al-Fāḍil] Maḥmūd Bik Sālim (who chaired a committee) read it and he wanted it to be translated into other languages (and it may happen that *Allāh* helps him fulfil his plan) so that it may circulate extensively in Turkey, Persia and Russia (a young man from Kazan [*Qāzāniy*] is working on a Turkish translation). Then, in 1906, the Japanese congress met. While I was still uncertain whether I should send my Arabic booklet to the congress, a friend advised me to dedicate it to the Emperor of Japan so that he would present it to the congress [*ʿalā hayʾa al-muʾtamar*]. (Then I expanded my breast for it) I submitted it, referring to His majesty the Mikado together with a letter I sent.

In this letter, Ṭanṭāwī Jawharī briefly illustrated his study programme, or rather that he diligently studied at al-Azhar mosque (*Azharmoschee*), how he familiarised

himself with [Arab thinkers], Greek philosophers, and modern science, and how he compared them to the Noble Qurʾān (*al-ʿulūm al-ʿaṣriyya wa-muqāranatuhā biʾl-Qurʾān al-Sharīf fī l-madāris al-miṣriyya*). The result of this study, he stated in his letter to the Emperor, was presented in his modest work. He apologised for presenting his book to the Emperor and the congress in the original Arabic version instead of a language authorised by the congress;[4] but he did not want to miss the opportunity and hoped there would be a translator in Japan. He continued by saying that he considered publication in his own country (i.e. al-Miṣr) and among his own people more necessary, which is why he had had the work originally printed in Arabic.[5]

The Mikado[6] and the Japanese scholars were probably quite surprised by the letter.[7] If someone was found who could translate Ṭanṭāwī Jawharī's book into Japanese their amazement would probably have been even greater because his work emerged from a completely different cultural milieu, and one had to be familiar with the history of the Islamic faith in order to understand it.[8] Furthermore, it is likely that the Japanese understood little about Ṭanṭāwī Jawharī's slightly naïve report about his personal hardships and joys that were present in his book. It is also not very probable that Ṭanṭāwī Jawharī's work was as successful as he had hoped within Islamic circles, who were unfamiliar with the Japanese faith.

The *Tāj* itself is divided into 52 sections ("jewels"), of which the first eleven (pp. 5–45) include the author's personal observations. Ṭanṭāwī Jawharī mocks the theologians (*mutakallimūn*) who forget the beauty and order of the world/universe while occupying themselves with useless speculations (p. 9). In a short overview (pp. 10f), Ṭanṭāwī Jawharī describes the disaster that has ensued from incomplete translations of the Greek philosophers, resulting in limited understanding of theology and law and, in both cases, to the old schools of thought. Therefore, two classes of people exist: those who completely neglect the Qurʾān and those who only engage in the Islamic sciences based on old traditions and [also] prohibit independent research or deduction (*ijtihād*).[9] Through serious study of the Qurʾān, inspired by al-Ghazālī, Ṭanṭāwī Jawharī came to the conclusion that the Qurʾān contains all [knowledge of] science. The main part he addresses in detail is Q 2:164:

> Behold! in the creation of the heavens and the earth; in the alternation of the night and the day; in the sailing of the ships through the ocean for the profit of mankind; in the rain that Allah sends down from the skies, and the life which He gives therewith to an earth that is dead; in the beasts of all kinds that He scatters throughout the earth; in the change of the winds, and the clouds which they trail like their slaves between the sky and the earth; indeed, are signs for a people that are wise.

By contemplating this verse, Ṭanṭāwī Jawharī came to acknowledge natural science, as he wanted to understand the laws that are suggested in these divine words (pp. 14f). His questions were answered as he enrolled at *Dār al-ʿUlūm*, where he took classes in natural science.[10]

This education made him read the Qurʾān from a different perspective, and his studies became even more interesting to him (p. 21). During a break from his education, he observed nature in his hometown and, at the same time, read al-Ghazālī's *Iḥyāʾ ʿUlūm al-Dīn* ("The Revival of the Religious Sciences"), in which he found everything about nature that he had learnt at school. From the section about God's praise or worship (*al-shukr*) that mentions the beehives and their artistic arrangement, he began to understand that religion itself commands attention to [i.e. demands people to pay attention to] science and that the Arabs hold great treasures within their earlier works. He was extremely sad about the fact that the English had well-illustrated handbooks about natural science while the Muslims had to live with the remnants of a great past, the adolescence of Islam during the Abbasid period (750–1258 CE) (see pp. 25–28). He believed that the *ḥadīth* "Aim for high results from faith"[11] not only refers to "results from the religion of Islam" but rather means aiming for high results from knowledge through investigation.[12]

Ṭanṭāwī Jawharī especially admired the textbooks [composed] for English schoolchildren, believing they should also be taught in Muslim classrooms, with the addition of having the name of God (*Allāh*) mentioned in between (p. 29) such lessons.[13] Ṭanṭāwī Jawharī's encounter with the works of John Lubbock was also an important step forward. He particularly noted Lubbock's work "The Pleasures of Life" (*Masarrat al-Ḥayāt*). Ṭanṭāwī Jawharī indicated that Lubbock's admonition "Out of the dull rooms into forest and field!" can be found in the Qurʾān (7:185), "Do they not look into the realm of the heavens and the earth and everything that Allah has created and [think] that perhaps their appointed time has come near? So in what statement hereafter will they believe?" (p. 30). Ṭanṭāwī Jawharī argued that, like the individual, the public should also engage in the sciences of civilization (p. 31).

Ṭanṭāwī Jawharī claimed that the science of civilisation exists in the Qurʾān and thus it is incomprehensible that Europeans do not pay attention to the religion (*al-dīn*) that lies closest to their intellect and to their way of thinking (p. 32). Ṭanṭāwī Jawharī articulated these ideas in a letter to renowned British scholar Lubbock, adding material taken from his "The Order of the World and the Nations" (*Niẓām al-ʿĀlam wa'l-Umam*) under the title "The Blossom" (*al-Zahra*). Ṭanṭāwī Jawharī cited Lubbock's phrases alongside al-Ghazālī's work (pp. 32–34).[14] At first, Ṭanṭāwī Jawharī provided phrases from al-Ghazālī's *Iḥyāʾ* (chapter "The Love"; *bāb al-ḥubb*), followed by phrases from Lubbock, which he then compares with verses from the Qurʾān (pp. 35–37); similarly, phrases from Seneca[15] are placed alongside corresponding qurʾanic verses (pp. 46–50).[16] Ṭanṭāwī Jawharī argues that the West inherited the earth but with incomplete knowledge,[17] and their civilization was about to vanish (*ammā al-gharbiyyūn fa-qad warithū al-arḍ bi-mā ūtū min al-ʿilm al-nāqiṣ wa-lākin madaniyyatihim dhāhib ilā al-zawāl*) as they revolted against God, their Lord, because they did not build science on firm foundations (*ʿalā asās matīn*):

> If they believe that science is worship, just like prayers and sacrifice, and if they believe that they are indeed, in reality, religious, for which I can give

> hundreds of pieces of evidence, their civilisation would be the firmest among all and illegality and malignancy would vanish (pp. 54f, also 55).

Among the people of the West,[18] Ṭanṭāwī Jawharī found all kinds of strange things, including nihilists and anarchists (*al-fawḍawiyyūn*) [and socialists (*al-ishtirākiyūn*)] who deny life after death. Ṭanṭāwī Jawharī agreed with al-Shīrāzī's (d. 1640) explanation[19] in *al-Asfār* ("Journeys"), which states that, according to Qurʾān 6:38, all creatures are resurrected, even the mosquito (pp. 55–58a).[20] Ṭanṭāwī Jawharī also contends that explanations about living beings, and even the way plants and minerals build chains that ascend from a lower to a higher order, were expressed by Ibn Khaldūn (d. 1406),[21] Ibn Miskawayh (d. 1030) (in *Tahdhīb al-akhlāq*),[22] al-Rāzī (d. 1209),[23] and others; therefore, Darwin's theory of evolution would not be anything new (pp. 58–61).[24] However, the author (i.e. Ṭanṭāwī Jawharī) does not seem to know Darwin's doctrine (theory) at all.[25] Ṭanṭāwī Jawharī also writes that speech among animals has been sufficiently proven through the story of Solomon in Qurʾān 27:16–22 (p. 63), and cites additional verses from the Qurʾān about animals. He also briefly refers to Laplace's hypothesis about the formation of the world (pp. 63, 67).[26]

In section twenty-one (pp. 78ff) of his book, Ṭanṭāwī Jawharī attempts to classify the content of the Qurʾān. Islamic issues in the Qurʾān are divided into six groups: (a) the 700 verses (*āyas*) containing all science;[27] (b) more than one thousand verses that reject all kinds of superstition (*khurāfāt*), errors, and delusions (*al-awhām*) that derogate science, such as idols, amulets, and cauterisation;

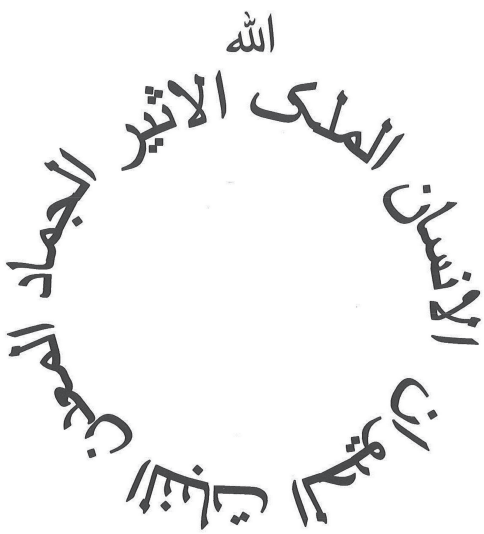

Figure 3.1 *Dāʾira al-wujūd* showing the circle of creation designed by Ṭanṭāwī Jawharī to reject the innovation of Darwin (Designed on the basis of the original that appeared in Ṭanṭāwī Jawharī's book).

Ṭanṭāwī Jawharī, *al-Tāj al-Muraṣṣaʿ bi-Jawāhir al-Qurʾān wa'l-ʿUlūm* (Cairo, 1906)

(c) the culture (*ʿumrān*) and political situation of civilisations – the majority of stories in the Qurʾān refer to this group (*wa'l-naẓar fī aḥwāl al-umam wa'l-siyāsāt wa-fī hādhā akthar al-qiṣas al-qurʾaniyya*); (d) more than 700 verses addressing ethics (*al-ādāb*); (e) worship (*ʿibādāt*), which means formal worship and ethics; (f) the order and regulation of human societies (*niẓām al-jamʿiyyat al-insāniyya*) according to their constitutions and [criminal] laws, which amounts to the order of the world itself and to religion, which is based on that order. These appear, as al-Ghazālī clearly outlined, in about 150 verses of the Qurʾān. Ṭanṭāwī Jawharī's main reason for employing this classification is to underline that science and knowledge are part of religion. For someone who is convinced of this, studying becomes an act of worship (p. 79). This idea is further reinforced through Ṭanṭāwī Jawharī's praise for *ʿaql* (intellect), something that is supported by the Qurʾān. Authentic *ḥadīth*s affirm that Islam is meant to be a religion of reason and thought, not a religion of blind emulation (*taqlīd*); if there is a conflict between reason (intellect) and tradition, reason should take precedence and tradition should be interpreted appropriately. If tradition cannot be accommodated, then the issue belongs to God alone [an excellent retort: that which God knows alone, the human being does not need to think about] (pp. 80–83).

In section twenty-three (pp. 83–89) (*al-aqsām mafātīḥ al-ʿulūm*), Ṭanṭāwī Jawharī's discussion of the covenants of God as the key to science is comparatively limited. We know that the Qurʾān's strange covenantal formulae, which were probably even incomprehensible to Muḥammad himself, originate from a circle dominated by a wondrous mixture of natural philosophy and mysticism. The naive mind is always fooled by these formulae, and I believe I am not insulting the "Philosopher of His Era," as Ṭanṭāwī Jawharī calls himself in the subtitle of his book *Jamāl al-ʿĀlam*, by attributing a considerable amount of naivety to him in this section. This suits his deeply religious mind, one that was also preoccupied with specific problems of natural science.

The end of the book (p. 143) is a chapter about science that begins by expressing eight problems and issues that are all dealt with briefly (pp. 144–161), and which are again cited very generally alongside several verses and *ḥadīth*s. It is worth mentioning the author's rejection of miracles, which are commonly believed in Islam; even though the Qurʾān itself continues to be the greatest miracle of all (pp. 147–153). Ṭanṭāwī Jawharī then attacks (with critical statements) those who thoughtlessly derive science from religion (*man akhadha al-ʿulūm min al-dīn bi-dūn fikir*), much as al-Ghazālī did in his *Iḥyāʾ*. Ṭanṭāwī Jawharī further criticises those who boast of their noble lineage (pp. 153f). He warns against excess in religion as Q 4:169 says,[28] cautioning that prophets (*anbiyāʾ*) should not be elevated to divine status and that saints should not be overly glorified. Ṭanṭāwī Jawharī recommends nurturing intellectual science and crafts (pp. 156–160) by pointing out that both Moses and Khiḍr had a profound love of science (Q 20:113).[29] According to Ṭanṭāwī Jawharī, the number of qurʾanic verses about science are in the majority, and al-Ghazālī was said to have compiled 763 of these reflections, which Ṭanṭāwī Jawharī planned to list later on. By contrast, according to Ṭanṭāwī Jawharī, verses on worship and social life consisted of no more than 150 verses. These verses were

supposed to be listed, but only *sūrat al-Fātiḥa* (pp. 163–166) and eleven verses of the second *sūra* are mentioned in the book (pp. 164–186).

This overview suggests that Ṭanṭāwī Jawharī held a traditional outlook on religious laws and *sharīʿa*.[30] Indeed, he was not aware of the fact that *sharīʿa* is a system established by humans based on religious sources, and that these sources, of which the Qurʾān is just one, are highly incomplete as a foundation for legal regulations. Another source, the holy tradition (*aḥādīth*), is an indiscriminate collection of sentences, among which no less than 90 per cent are strongly suspected of being fake; from the remainder, the greatest number refer to aspects of faith and rituals. Just as the people of the West (Westerners) have liberated themselves from clerical regulation of their lives, the Islamic world will gradually arrive at such inner liberation as well. This is achievable by serious study via the Scientific Method first established by Bacon. Analogical conclusions (*qiyās*) that still prevail in the Muslim world will be eliminated by this process. The inductive method had its greatest success within the field of natural science, and from there it built on its victory. In the Oriental world, a new era will evolve with the study of nature – an era of inner detachment from *sharīʿa*. In order for this to happen, the individual must develop an internal relationship with nature and acquire an affectionate relationship with animals and plants. Signs of this development are already evident in Ṭanṭāwī Jawharī's *Tāj*. Another example of this development is apparent in Ṭanṭāwī Jawharī's book (p. 55) *Jamāl al-ʿĀlam* ("The Beauty of the Universe").

Ṭanṭāwī Jawharī's Jamāl al-ʿĀlam

The great English nature lover and naturalist John Lubbock's influence on Ṭanṭāwī Jawharī's work becomes obvious when comparing the title of Ṭanṭāwī Jawharī's book *Jamāl al-ʿĀlam* ("The Beauty of the Universe") with the title of Lubbock's earlier work *The Beauties of Nature and the Wonders of the World We Live In* (1892). In Ṭanṭāwī Jawharī's short introduction (pp. 2–4), he describes meeting a friend at a festival in 1320/1902, one who wanted to receive proof of God's existence (*wujūd*) from him along with an explanation for evil in the world. A sort of theodicy follows, in a most innocent form, closing with Q 6:54: "Your Lord has decreed upon Himself mercy" (pp. 2–4).

To understand the author's thought process, citing the chapter headings will be sufficient: 1. Comparison between predators and medical doctors (animals practice medical hygiene by scavenging in many different ways) (pp. 4f); 2. The various ways people judge evil and good (*ikhtilāf al-ʿuqūl fī l-ḥukm bi'l-khayr wa'l-sharr*) (pp. 5f); 3. The human being is too quick and unsteady in his judgment (pp. 6ff); 4. People's (varying) degrees of knowledge (*darajāt al-nās fī l-maʿārif*) (p. 8); 5. Questions about good and evil relate to all humans and angels[31] (pp. 8ff); 6. Can the painful destruction of a civilisation be considered a mercy? (The elimination of groups unable to progress, such as *ʿĀd* and *Thamūd*, is salvation (pp. 10f). The disputant declares himself pleased with this problem, although it would not resolve the thousands of other problems; 7. The whole

universe consists of riddles and all sciences aim to solve these (a comparison of the universe with the Qurʾān using its *mutashābihāt* "ambiguous sayings") (pp. 12ff); 8. The wisdom of everything dying (pp. 14ff); 9. How evil can come from good (pp. 16f); 10. Do the Scriptures allude to these problems? (*hal ishārat al-kutub al-samāwiyya li-hādhi al-masāʾil*) (pp. 18f); 11. The ordering of the animal kingdom (necessity of knowledge about animals and their general levels) (pp. 19–25); 12. Species of animals/pets disregarded by humans (*anwāʿ al-ḥayawān fī buyūt al-nās wa-hum lā yaʿlamūn*) (pp. 25f); 13. Opinions of Western and Eastern scholars on the ranks and orders of animals (including those about nature's three kingdoms[32] and human beings) (*Ārāʾ ʿulamā al-mashriq waʾl-maghrib fī silsila al-ḥayawānāt wa-tartībahā*) (pp. 26–29); 14. The human being (pp. 29f); 15. The ape (*al-qird*) (pp. 30f);16. Predators/lions (pp. 31–33); 17. Anecdotes about dog and wolf (*laṭifatān . . . al-kalb . . . al-dhiʾb*) (pp. 33–36); 18. Cloven-hooved animals/livestock (*al-anʿām*) (pp. 36–45); 19. Birds (*al-kalām ʿalā al-ṭuyūr*) (pp. 45–47); 20. The bat (*al-khuffāsh*), which is not recognised as a mammal here (pp. 47–49); 21. The wisdom of God as seen in the owl (*ḥikma Allāh fī l-būm*) (pp. 50f); 22. The crow (*al-ghurāb*) – a comparison between the crow, the owl, and the farmer in the field (pp. 52–54); 23. Comparison between God's politics in the world and the politics of civilisation, and evidence for the existence and wisdom of God (*muqārana bayn siyāsa Allāh taʿālā fī l-ʿālam wa-siyāsa al-umam*) (pp. 54–58); 24. Birds of the water (*al-māʾiya*), birds of the air (*al-hawāʾiya*), and birds of the ground (*al-arḍiya*) (pp. 58–61); 25. Insects (grasshoppers, wasps, ants, spiders) (*al-ḥasharāṭ*) (pp. 62–87); 26. Worms (the cotton worm and silkworm) (*dūda al-quṭn wa-dūd al-qazz*) (pp. 88–93); 27. The seal/beaver (?) (*kalb al-baḥr*) (pp. 93–95); 28. The adequacy of the limbs of different animals (pp. 96f); 29. Animals constitute civilisations just as do humans (pp. 97–99); 30. The world is a university, with God as its master and humans its students (pp. 99–103); 31. War and whether world peace is achievable (pp. 103–112); 32. What is the wisdom in snake/serpent venom? (*mā al-ḥikma fī samm al-ḥayya*) (pp. 112–115); 33. Wisdom in human diseases (*ḥikma al-maraḍ fī l-insān*) (pp. 115f); 34. Pain and pleasure of the body (*al-alam waʾl-ladhdha lil-jasm*) and soul and how their use is appropriate in different circumstances (pp. 116f); 35. The seven spheres of heaven and the modern sciences (pp. 117–119); 36. Agreement among the Modern and the Old about the fact that there is no vacuum within this world (a short instruction about *jawhar* and *ʿaraḍ*) (*ijmāʿ al-muḥaddithīn wal-qudamāʾ ʿalā an al-ʿālam*: *lays fīh farāgh*) (pp. 119–121); 37. The essence of light (*ḥaqīqa al-nūr*) (pp. 121f); 38. Whether the world developed over time and the opinions of the philosophers on this issue (of course the eternity of the world is denied; the theories of development and atoms are attacked) (pp. 122–131); 39. Rationality and irrationality (pp. 131–132); 40. The angels (*al-malāʾika*) (p. 132); 41. What does the claim: "matter is composed of movements," mean? (*mā maʿnā qawluhum . . .*) (pp. 132–134); 42. Pre-determination (*al-qaḍāʾ waʾl-qadar*) (pp. 134–144); 43. Comparison of the whole world with the human body (the microcosm is a picture of the macrocosm, as mentioned on p. 25); the progress of the world is based

on doubt, dispute, and war, and these are the founding pillars of civilisation, as God wills (pp. 144–147); 44. Comparison of the arrangements of the senses (*muqārana tartīb ḥawās al-insān*), the levels of scholars, and the layers of animals; the uniformity of order within these different worlds and their being proof of God's existence, and, finally, Darwin's theory (pp. 147–154); 45. Evidence of the unity of God (*burhān al-waḥdāniyya*) (pp. 154f); 46. Moral admonition (*naṣīḥa*). The second edition includes a short summary of Ibn Ṭufayl's *Ḥayy b. Yaqẓān*, alongside which Robinson Crusoe is attacked on pages 157–175; pp. 175ff: The nature and acts of human beings; in principle there is no difference between Peter and Paul but the manner through which one knows about them; finally, on pages 177ff, "education as a means to gain independence" (based on the English model). Subsequently there are common *taqārīẓ* (commendations) and effusive praise such as that by Ṣāliḥ Ḥamd Ḥammād, who seems to be active in literature elsewhere.

The essays in this book are colourfully presented and contain much more than their titles express. They present chains of thought in which traditional and modern ideas are integrated and bound by the belief that God's eternal word, the Qurʾān, offers everything essential to solve all problems. Ṭanṭāwī Jawharī provides evidence for his explanations by citing numerous qurʾanic verses that, in most cases, and even assuming an orthodox Islamic interpretation, raise the question of the purpose of a verse at a specific point, because not even the slightest connection between a verse and the problem it is supposed to address can be identified. Such a method can be traced back to the earliest days of Islam and is the same concept as interpreting verses from the Old Testament through Christian sources and verses from both canons in Christian literature. At times, Ṭanṭāwī Jawharī employs many verses to prove one simple claim. It can be added here that poets are exploited as well, although poetic citations are very rare (e.g. p. 8).

Ṭanṭāwī Jawharī obviously is knowledgeable about the theological-philosophical literature of Islam but he has an imperfect understanding of Western science. Yet it must be acknowledged that he provides some beautiful depictions from the field of zoology, in which he was obviously affectionately engaged. The problems he faced [were] due to individual views [that] complicated his understanding, [ones] he did not want to confront, as [he believes] individual views only have the purpose of proving his main idea, that nature forces us to believe in one merciful, benevolent God. According to Ṭanṭāwī Jawharī, everything experienced by living beings serves the purpose of salvation for themselves and for humans. In many cases, his rationale is based on a pattern of shallow rationalism that connects theodicy to the notion of Leibniz[33] in the West, with the only difference being that Ṭanṭāwī Jawharī held on to Islamic orthodoxy, and held on to it in a way that was completely in harmony with this orthodox tendency. His comment "If we remain in a state of mockery about these wonders of creation and if we turn away from God's praise for its sake, then our civilisation comes to an end. Though our scholars and forefathers first set out on the path of knowledge, and though they were the teachers of the scholars of Europe who set the latter on the path to knowledge and science, the real leader was the Qurʾān" (pp. 48–49), shows how

incapable Ṭanṭāwī Jawharī was of recognising scientific values. There is nothing left to add to Ṭanṭāwī Jawharī's words here. He simply did not know, or did not want to know, that he owed this level of scientific knowledge, which was only availed of and preserved by a few outstanding minds among the Muslims (who were almost exclusively of non-Arab origin), to the heritage carried by Hellenism throughout all Western Asia.[34]

It is true there were some ingenious Muslim princes who had learned works of antiquity translated into Arabic by Syrian Christians, but it did not cross the minds of haughty Islamic scholars to review these translations. And there were also some Muslim men with a glowing heart and great talent who independently looked into the scientific problems they encountered in Arabic literature and in their occupations as medical doctors, pharmacologists, or astronomers. This knowledge should be no claim to fame for the frail guardians of Islam's theological tradition who believe in accepting modern science by blindly adopting and propagating all its respective results. It should be admitted that even this purely mechanical transition of knowledge from the Western scientific sources to the Oriental channels can have a positive impact, and that the facts conveyed without any rationale or digging any deeper may encourage others within the circles of Islamic scholarship to conduct further research into it.

However, it must be repeatedly emphasised that the Islamic scholars of the Orient must get down to the business of eliminating the dead by replacing the orthodox practice of reasoning that arrives at conclusions by analogy (*qiyās*) with the practice of rational induction. The developments of Western philosophy must be made available in the Arabic language (*bi'l-lugha al-ʿarabiyya*) and some primary works must be made available as translations. Immanuel Kant's "Critique of Pure Reason" should not be difficult to make available considering the abundance of ancient Arabic terminology and the extraordinary and effective power of this magnificent language. It would be welcomed with joy by a great number of the agile minds with which Syria, Egypt, and Iraq are rich.[35] These are the tasks the truth-seekers of the Orient must solve today, rather than rely on compilation pieces in European handbooks alongside pious pronouncements.

al-Niẓām wa'l ʿĀlam[36]

A third book by Ṭanṭāwī Jawharī was made available to me through the kindness of Dr. Horten of Bonn, namely *al-Niẓām wa'l ʿĀlam* ("Order and the World") (2nd edition, Cairo, s.d.; 270 pages, 8^0). The prologue (pp. 2–7) describes the pleasure and delight a wise man takes in nature, one who was inspired by the Holy Qurʾān (*al-Qurʾān al-karīm/al-sharīf*) through various verses. Certainly, interest in nature has markedly declined among Muslims, yet Ṭanṭāwī Jawharī claimed he always felt an enthusiastic desire for knowledge of the universe, and used to spend his holidays observing it. This book is thus a product of his own interest in nature.

The introduction begins with Adam (Ādam), then briefly describes Muḥammad via Abraham (Ibrāhīm) and Moses (Mūsā), etc., and praises the achievements (and success) of the prophets. People, however, attempt to derive an advantage

from the knowledge introduced by the prophets and deduce conclusions from it, thus reaching, according to their abilities, a state of happiness. Some fail to adhere to the dogma of religious belief but do not fail to move along the path to civilisation and a [good] earthly life. Ṭanṭāwī Jawharī's book is divided into three parts: (a) "The Desire for Science" (pp. 24–108); (b) "Testing the Understanding of the Essence of Narrations in the Qurʾān," (pp. 108–173); and (c) "Who is Responsible: Kings, Scholars (Theologians), or the Masses and the Subjects?" (pp. 174–240).

In the first part, Ṭanṭāwī Jawharī addresses the familiar challenge of reconciling intellect with tradition and harmonising knowledge with belief. Ṭanṭāwī Jawharī presents these issues in the form of a conversation between a teacher and his student. The student's scepticism is met by highlighting the fact that the Qurʾān instructs Muslims to observe the wonders of nature, such as the filaments and pistil of the flower, which are beautifully described. Ṭanṭāwī Jawharī claims that the laws of nature are everywhere: in hexagonal honeycombs and snowflakes, for example, and these are also found in the Qurʾān: "God has created everything with perfect beauty, and complete accuracy" (*itqān*). Yet Ṭanṭāwī Jawharī claims that humans walk alongside God's miracles unconcerned and oblivious. They read books and study science but remain dumb, as God said in the Qurʾān (12:105).[37] Ṭanṭāwī Jawharī believed that people can find the oneness of God in the immensity of creation, as described in the Qurʾān (27:61). The student in Ṭanṭāwī Jawharī's dialogue wants evidence for these principles through an analysis of nature. He examines wheat and notices that grains come in thousands of sizes, while the potato, however, is different. Nature's bounty is carefully differentiated. Such a heavenly order quiets the mind, implying God's rule (pp. 28–33). The student objects: How about those matters not observable through one's senses, given the fact that modern science only aims to regard as truth that which is observable through one's senses? (p. 33). Ṭanṭāwī Jawharī's reply invokes the order of the stars and eternal laws, as can be read in various qurʾanic verses (pp. 34–36).

Ṭanṭāwī Jawharī draws two considerations from these principles: first, he argues that they indicate divine decree, *qaḍāʾ wa-qadar*; and second, there is the continuation of life after death (*baʿd al-mawt/ḥayāt al-nufūs baʿd al-mawt*). The student readily accepts these arguments regarding predetermination (pp. 36–44), [which are] based on the claim that man judges according to analogy alone, and therefore concludes that everywhere in the world it must be the same. However, when we travel and study, we realise this is wrong. In order to arrive at an accurate judgement and in order to produce something [worthy of consideration], the local context must be taken into consideration. Ṭanṭāwī Jawharī argues that people from the West act with [precise] consideration (*tadbīr*), while people from the East do everything in a general way. Therefore, Westerners are superior (*arqā*) in economics because their love for change is to their advantage (pp. 38–39). Laws and regulations (*niẓāmāt*) can only exist when they are intentionally arranged (*tartīb*). According to Ṭanṭāwī Jawharī, this *tartīb* is the *qaḍāʾ*, "God's decision (determination)." Furthermore, to act according to this intentional arrangement is *qadar,* "God's measurement." Without these

two principles, a lawful life would be impossible. For example, in a school or government where laws and regulations are not intentionally arranged, the programme is not followed and order breaks down (p. 41). It is strange that humans do not understand this principle, as, for Ṭanṭāwī Jawharī, its origin results in it only being comprehensible through *taqlīd* ("traditional emulation") or *burhān* ("evidence"); evidence is the remit of only a small cohort of scholars, since the majority fail at reaching logical conclusions.

Then the student raises the captious question of the Qurʾān's attitude to the way the people adduce evidence on the issue of *qaḍāʾ* and *qadar* (p. 41f.). The answer is deliberately dark: "That is a truth meant to generate (or: "for the purpose of") futility; knowledge meant to generate ignorance; happiness/fortune meant to generate misery; only the inert and weak of every people that has fallen into decay operate with;[38] the Qurʾān belies these people. There then follows some qurʾanic verses from which the error of these views can be proved: Q 16:35 and 6:148. Both passages are analysed in-depth (one wants to believe that Ṭanṭāwī Jawharī follows in the footsteps of his teacher Muḥammad ʿAbduh, who was a specialist in qurʾanic exegesis and whose lectures in *tafsīr* have been printed primarily in *al-Manār* ("The Lighthouse"), the famous Cairo magazine of the Syrian Rashīd Riḍā. Also, Q 36:47 is mentioned regarding the weakness in faith of some Muslims, who do just like the unbelievers. They shirk from feeding the needy, since God would have given them if he wanted. Such inverted beliefs can be found in all religions, and it would be an undeserving defamation to claim that the religion of the Muslims would dictate their laziness and dormancy; furthermore, it would be a defamation of the Europeans to claim that Islam was the enemy of civilization simply due to this belief in pre-determination.

Ṭanṭāwī Jawharī's second consideration is "the life of the Souls after death" (pp. 45–56), and he complements well-known qurʾanic verses with references to [Ṣadrā] al-Shīrāzī's *Asfār*, al-Ghazālī's writings, al-Ṭūsī,[39] and al-Rāzī's commentaries on *al-Ishārāt* [of Ibn Sīnā (Avicenna)] ("The Directives"),[40] as well as Ibn Sīnā himself and al-Fārābī, about the correspondence (*tashābuh*) between the two worlds. Ṭanṭāwī Jawharī then returns to the dialogue with his fictional young student in order to present a conversation on natural science, one dealing with the laws of shadows, the change between night and day, the wind, and so on and so forth (pp. 56–63). Ṭanṭāwī Jawharī is critical of those who have studied modern science but have lost sight of God's miracles, because the fact is that God has already spoken of all the issues of modern science.

Ṭanṭāwī Jawharī added a comment in this context that is quite remarkable. In Egypt, and in Islam in general, there are two kinds of scholars (p. 62): scholars of the spiritual life (*ʿulamā bi-ḥayāt al-rūḥ)*, such as the professors at al-Azhar, and scholars of the material life (*ʿulamā bi-ḥayāt al-jism*), such as university graduates. Both groups are unfamiliar with, and opposed to, each other, and apparently even insult one another. If each knew the other, even in the most general terms, there would be brotherly unity, as it is said in the chorus of the Qurʾān in Q 2:102, and Q 55:16: "So which of the favours of your Lord would you deny?"[41] In Ṭanṭāwī Jawharī's eyes, "life science" and religious science complement each

other; they are like twins, like two hands, knowledge and might, birth and life. The Qurʾān offers a beautiful promise in Q 12:87: "Indeed, no one despairs of relief from Allah except the disbelieving people." As a result, each individual in these two groups prays the supplication of Moses (Q 20:25–35): "My Lord, expand for me my breast; and ease for me my task; and untie the knot from my tongue; that they may understand my speech; and appoint for me a minister from my family; Aaron, my brother; increase through him my strength; and let him share my task; that we may exalt You much; and remember You much; indeed, You are of us ever Seeing."

Ṭanṭāwī Jawharī also addresses the rebirth of theological studies, "al-Aḥkām al-Sharʿiyya waʾl- Qurʾān" (pp. 63–71). He criticises two well-known Islamic practices: (a) following only one Imām; and (b) a hardening of the mind due to the examples provided in various Islamic texts. Ṭanṭāwī Jawharī believes traditional *ijtihād* is a blessing and the *medicine* for the problem of emulation. Naturally, Ṭanṭāwī Jawharī's approach to interpretation is slightly naive: he proposes a commission (*lajna*) that will produce a collection of teachings and schools of opinions (*aqwāl*) that are appropriate for contemporary times (pp. 66f) – as if not enough has been published on this topic already. When it comes to the second problem, when one gets stuck on examples of Islamic texts, Ṭanṭāwī Jawharī deals with different practices and patterns of jurisprudence (*ʿilm al-fiqh*); he highlights *farḍ al-kifāya*, such as the *fuqahāʾ* leading the prayers for the dead, the response to greetings and the like, as well as general crafts. This discussion leads Ṭanṭāwī Jawharī to complain that everything in the Muslim world, from the nail to the engineer, must be obtained from abroad. Ṭanṭāwī Jawharī argues that the Islamic community is currently in a state of great need, in two ways: it has a need derived from [its material] need (deprivation, *al-ḥāja*), and a need derived from its ignorance (*al-jahl fī l-dunyāʾ*). Ṭanṭāwī Jawharī suggests that this is due to a lack of motivation, and he refers to the qurʾanic verse 39:26 (= 68:33): "And the punishment of the Hereafter is greater, if they only knew." He then alludes to the explanation of al-Shāfiʿī in *Risāla* (chap. *ʿilm*) and to al-Ghazālī's *Iḥyāʾ*. Following this, the rewards for work are discussed in detail (68f.); especially noteworthy is his reference to commercial work carried out inside prisons, and to the reward that Cowles (?) Pasha,[42] the general director of the prisons, gets in this regard.

Ṭanṭāwī Jawharī then discusses the schooling and teaching system (*al-siyāsa wa ṭarīq al-taʿlīm*) (pp. 71–78). First, he provides an overview of Islam, its initial flowering, and the beginning of its decline (einsetzenden Verfall) around 200 AH (800 CE) (usually the author deals with European data/dates) [Here, the reviewer does not allude to Ṭanṭāwī Jawharī's references to Umayyad and Abbasid dynasties]. He mentions the Crusades and the Mongol invasions/disaster, and complains about the weakness of science in the Muslim world; writings on these are entirely insufficient, he claims. Ṭanṭāwī Jawharī believes that the British system of education was the secret to Anglo-Saxon progress. He compares it to the narrow-minded approach of the Orient, which he says allows youths to start serious study only at the age of fifteen and [even] then leaves them [merely] meandering through some compendia like donkeys on treadmills/grist mill/horse mill. In a conversation

with his former teacher from the al-Azhar school (p. 73f.) these thoughts are further elaborated. Ṭanṭāwī Jawharī praises the educational benefit of travelling, as Ibn ʿArabī (d. 1240 CE) and Ibn Khaldūn (d. 1406 CE) both advocated. "Speech and speakers in Islam" (p. 78–83) correctly evaluates the true art of speaking and hearing. Limitations regarding giving speeches for the main prayer on Fridays made by Abū Ḥanīfa and al-Shāfiʿī (p. 81f.) are correctly mentioned. This is followed by "Religion and social ties" (pp. 83–89). In this, Ṭanṭāwī Jawharī uses a sociological lens to explain that "Religion is the strongest base on which the pillars of social ties between individuals are built, more connective than any other single bond such as race, fatherland, and language." Ṭanṭāwī Jawharī believes the tie of religion is the strongest owing to its connection with the Creator of all beings and its persistence until death. Ṭanṭāwī Jawharī presents this as a topic he wants to analyse. He starts from some distance away, with self-awareness, which is supposed to be an immaterial fluid (fine material) fallen from a higher world, perceived as a forceful crown (i.e. *rūḥ*), about which he speculates now. The individuals, however, are held together through religious ideas, customs, and habits that reflect on the *rūḥ*. Of all the ties, that of religion is the strongest, awarded by (a) its connection with the creator of all beings; and (b) its persistence until death. This tie is compared with the tie of race, in comparison to which the other ties, that of the fatherland and that of language, are much weaker. It is naive to believe that the Aws and the Khazraj would have been in possession of religious unity, but split up otherwise, until Islam brought complete unity to them (see Q 3:103).The strength of the religious bond is demonstrated in Islamic history by the bold appearance of Muʿāwiya (d. 680 CE) against the emperor of Ostrom,[43] and in more detail by the tremendous operations of Sultan Muḥammed al-Umawī of Granada, who abandoned all sorts of abuses, such as whipping for crimes,[44] and promoted arts and sciences, as did Louis (Ludwig) XIV and Colbert. For this reason, Granada maintained itself solely through the strength of the religious bond. Ṭanṭāwī Jawharī also cites Western examples to illustrate his point that the religious tie is the strongest social and political bond, alluding to "the manner of gathering of a single religious community (*umma*) and its falling apart" (pp. 90–95) into violent nations. He argues that the wars led by the Western powers and their fragmentation into nation states is decay, all of which is proven by qurʾanic verses.

In the section of the book called "Did the Qurʾān Order Progress?" (pp. 95–102), Ṭanṭāwī Jawharī is critical about Muslims who have put themselves in such a poor situation by disobeying God's word. He argues that Islam introduced the most glorious world order, as proven in several verses of the Qurʾān. Ṭanṭāwī Jawharī points out that in early Islam, when an early traditionalist Islamic scholar was asked "What books do you read?", he would reply, "Four books (*fa-qāla arbaʿa kitāb*): the Qurʾān (*al-kitāb al-munzal min al-samāʾ*), the books of *riyāḍiyyāt* (mathematical science), the books of *ṭabiʿiyyāt* (naturalia), and the book of the visible world and its work (*wa kitāb hādhā al-kawn al-mushāhad wa mā fīh min al-āthār*)." But the scholar also added, "our methods in academic activities are weak and therefore we have no prospects for a new life; there is no travelling, nor

is there any attention paid to the situation of contemporary civilisations, while this is *farḍ kifāya* ('communal duty')" (pp. 102–108). "The progress" only includes some generalities with some evidence from stories of the Qurʾān.

The second part, "About understanding the narratives/stories in the Qurʾān" (pp. 108–174), starts with a complaint about the fact that his contemporaries neglect the stories ("erzählungen") of the Qurʾān and see things in them which are only of interest for historians (pp. 108f.). But other stories are also of great importance for the nation as a means for education, such as *Kalīla wa-Dimna*, *Fākiha al-khulafāʾ*, the *Maqamāt al-Ḥarīrī*, or *1001 Nights*, even though they are not serious enough. The most beautiful and highest stories are, however, to be found in the Qurʾān. After some general explanations the author gets to the story of Joseph, as it is mentioned in Q 12, and deals with it and its numerous lessons found in it up to page 157. In this, he intersperses a Fellah mourning the disappearance of *Abū Qirdān* (cattle egret), which is supposed to be indispensable for the country due to its destruction of vermin; he accuses the Europeans for being responsible as they hunt the bird (pp. 142–145). Another, more detailed conversation about this bird is held (*muqābala*) with the honorable Shaykh Muḥammed [Abū] ʿAskar (pp. 145–148): the author agitates extremely passionately against the killing of this useful animal through the stupidity of humans of the lowest classes (*awbāsh*), who hunt them in order to decorate women's hats with its feathers in Europe. Further stories of miracles in the Qurʾān are then highlighted, while some speculations about language issues are also made.

In the third part of the book (pp. 174–180), Ṭanṭāwī Jawharī addresses the question of authority. He explores the roles of rulers (*mulūk*), theologians/religious thinkers (*ʿulamā*), and the masses (*al-ʿāmma*) in detail. He claims that, during a crisis, each of these groups accuses the other. An answer for the tendency of the theologians to accuse the rulers is given in a strange manner, which the poet al-Farazdaq (d. c. 732 AD) attributed to Ḥusayn when he asked him about the people of Iraq: "The hearts are with you, however, the swords are loyal to the Umayya clan" (*al-qulūb maʿakum wa'l-suyūf maʿa banī umayya*) (p. 177). The answer is explored in the second section (pp. 180–187): [Ṭanṭāwī Jawharī argues that] everyone is responsible for his own actions, yet two kinds of people can be distinguished: those who think and those who act. Among the first group are the scholars and some of the rulers, while the second group comprises everyone else. If one compares a nation to the human body, according to Ṭanṭāwī Jawharī, the thinkers are like the bodily senses and the doers are the limbs; each sense and each limb has its purpose, just like every individual in a nation carries out the profession that suits his natural talent and in which he finds joy. Social life is affected by the secret of unity through diversity. Scholars of a nation are akin to the intellect of an individual; the makers of a nation, such as artisans, merchants and farmers are like the strength of the individual. The complete order of social life is constructed through all of them collectively.[45] The people of the West have understood this: each and every one of them understands himself as a free king with the limbs as his subjects; he is the richest and most powerful person in the world, even with no helper. Ṭanṭāwī Jawharī believes this is in accordance with the following

words of the Qurʾān (52:21): "Every person, for what he earned, is retained," and (2:48 and 117): "And fear a Day when no soul will suffice for another soul at all, nor will intercession be accepted from it, nor will compensation be taken from it, nor will they be aided." Ṭanṭāwī Jawharī insists that nobody has the right to excuse himself from any action because he is lacking a specific ability. Every Muslim is motivated; the true religion is loyalty to God and His messenger, the Imāms, and the entire community. In Islam, everyone is obliged to strive for the highest possible perfection, whether he is experienced in either religious or worldly things, as expressed in al-Fārābī's work on the model state and in Ghazālī's *Iḥyāʾ*. Ṭanṭāwī Jawharī, as an example, observed that Arabic newspapers had great influence on inciting action towards general welfare and generating new feelings within the nation. However, their journalists are not referred to as "scholars" in everday parlance, even though they are in fact scholars in their own particular field. Likewise, the people of a society who are responsible for enhancing agriculture fulfil a duty of representation and earn a great reward, as mentioned in Q 18:30: "We will not allow to be lost the reward of any who did well in deeds." Degenerate nations should regard this as a friendly warning; in this, the Japanese, Greeks, Italians, and Americans serve as examples for Ṭanṭāwī Jawharī. Finally, mentioning the wives of the Prophet from Q 33:30–32, he cites evidence to show that the higher one's position, the more responsibility one has, and several professions from the king to the farmer are mentioned according to the rank of each.

The last part of the book (*khātima*, pp. 187–240) deals with the "beauty (*jamāl*) and order (*niẓām*) of the world." Here, Ṭanṭāwī Jawharī wishes to highlight the miracles of nature to the intelligent reader. Ṭanṭāwī Jawharī claims people feel sensation when engaging in science, one that divides people into three categories: those who feel no sensation at all, those who only feel a partial sensation, and those who feel it completely. He claims the last group are the prophets' heirs, whom he refers to as "the Wise Men."[46]

Studying at school alone is not enough. There are two ways to arrive at the destination: theology and the cultivation of style. Theology has long been neglected in the Orient; this is a great evil, as it also covers the ten categories, in which all sciences are included; he then enumerates these ten categories. Cultivation of style is essential in order to give the people an understanding of everything; the highest paradigm of this being the Qurʾān. Even the people from the West employ it widely in order to motivate the youth to academic activities. Following the Qurʾān, other examples are listed in five essays (*risāla*). In *Risāla* 1 the scene: "The Bank of the Nile with View on the Fellah in the Field," begins with an impressive description of the Nile. He then turns to the dull life of the fellah of working, eating, and sleeping. However, the other classes do not get away much better, because even the people of science only aim partially high, so they do not act very different from the fellah in his field. But the individual also experiences both situations: now he is a noble king, soon he is in the cattle shed. History shows us that only those who fully served humanity had an understanding of both; those who freed their minds and who found laws with their intellect, but who also openly strived for their nations to reach higher, such as the likes

of al-Ghazālī and Ibn Sīnā, and, later, the great scholars of Europe who brought their nation progress through their research and also worked for it in everyday life. The leaders of the nations from different generations were not the kings and sovereigns, but those wise people, who adjusted according to time and place: they may be called "the Godly/Men of God" (*rabbāniyyūn*), then "the Wise Men" (*ḥukamāʾ*) or "journalists," and other names. Everywhere one can find a generation with intense love for science travelling along with the soul and stopping with the soul. The love of science never leaves anybody who has grasped it once.

In the second *risāla* (pp. 202–213) "Melodies and Sciences" (*al-Naghamāt wa'l-ʿUlūm*) are discussed. When mentioning melodies, he is generally referring to rhythm, which expresses itself in various ways, such as, for example, in the composition of oxygen and hydrogen (1:2), which has an impact on water; this rhythm is further present in the movement of tree branches in the wind, the chant of the birds, and even the sixteen Arabic meters. It is a simple fact that between the world of sounds and their melodies and the elements and their composition there is a single structural relationship without which no shapes or melodies would exist. The one who understands this has grasped the idea of the saying of the Greek wise men: "the world is music."

Finally, the author differentiates between two kinds of music: general music, i.e. the gauged, sensational melodies in which both humans and animals participate, and which brings harm and lures the youth to destruction; the second kind is the special, all-encompassing music, which has fixed measures and moves in constructive relations. To this he includes everything that exists in nature and science; the thinking person finds these measures everywhere and is able to comprehend from them what is meant in the Qurʾān when measure, scale, and weight are mentioned. The sensation he feels in it, without any machine, without any musical instrument, is always with him, wherever he goes; all that he hears, smells, sees, tastes, touches, all that enters his imagination, be it shapes, figures, science, or knowledge, is "music" through which he gets into the mood. This music bears the fruit of the serenity and perfection of the soul, and the advance and civilisation of the nation.

In the third essay (*risāla*) at the end of the book, entitled "The Beauty of the Stars and the Progress of the Nation" (*Jamāl al-Nujūm wa-Tarqiya al-Umma*) (pp. 213–228), Ṭanṭāwī Jawharī employs astronomy, aesthetics, and theology to present his arguments. Only very general truths are pronounced here. For example, in the section about observatories (*al-marāṣid* pp. 214ff.) he could have alluded to the enormous remains of the great observatories of Ṭūsī in Samarqand, which were found and described by Russian explorers, as well as the general remarks about those observatories in the early days of the Abbasid dynasty. However, the author does not have any knowledge of this, as such discoveries had come to the people of the Orient quite late (the attentive and intelligent mediator for scientific research of the West, Jurji Zaydan, passed away some time ago). Among these general statements, there are some that highlight an insight uncommon within the Orient, and which will be very useful for raising awareness. He opposes the belief that the people of the West achieved their success by virtue of their

military equipment and military science. Instead, he argues that these were, in truth, merely the results of their research in the natural and mathematical sciences. He tirelessly argues against studying for the sole purpose of earning money, which will be abandoned immediately upon reaching the goal (p. 225). The essay closes with harsh criticism of Muslims in general, and Egyptians in particular, for not encouraging their younger generations to practice science. He concludes this with a fiery appeal for change in an address to the educated and powerful. The fourth *risāla* "Science and the Light of the Sun" (*al-ʿIlm wa-Ḍiyāʾ al-Shams*) (p. 229–234) is simply a continuation of the prior one.

In the fifth and final essay, which states that "the things observable with the senses/phenomenal worlds are a prison for the ignorant and a paradise for the knowledgeable (*al-maḥsūsāt sijn al-juhalāʾ wa-janna al-ʿulamāʾ*); the earth is like a bride to them (*al-arḍ lahum ʿarūs*), adorning herself in an empty space (*ta-tajallī fī l-faḍāʾ*)" (pp. 234–240), Ṭanṭāwī Jawharī gives free rein to his imagination. He discusses the miracles of nature, especially of the stars in the sky, and how these miracles are presented in European literature. The essence of the essay, however, is the scientific preoccupation with these matters. Only through such a preoccupation can they become a paradise for the knowledgeable, for whom the earth is like a bride manifesting herself in resplendent jewellery within the universe.[47]

Yet as laudable as Ṭanṭāwī Jawharī's efforts may be, it must also be acknowledged that all this praise for practising serious science and all the references to the achievements of the West carry little prospect for genuine progress, as genuine progress can only be achieved by sending hundreds of young Egyptians, Syrians, and Iraqis to the schools of Europe, in order to acquire the solid foundations of the many areas that form the basic conditions for the prosperous and independent continuation of work. Those who have completed these foundations may then divide themselves according to their skills: some may return to their home country; others may acquire a higher level of education in the land of studies, and the best among them may acquire insights by travelling to cultured lands and by communicating with the greatest minds so that they may be appointed leaders. At the moment, men like Ṭanṭāwī Jawharī render an excellent service to their people and beyond, to (those in) other Islamic nations in which Arabic is read, by arousing the masses through awakening the passion to familiarise oneself with the works of the people of the West, about which it is spoken here with respect and understanding, as usually hard to find among Arab Muslims.

Notes

1 M. S. Kramer, *Arab Awakening and Islamic Revival: The Politics of Ideas in the Middle East* (New Jersey and London, 2009), p. 74.

2 Martin Hartmann, "Schaich Tantawi Dschauhari. Ein Moderner egyptischer Theolog und Naturfreund" (1916), pp. 54–82. As well as the annotations, I have added and changed many points in English and Arabic where required. To ensure accuracy, I have compared the German essay with the original Arabic works of Ṭanṭāwī Jawharī. I am also grateful to Prof. Rippin for sending me a copy of this article. Needless to say, all errors are my own.

3 *Ḥujjat al-Islām* Muḥammad al-Ghazālī (b. 1059/451, d. 1111/505) was an Islamic scholar who is regarded as having, around the year 1100, contributed to a new spiritual orientation in Islam and to its whole spirituality. However, this is only partially true. He did not take the most crucial step, and so the evil was not eliminated at its root. While he was able, through serious striving, to acknowledge the ineptitude of the speculative method, which at that time dominated spiritual life (there were only a few inwardly free mystics who openly spoke out, and who had to pay for it), and while he was also able to achieve a truly religious connection, he remained arrogant in his belief that "the people" could not live without the ties of a strong, institutionalised religious structure, and therefore the dominant class of the "knowledgeable," i.e. those with traditional ideas about God's nature and prophecy, remained in control. In other words, scholasticism continued to rule the minds.

4 Ed.: According to the original text, he did not openly apologise but started this sentence with: ". . . dedicate this to His majesty in the Arabic language, the language of the religion of Islam" (p. 4).

5 Ṭanṭāwī Jawharī, *al-Tāj al-Muraṣṣaʿ bi-Jawāhir al-Qurʾān wa'l-ʿUlūm* (Cairo, 1906).

6 Ed.: a term for addressing the emperor of Japan.

7 Ed.: It is not clear whether the Japanese were pleased to see an Arabic book. However, Ṭanṭāwī Jawharī's family archives say that he received feedback from some world leaders. I could not personally find any response from the emperor of Japan, although more investigation is required to arrive at a firm conclusion.

8 Ed.: Hartmann's remark is correct because Ṭanṭāwī Jawharī's writings show he paid particular attention to Islam and the Muslim world.

9 Ed.: On page 11, Ṭanṭāwī Jawharī says that people are divided in two groups: those who study philosophy and those who study *fiqh*.

10 Ed.: According to the table, Ṭanṭāwī Jawharī was at Dār al-ʿUlūm twice, as a student in 1889 and as a teacher in 1895. Ṭanṭāwī Jawharī explains these issues in section 7 (*al-shawq ilā al-ʿulūm*).

11 This can also be interpreted as "Aiming high is a part of faith," as it is said in a particularly famous tradition that "love for one's homeland is a part of faith."

12 Ed.: This idea is also expressed by contemporary scholars who attempt to display harmony between Islam and science. For further information, see S. Bigliardi, *Islam and the Quest for Modern Science: Conversations with Adnan Oktar, Mehdi Golshani, Mohammed Basil Altaie, Zaghloul El-Naggar, Bruno Guiderdoni and Nidhal Guessoum* (Istanbul, 2014).

13 Ed.: Using modern educational technologies to familiarise students in the Muslim world with science and nature is still recommended by renowned Muslim Islamic studies scholars. For instance, Adnan Oktar, known as Harun Yahya, said, "I would like to teach the history from movies, as a film to the students, and whatever they can remember by heart, they can like that"; Stefano Bigliardi, *Islam and the Quest for Modern Science*, p. 50.

14 Ed.: It seems that Ṭanṭāwī Jawharī emphasised the priority of al-Ghazālī, who produced new/different commentaries on qurʾanic verses in the fifth and early sixth centuries AH.

15 Ed.: Seneca (d. 65 CE) was a famous Roman imperial philosopher; see Katja Vogt, "Seneca" [Online source]. In the Arabic version, Ṭanṭāwī Jawharī calls him "al-ḥakīm Sanbīkā al-Rūmānī."

16 Ed.: Indeed, this comparison is found in the section *muwāzana bayna ārāʾ ʿulamāʾ al-mashriq wa'l-maghrib*.

17 Ed.: Such claims are also found in his *tafsīr*.

18 Ed.: Ṭanṭāwī Jawharī's original books have "al-Aḥzāb fī urūbā."

19 He is referring to Ṣadr al-Dīn al-Shīrāzī, who dealt with *Horten* in "The Philosophical System of Shirāzī (d. 1640)," Strasbourg, 1913. Ed.: He is known as one of the most influential Muslim philosophers of the last four hundred years. His works are still taught in Iranian universities and *ḥawza*s.

20 Ed.: "There is not an animal (that lives) on the earth, nor a being that flies on its wings, but (that forms part of) communities like you. Nothing have we omitted from the Book, and they (all) shall be gathered to their Lord in the end" (Q 6:38).
21 Ed.: A great Arab historian
22 Ed.: A Persian polymath
23 Ed.: A famous Muslim exegete
24 Ed.: This point was made in a section entitled *Laysa madhhab Darwīn jadidan* ("Darwin's school of thought/Darwinism is not new"). To show classical Islamic arguments, Ṭanṭāwī Jawharī drew a circle (*dāʾira al-wujūd*) below the name of Allāh (p. 59).
25 Ed.: It seems Hartmann assumed that Ṭanṭāwī Jawharī was not fully familiar with Darwin's theory.
26 Ed.: Hartmann and Ṭanṭāwī Jawharī are probably referring to Pierre-Simon Laplace's (1749–1827) nebular hypothesis that deals with the formation and creation of the solar system.
27 I keep the translation for *āya* as "verse," in accordance with the divisions of the Old and New Testaments.
28 Ed.: "Except the path of Hell; they will abide therein forever. And that, for Allah, is [always] easy."
29 Ed.: Hartmann occasionally refers to incorrect numbers of verses (not content), which I have corrected.
30 Ed.: For more about Ṭanṭāwī Jawharī's views on science and religion, see Majid Daneshgar, "An Approach to Science in the Qurʾān" (2015), pp. 32–66.
31 Ed.: This is not a new section of the book; it is part of section 4.
32 The world of plants, animals, and minerals
33 Gottfried Wilhelm von Leibniz (1646–1716) was "a German philosopher, mathematician, and political adviser, important both as a metaphysician and as a logician and distinguished also for his independent invention of the differential and integral calculus." [Online Source].
34 Ed.: This is still denied by many Muslim thinkers.
35 Ed.: This demonstrates that Hartmann was an Arabist.
36 Ed.: It seems Hartmann is referring to Ṭanṭāwī Jawharī's famous book *al-Niẓām wa'l-Islām*.
37 Ed.: "And how many a sign within the heavens and earth do they pass over while they, therefrom, are turning away."
38 The author by no means intended to allude to the Turks. However, it may be mentioned here nevertheless that the issue raised by him is in line with a great number of Turks insofar as it operated with the "Kismet," which is called "kaza we kadar" (Ed.: this is *qaḍā wa-qadar*) among higher Turkish circles. Belief in *Kismet*, in the sense of an inescapable fate against which no human effort can prevail, is widespread among the Turks right up to the higher circles of society and is justly considered by their intellectuals as one of the most fatal adversities to the Turkish imagination. The mischief of *Kismet* certainly does not have to do anything with Islam at all, and this is especially so for the most pious Muslims, who regard their life as a continuous struggle towards the "elevation of the word of God," i.e., the victory of the Islamic church over the whole world, and who have never let themselves be repressed by a stroke of fate. Muḥammad ʿAbduh has fought with particular eagerness against the blind submission to a fate that leaves one helpless and deedless. The history of Islam clearly shows that there is nothing to find about the belief in *Kismet* in its good times, but rather the conviction that Allāh sends down tests to the good in his mysterious resolution, such as he has sent tests even to the prophets, while, finally, he also wonderfully evens everything out, even if it be through the ruin of the patient sufferer in this world in order to award him the more in the Hereafter.
39 Ed.: Naṣīr al-Dīn Ṭūsī (d. 1274) was a Persian Muslim polymath. He wrote a commentary on *al-Ishārāt* and *Ḥall Mushkilāt al-Ishārāt.*

40 Ed.: The full title of this book is *al-Ishārāt wa'l-tanbīhāt* ("Directives and Reminders").
41 This is a particularly good example of the "external" way in which qurʾanic verses are employed.
42 Ṭanṭāwī Jawharī wrote this as: كولس باشا
43 Ṭanṭāwī Jawharī himself wrote "Caesar of Rome."
44 This boldness is bizarre, as it is rebellion against the morally and economically unsustainable instructions of the *sharīʿa*.
45 Ed.: This sentence is reminiscent of lines in a poem by the famous Persian poet Saʿdī Shīrāzī (d. 1291), which state: "Human beings are members of a whole/In creation of one essence and soul/If one member is afflicted with pain/Other members uneasy will remain/If you've no sympathy for human pain/The name of human you cannot retain!" For more on this author, see Muhammad Ali Musoffer, *Saadi and Unity* [Online source].
46 "The Wise": *ḥukamā*; the common version, however, is that the *ʿulamāʾ* are the heirs of the Prophet (*al-ʿulamāʾ warathah al-anbiyāʾ*); see the scorching criticism that the Turk Mehmed Schemsüddin makes on this verse in his *zulmetden nura* (there is a précis on this work by Hartmann in "World of Islam," 3:73–83).
47 Ed.: Many such explanations are found in his *tafsīr* as well.

Part II

Inside and outside of a *tafsīr*

و قد بينا في هذا التفسير في مواضع كثيرة أن الفرنجة ضحكوا علي ذقون الشرقيين الغافلين ...[1]
Ṭanṭāwī Jawharī

4 An approach to science in the Qurʾān

In line with Sayyid Jamāl al-Dīn, Muḥammad ʿAbduh and his followers wanted to spread so-called "pan-Islamism" across the world and prevent Muslims from deserting their faith. As mentioned earlier, Ṭanṭāwī Jawharī was one of these followers. He endeavoured to pursue the main precepts of *tajdīd* and *iṣlāḥ* of the rationalist and modernist movements at the time when he was in close contact with the Nationalist party. His perception of the Europeans' presence in Egypt, as well as the impressive progress made by Westerners in every domain of science and industrial development compared to the apparent backwardness of Muslims and their concomitant failure to make any new discoveries or present scientific findings, led Ṭanṭāwī Jawharī to devote most of his life to familiarising Muslims with their heritage, rights, and identity. Among his works, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm al-Mushtamil ʿalā ʿAjāʾib Badāʾiʿ al-Mukawwināt wa-Gharāʾib al-Āyāt al-Bāhirāt* ("Jewels in the Interpretation of the Holy Qurʾān, Containing Marvels of the Beauties of Creation and Wonderfully Luminous Divine Signs") was known as an official *musalsal* exegesis covering all *sūra*s of the Qurʾān, although many parts of it had been published previously. This work also presented the latest discoveries made by modern European communities, as well as scientific accounts, notes, and events reported by Western news agencies and magazines, in order to inform readers of the Qurʾān (particularly Muslims) of the many things required to ascend to a more prominent political and social situation.

The aim of Ṭanṭāwī Jawharī's exegesis

Ṭanṭāwī Jawharī agonised over the Muslims' backwardness and decline, and this was one of the main reasons he wrote his qurʾanic exegesis. In it, he highlighted scientific matters for so-called benighted Muslims by addressing important points regarding the backwardness of the Muslim world as well as Western advances. He suggested that Europeans had made such technological progress recently mainly due to their contact with Muslims during and following the Crusades, and had originally acquired knowledge and scientific ideas from them.

Ṭanṭāwī Jawharī's scientific views about various qurʾanic verses are not only rooted in Muslim backwardness in modern times but also in theological-jurisprudential notions as to why Muslims – those whom, according to the Qurʾān

"Your blessings are upon" – should only assess non-Muslim (i.e. Jewish or Christian) discoveries of the divine wonders. Ṭanṭāwī Jawharī assumed Muslims were totally ignorant of and unschooled in the science of nature and empirical knowledge. For this reason, he felt he ought to write or compile a fully-developed exegesis in which all verses of the Qurʾān are explained according to the current situation of the world in which Muslims live. Egyptians were already aware of the (re-)emergence of different philosophical, literary, and political movements in the West in the eighteenth and nineteenth centuries, such as Idealism and Transcendentalism. In addition, Ṭanṭāwī Jawharī introduced scientific matters in line with the familiarity of Muslims with modern sciences and Western discoveries. It is well documented that the advances in technology and medicine and their various sub-branches in the nineteenth century, which were reported in Arab journals had led to higher survival rates in the West than in Muslim communities. For instance, while diseases like cholera were widespread and medical science had helped prevent deaths from it, no such cures were to be found among Muslim populations. It must surely have been disgraceful for the Muslim reformists and nationalists who trumpeted having Avicennaean and Averroesean knowledge in their history to bear witness to such progress in non-Muslim societies. On this subject, Ṭanṭāwī Jawharī struggled with the question of why Muslims do not (or cannot) contribute to various scientific fields – those mentioned in Table 4.1 – and historical themes in even the smallest way. Before going further, it will be useful to survey briefly the status of science and the industrial achievements in the nineteenth and early twentieth centuries in Europe that were absent in the Muslim world.

Scientific movements in the period 1820–1894 carried academic investigation into the new domains of anthropology, archaeology, and geology, among many others.[2] Both governments and universities assisted people with innovations and experimentation. In 1822, the National Scientific Congress of Germany was one of the first societies to attempt to bring together scientists from all fields to analyse the most recent discoveries. The diversity of scientific development in parts of the West was obvious. In England, following the industrial revolution, scientists focused on practical issues, machines, and devices. In Germany, scientists concentrated on "pure" science. Later, Americans such as Thomas Edison (1847–1931) and the Briton/American Alexander Graham Bell (1847–1922)[3] pursued new avenues of investigation. Of course, such scientific evolution encountered resistance from the public and occasionally the Church. There were incessant disputes between scientists, the clergy, and the general public. The core topics of controversy pertained to issues presented by Charles Darwin's (1809–1882) theory of evolution by natural selection (alongside that of Alfred Russell Wallace (1823–1913)). Further demonstrating the "backwardness" of Muslims were women's scientific activities; Marie Curie (1867–1934) and her daughter Irène Joliot-Curie (1897–1956) were two prominent women who were both awarded Nobel Prizes. Hundreds of other female scientists in the West worked in a range of fields during the nineteenth century.[4] The scientific movement in that period was particularly interested in calculating planetary orbits and aspects of the solar system, and scientists detected Uranus in 1821. Soon after,

Table 4.1 Science and themes in the nineteenth-century periodical (SciPer) index

Acclimatization	Ecology	Light	Physiognomy
Aeronautics	Economic geology	Magnetism	Physiological chemistry
Ageing	Electricity	Mathematics	Physiological psychology
Agriculture	Electrochemistry	Matter Theory	Physiology
Alchemy	Electromagnetism	Mechanics	Plenitude
Analytical chemistry	Embryology	Mesmerism	Pneumatics
Anaesthesia	Energy	Metallurgy	Political economy
Anatomy	Engineering	Meteorology	Population
Animal behaviour	Entomology	Metrology	Prehistory
Animal development	Entropy	Microbiology	Psychiatry
Animal husbandry	Epidemiology	Microscopy	Psychical research
Animal magnetism	Ether	Military technology	Psychology
Anthropology	Ethnography	Mineralogy	Public health
Antiseptics	Ethnology	Mining	Putrefaction
Archaeology	Eugenics	Monstrosities	Railways
Astrology	Evolution	Morphology	Sanitation
Astronomy	Experimental psychology	Music	Sex
Bacteriology	Extra-terrestrial life	Narcotics	Sexology
Behavioural psychology	Force	Natural history	Sociology
Biogeography	Gas chemistry	Natural philosophy	Sound
Biology	Genetics	Navigation	Spectroscopy
Botany	Geology	Neurology	Spiritualism
Breeding	Glaciology	Nutrition	Spontaneous generation
Cell biology	Gravity	Obstetrics	Steam power
Chemistry	Health	Oceanography	Steamships
Climatology	Heat	Organic chemistry	Stratigraphy
Comparative anatomy	Heredity	Ornithology	Statics
Comparative philology	Homeopathy	Palaeontology	Statistics
Cosmogony	Horticulture	Parasitology	Surgery
Cosmology	Human development	Pathology	Taxonomy
Crystallography	Hydrography	Perspective	Technology
Darwinism	Hydropathy	Pharmaceuticals	Temperance
Death	Hygiene	Philosophical psychology	Telegraphy
Disability	Industrial chemistry	Photography	Time
Demography	Inorganic Chemistry	Phrenology	Vaccination
Disease	Instinct	Physical chemistry	Veterinary science
Domestic economy	Invertebrate zoology	Physical geography	Vulcanology
Dynamics	Language	Physics	Zoology

Created by Majid Daneshgar, based on SciPer homepage, Dunedin, New Zealand

Johann Galle (1812–1910) identified the planet Neptune. In the meantime, the discovery of the secrets of other stars and further details of planets like Mars, as well as of the Moon, comprised the most notable astronomical findings of the nineteenth century. Muslims, however, played no part in such activity. As well as such modern, "secular" discoveries, many nineteenth-century discoveries and studies were usually related, directly or indirectly, to religious matters.[5] Geographical, archaeological, and anthropological studies began to intensify following the 1860s; however, geographical and archaeological discoveries, along with their relationship to natural catastrophes like volcanoes, floods, and earthquakes, prompted some Western scientists to become interested in natural theology. William Buckland (1784–1856) used a link he created between his geological findings and natural theology to investigate the biblical story of the Flood.[6] A uniting of biblical notes with a geographical-archaeological approach was carried out by Georges Cuvier (1769–1832), a French naturalist and zoologist who gained fame for confirming the existence of the biblical Flood. *Discourse on the Revolution of the Surface of the Globe, and the Changes that have Occurred in the Animal Kingdom* was one of his key works.[7] It is thus obvious that the breakthroughs of the nineteenth century helped facilitate and shape such naturalistic views. Philippe Taquet has said:

> Georges Cuvier received a Lutheran religious education and was deeply anchored to his Protestant faith until the death of his daughter Clementine in 1827. This faith, along with his writings, and especially his well-known *Discours sur les Révolutions de la surface du globe*, gave him the reputation of being convinced of the existence of the Biblical Flood, the last catastrophe to have swept the surface of the Earth. Cuvier's ideas of creation and the Flood, borrowed and distorted by some British followers of natural theology, are not so clear-cut. A thorough reading of Cuvier's works and an analysis of his (unpublished) written exchange with Henry de la Fite, the translator of de Luc's *Elementary Treatise on Geology*, show that the French naturalist always took great care to separate all that referred to facts linked to natural history, palaeontology and geology from references to geotheories, metaphysical ideas and theological interpretations.[8]

Unlike the ideas of most Muslims, naturalism and natural theology were mostly carried out as part of an attempt to find, in nature, proof for God's existence, and these received special attention from scientists, particularly those keen on experimentation. The naturalistic and imperialistic stance of Western societies, along with their colonisation and rule over Islamic and Asian countries, and Asiatics' ability to stand against European powers (e.g. "Japanese Victory over Russia"[9]) led to the announcement of Sayyid Jamāl al-Dīn's politics as "Pan-Islamism," something that was, it was assumed, going to encourage Muslim nations and thinkers to mentally joust with Western ideologies on the basis of modern discoveries and technologies. Sayyid Jamāl al-Dīn's ideas were initially distributed amongst Muslims through his student ʿAbduh, and the latter's encouragement

helped Ṭanṭāwī Jawharī develop his own vision in his works. Nonetheless, one may wonder how the concept of "science" was perceived at al-Azhar University when ʿAbduh and his fellow-students were studying there.

Classical thought and knowledge in al-Azhar in the nineteenth century

In the West, knowledge, or the Aristotelian theory of knowledge, was defined through syllogism (i.e. deductive logic), which started from the first necessary principles grasped by pure reason or intuition. From the Aristotelian perspective, science was a synonym for knowledge and it was divided into several branches, including grammar, logic, rhetoric, arithmetic, music, geometry, and astronomy, and "when the number of sciences was enlarged they were classified under headings of natural morals."[10] "Science" entered the English language in the Middle Ages as a French importation that was synonymous with "knowledge."[11] Raʾis Ahmad has written that "in science nature denotes all those empirically observable objects, conditions and phenomena that exist independently of human intervention but includes the human being as a biological system."[12] In classical Islamic texts, the term *maʿrifa* was known as "knowledge."[13] Another synonym for knowledge in Islam is *al-ʿilm,* which, along with its derivatives, is often mentioned in the Qurʾān. It not only restricts knowledge to a specific category, for instance nature, but it also covers all aspects of knowledge:[14]

> In the many Qurʾanic verses, which relate to knowledge and its acquisition, one finds a variety of terms pointing to a hierarchy of methods, words such as listening (in the sense of understanding), observing, contemplating, reasoning, considering, reflecting, etc., most of which occur a dozen times or more.[15]

Knowledge was divided into several types by classical Islamic thinkers, and the most popular of these divisions was al-Ghazālī's (d. 1111) view that human knowledge falls into several categories: presential (*ʿilm al-huḍūrī*), acquired (*ʿilm al-ḥuṣūlī*), religious (*sharʿiyya*), intellectual (*ʿaqliyya*, *ghayru-sharʿī*), individual obligations (*farḍ ʿayn*), collective obligations (*farḍ kifāya*), worldly science (*ʿulūm al-dunyā*), other-worldly science (*ʿulūm al-akhīra*), theoretical-practical (*ʿilm al-muʿāmala*), and the (Islamic) religious sciences (*ʿulūm al-dīn*).[16] According to Islamic epistemological views, *maʿrifa* is never attributed to God; scholars have expressed that "unlike God who is Omniscient, man is lacking in all aspects including knowledge and must make every effort to acquire it."[17] Many classical scholars argued that the Qurʾān is a treasure in which people should seek even pearls and corals. The main verses on which such views are based are, for example, "We have sent down to thee the Book explaining all things" (Q 16:89) and "Nothing have we omitted from the Book" (Q 6:38), both of which indicate that the Qurʾān encompasses everything. Concerning Q 16:89, Ibn Kathīr (d. 1373) conveyed that Ibn Masʿūd (d. c. 650) stated that this verse reveals everything related to science, as well as everything else. Mujāhid noted that

it shows whatever is *ḥalāl* (permitted) or *ḥarām* (prohibited), and Ibn Masʿūd broadly said that the Qurʾān contains all beneficial knowledge, from the past to the future, those who will come, all about *ḥalāl* or *ḥarām*, and whatever people require in their worldliness: about their religious affairs, worldly lives, and the Hereafter.[18] Al-Nisābūrī wrote that "jurists said: in fact, the Qurʾān indicates all secondary laws (*aḥkām*) because these laws are derived from the tradition (*sunna*), consensus (*ijmāʿ*), analogy (*qiyās*), and interpretive reasoning (*ijtihād*), and all of them are based on the Qurʾān … Others said the *ʿulūm* of all fundamental principles of religion (*uṣūl al-dīn*) are expressed in the Qurʾān."[19] Additionally, concerning "the existence of everything in the Qurʾān," al-Suyūṭī (d. 1505) indicated that "whoever wishes to learn sciences should refer to the Qurʾān because it encompasses the first and the last science in itself."[20] Classical exegetes of the Qurʾān and theologians (*mutakallimūn*) wanted to discover cosmological and natural wonders for a specific reason. The majority used the various verses to illustrate God's control over the universe; for example, al-Ghazālī occasionally portrayed God's authority through his works. Regarding the verse "O man, what deluded you concerning your Munificent Lord, who created you, fashioned you, and made you well-wrought" (Q 82:6–8), he commented "everything can only be known by Him who knows the anatomy of man's limbs and internal organs, their number, their kinds, their underlying wisdom and their uses. God points to these in many places in the Qurʾān."[21] Thus, al-Ghazālī believed that God is a "Being" who is able to control everything in the universe, and who even knows the internal organs of a human or an animal completely. In addition to al-Ghazālī, Niẓām al-Dīn al-Aʿrāj al-Nisābūrī (d. 1330), a Persian polymath who also wished to display God's authority, prepared a Qurʾān commentary entitled *Gharāʾib al-Qurʾān wa-Raghāʾib al-Furqān* ("The Curiosities of the Qurʾān and the Desiderata of the Demonstration"). In this, he strongly argued that certain astronomical and astrological discoveries would be helpful in comprehending God's presence and his power of control. To express the intention of "And verily We have beautified the world's heaven with lamps" (Q 67:5), al-Nisābūrī stated that Fakhr al-Dīn al-Rāzī interpreted the lamps as stars and believed in the possibility of the existence of fixed stars below the orbit of the moon.[22] Al-Nisābūrī frequently noted that astronomy is permitted in Islamic teachings if one considers that the heavens act as an intermediary in God's control over the world.[23] From this viewpoint, it can be surmised that astrology and astronomy help thinkers and researchers to understand and believe in God's creation. Indeed, al-Nisābūrī was looking for a divine illumination (*al-fayḍ al-ilāhī*); as Morrison stated, "the heavens are a component of chains of emanation . . . and al-Nisābūrī was willing at times to attempt complete explanations of God's use of the heavens as intermediaries."[24]

Regarding the verse "Yea, verily We are able to restore his very fingers!" (Q 75:4), both al-Rāzī and al-Nisābūrī remarked on God's capability (*al-qudra*) of re-creating human bones, and therefore His control over the universe and humans in any state.[25] Similarly, Fakhr al-Dīn al-Rāzī believed that Q 96:2 proves God's creation and His control over it. [26]

A significant point is that these scholars did not merely focus on *ʿilm* to elaborate on the topic of the inimitability of the Qurʾān and Islam. Due to the specific context of medieval Islam (and particularly the disputation between *ʿaql* and *naql*) they mostly supported or rejected each other in their aim of expressing God's authority over the universe. It should be obvious that these classical approaches have been taken up by some modern Muslim thinkers who were from one of two backgrounds: religious reformers (or Islamic thinkers) and scientific interpreters, the latter being similar to the medieval Muslim thinkers who were both jurists and knowledgeable scholars, or polymaths. Modern Muslim thinkers appeared in the nineteenth and early twentieth centuries, a trend that was initiated by Sayyid Jamāl al-Dīn and Ahmad Khan (d. 1898) through their disputation on nature and naturalism, and which was followed up by Egyptian thinkers like ʿAbduh. In line with classical thinkers, all had a specific view of "nature and the cosmos."

> Khan and the reformers insisted that both the Qurʾān and nature must be regarded as covenants between God and humans, and hence, instead of ever being in contradiction, they must mirror each other in harmony. In his (unfinished) ambitious exegesis of the Qurʾān, Abduh used science to reinterpret some concepts and events, but more importantly gave science the final word on the meaning of any verse that dealt with natural phenomena . . . Still, none of these reformers could be considered as pioneers of the scientific exegesis trend, for this was not their main goal; in fact, they tried to harmonise the Qurʾān with science in order to show the modernity inherent in Islam.[27]

Ṭanṭāwī Jawharī, as one of ʿAbduh's main followers, shared the same concerns regarding Arab societies and their status in the world on the one hand, while referring to the aforementioned classical Muslim thinkers on the other. The al-Azhar educational system was one within which many of these reformers had studied, and it had directly or indirectly influenced their thoughts on Islam. Adams has highlighted that the sciences taught at al-Azhar in the nineteenth century were primarily based on tradition, noting that "the spirit which has dominated instruction in the university for centuries has been severely traditional."[28] It has also been indicated that different types of sciences were used as instruments to promote a specific interpretation of the Qurʾān. Adams developed his thought by stating "the chief object of the education which it imparts is not research and investigation for the purpose of improving the state of the science taught, but rather the transmission of these sciences as they were handed down by the early fathers of the faith without change or deviation."[29] The main classification of science in Egypt in the nineteenth century is thus as follows: traditional/transmitted sciences (*al-ʿulūm al-naqliyya*), which encompassed Islamic theology/dogmatic theology (*ʿilm al-kalām wa-ʿilm al-tawḥīd*); exegesis of the Qurʾān (*tafsīr*); tradition; jurisprudence and its principles (*ḥadīth, fiqh wa-uṣūl al-fiqh*); mysticism (*taṣawwuf*); and ethics[30] (*ʿilm al-akhlāq*), all of which were based on divine revelation.[31] As well as these traditional sciences, there was a category named the rational sciences (*al-ʿaqliyya*), which defined the grammatical structure of the Arabic

language (*naḥw, ṣarf*), prosody (*ʿilm al-ʿarūḍ*), rhetoric (*al-balāgha*),[32] logic (*al-manṭiq*), the technical terms applied in the science of tradition (*muṣṭalaḥ al-ḥadīth*), and astronomy (*al-hayʾa*). Other sciences such as belles-lettres, geography, mathematics, history, etc., were not taught to any great extent.[33]

An investigation of Ṭanṭāwī Jawharī's exegesis

To help understand Ṭanṭāwī Jawharī's approach to science, this part will focus on the various themes found in his interpretation. It seems that his view on science, *ʿilm*, Islam, and other issues influenced his explanations of different verses of the Qurʾān.

General overview

Ṭanṭāwī Jawharī wrote his exegesis in specific sections. He also requested that Muslims be patient and pure in their prayers and that they not pay heed to worldly affairs. Such ethical notes are found in abundance in the first volume of his exegesis. Ṭanṭāwī Jawharī invited Muslims to seek *ʿilm* and employ it as a tool to leave behind the darkness and ignorance that had overtaken the majority of Arab-Muslim communities. Ṭanṭāwī Jawharī summarised all his thoughts in the first volume and in another, independent volume dedicated to Q 1. From his perspective, *al-Fātiḥa* displays all secrets, material and spiritual findings, and ethical requirements. This *sūra*, according to Ṭanṭāwī Jawharī, is a mine of educational information for worshippers. He especially liked the *basmala*, "In the Name of God, the Compassionate, the Merciful," because of its wealth of divine benefits, which are obvious everywhere in the universe and in the natural world. Ṭanṭāwī Jawharī understood that satisfaction with God can be achieved when humans reflect on natural phenomena. He felt that not only do most people not think about natural wonders, but they are also unfamiliar with certain aspects of themselves. In this regard, he specified that the main duty of scholars, scientists, and those who are literate is to explain divine natural wonders and enigmas to the rest of society.[34] He introduced himself as a pioneer and began a discussion with the topic of bees', ants', and spiders' body structures and lives – a subject that had been examined briefly by ʿAbduh. Later, he occasionally requested that readers and Muslims begin to perceive God's power through the way He created such elegant creatures: *fa-nẓur ilā āthār raḥmat Allāh*.

Nonetheless, the central aspects of his interpretation in general, and *sūrat al-Fātiḥa* in particular, are as follows.

(a) General mercy and religious sciences

In the first volume, when describing the attributes of God, Ṭanṭāwī Jawharī theologically divided mercies into mercies bestowed through (and upon) humans, like children, parents, thinkers, prophets, etc., and mercies granted through non-human objects, such as the Sun's illumination (*ishrāq al-shams*), the presence of

clouds, water and rivers, plants, the beauties of nature, and so forth, all of which have God as their source. Ṭanṭāwī Jawharī found that divine beauty exists abundantly, something confirmed in the numerous qurʾanic verses related to natural wonders. On this subject, he classified the religious sciences into two categories: (a) the science of the macrocosm and microcosm (*āfāq wa-anfus*) in the higher/upper and lower worlds; and (b) the legal sciences – *Sharīʿa* (i.e. Islamic) law. At the outset, he invited people to attempt to fully comprehend the features and wonders of the upper and lower worlds, and highlighted the significance of *tarbiyya* and cultivation in both the macrocosm and microcosm. Ṭanṭāwī Jawharī believed that planets, animals, and other creatures are symbols of God's educational system on earth; he saw corn as a symbol of growth, while a grain of wheat or date palm seedling are examples of complex plant structures. He also portrayed God's role in the creation of animate beings: pearl farming in the sea, foetal development in the mother's womb, breastfeeding, and medical education in schools.[35] Ṭanṭāwī Jawharī believed that using logic (*al-manṭiq*) would help us to perceive God's mercies and thereby advance in knowledge. He also pointed out that the five senses (i.e. sight, touch, hearing, smell, and taste) are all means of increasing our level of understanding.

(b) Types of universe

He divided the macrocosm and microcosm into two parts in order to portray God's control over the universe: the higher universe, including the stars, planets, sun, moon, and so forth, and the lower universe, with the seas and oceans full of creatures, and the earth filled with mines, plants, humans, and animals.[36] Discovering these two worlds, highlighted in the Qurʾān, allows Muslims to increase their ethics and knowledge simultaneously.

(c) Types of guidance

With respect to guidance, Ṭanṭāwī Jawharī believed that there are several types: (a) instinctive-special guidance for animals, or infants when they require milk, or bees for collecting honey in a beehive; (b) initial guidance, which is basic knowledge that helps humans recognise good and bad, beauty and ugliness, etc.; (c) guidance to understand science, which increases human knowledge of scientific principles and branches; and (d) guidance related to perception, inspiration, and specific revelations.[37]

(d) Ethical lessons

Ṭanṭāwī Jawharī hoped to link educational/scientific statements with ethical matters, for instance by stating that "a careful look at the planets and stars' motions can teach human beings to be stable and patient."[38] To attest to God's authority and discipline, Ṭanṭāwī Jawharī also linked ethical and eschatological issues

with modern science. Reference was made to human growth through use of the verse "And *Allāh* has caused you to grow from the earth a [progressive] growth" (Q 71:17). He noted that plants are distributed throughout different regions just as humans are scattered around the earth according to their needs (*ḥājāt*), thus implying the authority and discipline of God. Moreover, Ṭanṭāwī Jawharī also used analogies between humans and plants to interpret this verse.[39]

(e) Philosophy and qurʾanic verses

Q 50:6 states: "Have they not looked at the heaven above them – how We structured it and adorned it and [how] it has no rifts?" Based on this verse, Ṭanṭāwī Jawharī's multi-sky theory indicates that different layers of the sky exist: above each sky there is another one, although what is at the end of these skies is not stated.[40] He questioned how science could help comprehend the multi-sky notion. This question fascinated him so much so that he went on to study ancient philosophy. In philosophy, he mentioned, there are thirteen universal levels, including the Earth, Water, Air, Ether (the ninth celestial sphere), the Moon, Mercury, Venus, the Sun, Mars, Jupiter, Saturn, Ecliptica (the heaven of the zodiacal signs), and the Sphere of Mars. Ṭanṭāwī Jawharī thereby made connections between ancient philosophers' ideas and modern findings like the solar system, because he believed that humans are capable of surpassing ancient knowledge through modern science.[41]

(f) Western findings

Among the examples of Western findings that are related to the intention of a verse is one from *sūrat al-Ṣāffāt* (Q 37), which apparently describes the space discoveries made by Westerners. Another is from *sūrat al-Zalzala* (Q 99), which, it is claimed, references an earthquake in Italy. Ṭanṭāwī Jawharī thus believed there was a direct relation between geographical discoveries like oil and earthquakes, which link the upper and lower materials of the earth. To elaborate on and broaden his explanations, Ṭanṭāwī Jawharī went so far as to use illustrations and the mathematical equations of Kepler and Newton, as well as to use the example of universal gravity to interpret the verse "Indeed, from *Allāh* nothing is hidden in the earth nor in the heaven" (Q 3:5). As such, he stated that this refers to the smallest and biggest particles (*dharra*), their individual features, and the principles of planetary motion.

The status of Muslims and non-Muslims

Ṭanṭāwī Jawharī provided accounts of the desperate conditions of the colonised Muslim Arab countries into which Westerners had introduced their non-Islamic cultures. From his perspective, there seem to be two groups of people who follow lustful desires (*shahawāt*). The first group were those living in the Muslim World, and includes Muslim figures (*rijāl al-islām*) who enjoyed fornicating, gambling, drinking wine, and participating in bribery. These, he said, followed the examples

of Europeans who captivated the minds of Muslims as if they were slaves. The second group consisted of the Europeans who were filled with a desire to invade and conquer Muslim countries to gain wealth and power for themselves.[42] Yet Ṭanṭāwī Jawharī's main approach to science and humans can be found in his other works. For instance, in "Where is Man?" he states: "People are mired in ignorance, or are confused by the ocean of science . . . most people are deluded by human factors."[43] This take on the human condition demonstrates his concern about the future of Muslims in a world in which people remain unaware of their own importance. Ṭanṭāwī Jawharī wholeheartedly felt that Islam and the prophet Muḥammad are the true signs of God's blessings. He also had a traditional understanding of how some verses related to the People of the Book (*Ahl al-Kitāb*) and heretics, and thus attempted to highlight once more the status of Islam and its prophet. When interpreting the verse "We sent thee not, but as a Mercy for all creatures" (Q 21:107), Ṭanṭāwī Jawharī agreed with other Muslim scholars in that the mercy for all creatures refers to a *Muḥammadan* mercy.[44] On the other hand, he felt that the verse "O People of the Book! Commit no excesses in your religion: Nor say of *Allāh* aught but the truth" (Q 4:171) indicates Christians who, he seems to suggest, tell lies about Allāh. In his conclusion to his thoughts on this matter, he quotes the following: ". . . and guide them to Him through a straight way" (Q 4:175). To Ṭanṭāwī Jawharī, Islam is absolutely the straight path *(ṣirāt al-mustaqīm),* one that encompasses praying in this world and thus reaching Paradise in the Hereafter.[45] The following verse refers, he thought, to the Europeans who had come to Arab lands[46] ". . . and those who are with him are strong against Unbelievers" (Q 48:29). The next verse mentioned is from *sūrat al-Tawba:* "It is He who hath sent His Messenger with guidance and the Religion of Truth, to proclaim it over all religion" (Q 9:33). Here, Ṭanṭāwī Jawharī took notice of Westerners such as Theodore Lothrop Stoddard (1833–1950), who stated that "The entire world of Islam is today in profound ferment. From Morocco to China and from Turkestan to the Congo, the 250,000,000 followers of the Prophet Mohammed are stirring to new ideas, new impulses, and new aspirations. A gigantic transformation is taking place whose results must affect all mankind."[47] Ṭanṭāwī Jawharī noted "Western scholars have stated that Muslims won a great victory in the middle of Africa and its light removed the darkness of paganism, and afterward Christianity became a superstition and myth."[48] He added a comment by a Protestant reporter on the challenge between Christianity and Islam in Africa: "Islam has not stopped its progress up to today; and Christians always dreamt of conquering Africa, but Islam could conquer it for real."[49]

On the final verse of *sūrat al-Fātiḥa*, "the path of those whom your blessings are upon," Ṭanṭāwī Jawharī maintained that "whom" refers to the prophets, trustful people, martyrs, and the righteous. He also strongly believed that "whom" (*anʿamta ʿalayhim*) refers to the Muslim *umma* (nation). Furthermore, he assumed that "Not of those who You have cursed" implies the Jews and "Nor of those who have gone astray" suggests Christians.[50]

The "straight path" will, according to Ṭanṭāwī Jawharī, be achieved in light of the following ethical points:

a Chastity, as opposed to lust and vice, to live between generosity and stinginess;
b Courage against recklessness, foolishness, and injustice, to avoid apprehension, fear, grief, and anxiety;
c Wisdom in the face of ignorance, stupidity, dullness, guile, craftiness, and fraud;
d Justice, meaning equality in all matters.[51]

As Ṭanṭāwī Jawharī stated that God considers Muslims to be the people who are righteous, it would therefore seem that Christians and Jews are not considered believers as they do not follow ethical rules and the "straight path." In 1927, as Ṭanṭāwī Jawharī wrote in his exegesis, there existed a map (*kharīṭa*) outlining the borders between Muslim countries (*bilād al-Islām*) at that time. He supposedly intended to discuss the significance of the Muslim world on the basis of the following verse: "And We have already written in the book [of Psalms] after the [previous] mention that the land [of Paradise] is inherited by My righteous servants" (Q 21:105). Thus, Ṭanṭāwī Jawharī interpreted that the land on earth referred to is the place of the righteous servants, which means the lands of those prophets whose names are found in *sūrat al-Anbiyāʾ* and others: "Abraham was from Babylon (*al-ladhī kāna fī Bābil*) . . . went to Mecca; . . .; Joseph was based in Egypt (*wa ammā Yūsuf fa-qad kāna bi-Miṣr*); . . .; Zechariah in the Levant (greater Syria) . . .; . . . Jonah in Nineveh; Lot somewhere in the region of Levant; . . .."[52] In other words, the prophets lived in same regions as the Muslims lived, so it was the Muslims who had inherited the lands (*warathū al-arḍ*) of the prophets. According to Q 21:105 ". . . this land will not be inherited unless to the righteous servants," and "the righteous servants" definitely means the prophets and Muslims, according to Ṭanṭāwī Jawharī. It is therefore clear that the areas where the prophets lived are the Muslims' inheritance and thus Muslims must move to become reformed and united, because "indeed, this, your religion, is one religion" (Q 23:52).[53]

The spirit

Shaykh Ṭanṭāwī Jawharī was particularly mindful of the "spirit" in his exegesis. It seems he even engaged in sessions of spiritualism or mediumship to demonstrate the existence of the *rūḥ*, resurrection, and *qiyāma*. Mediumship was a Western concept that had become popular after the spiritualism movement swept the UK and US.[54] It is clear from the preface of *al-Arwāḥ*, where Ṭanṭāwī Jawharī states "there are spiritual gatherings and mediumship in European countries," that he believed all Western discoveries and successes, even in spiritualism, are primarily based on knowledge they took from Eastern lands in general, and Muslims in particular.[55] In his exegesis, Ṭanṭāwī Jawharī named Westerners who were keen devotees of mediumship, and he later marvelled at how these foreigners could discover this important matter but remained unable to recognise its Islamic origin.[56]

Ṭanṭāwī Jawharī referred to the spiritual endeavours of Oliver Lodge (1851–1940), who lost his son in World War I, in order to prove his theory that

people can call on spirits. Lodge was a British physicist who became a spiritualist after passing a number of requirements established by Gladys Osborne Leonard (1882–1968), and who had attempted to demonstrate the continuation of life after death. Lodge was convinced that he had gained contact with the spirit of his dead son, and wrote a book entitled *Raymond, or Life and Death* in 1916, in which he presentated the evidence that memory survives after death.[57]

Islamic law and verses

Rather surprisingly, Ṭanṭāwī Jawharī did not abandon his Islamic-traditionalist view when explaining the purposes of verses related to *fiqh*. His devotion made me curious to examine his main stance towards them or, more precisely, whether he followed jurisprudential principles or an anti-jurisprudential means for explaining the verses. A good example is that of *sūrat al-Nisā*, which contains many *fiqhī* verses, one of which is extremely controversial in the modern world: "Men are in charge of women by [right of] what Allāh has given one over the other and what they spend [for maintenance] from their wealth . . ." (Q 4:34). Ṭanṭāwī Jawharī sees "Men are in charge of women" as meaning *wilāya* and supervision of men over women, and the finest women are those who listen to their husbands' instructions.[58] In contrast to his usual method of portraying European discoveries in the form of narration, notes, and pictures, and unlike ʿAbduh's emphasis on the active role of women in society, Ṭanṭāwī Jawharī declined to follow recent Western discoveries in his exegesis of Q 4:34. In the 1800s, Westerners had begun to uncover aspects related to the nature of women, as a result of which they departed from their traditional views on women's characteristics and prepared a novel, more appropriate atmosphere for them. Numerous physiological studies carried out on women's skeletal and body structure in the nineteenth century had demonstrated that women have a certain energy and physical power, and Ṭanṭāwī Jawharī could have referred to any of these findings, or even depicted a woman's body and brain structure, but failed to do so.

The third volume of Ṭanṭāwī Jawharī's exegesis contains many verses related to *fiqh*, such as *al-Nisā* (Q 4) and *al-Māʾida* (Q 5), and he followed the *fiqhī* style of interpreting the so-called *āyat al-wuḍūʾ*, or verse of ablution, which states: "O ye who believe! When ye prepare for prayer, wash your faces, and your hands (and arms) to the elbows; Rub your heads (with water); and (wash) your feet to the ankles . . ." (Q 5:6). Ṭanṭāwī Jawharī briefly touched on the correlation between this verse and body purification by indicating he believed that the body would be purified by water and the heart by prayer, thus doing justice and offering thanksgiving.[59] He then clarified the modality of ablution from the perspective of jurists such as Abū Hanīfa, al-Shāfiʿī, Ibn ʿAbbās, and Dāwūd b. ʿAlī al-Ẓāhirī. Concerning the verse: "As to the thief, male or female, cut off his or her hands: a punishment by way of example, from Allāh, for their crime: and Allāh is Exalted in power" (Q 5:38), Ṭanṭāwī Jawharī had a strict traditional-*fiqhī* way of thinking, as he based his ideas only on the statements and accounts of

Mālik, Aḥmad, Isḥāq, Abū Hurayra, Ibn Masʿūd, Sufyān, Abū Ḥanīfa, and Ibn ʿAbbās, among other classical scholars.[60]

Ṭanṭāwī Jawharī would have been able to illustrate some anthropological, physiological, psychological, and sociological findings popular in the nineteenth and twentieth centuries to elucidate the above verses had he wished to do so. However, he only provided some ethical points related to them. He apparently believed that very few legal verses had been clearly explained by earlier Islamic thinkers.

Dhū l-Qarnayn[61]

One further example that may help determine how Ṭanṭāwī Jawharī seems to have employed scientific findings in his *tafsīr* relates to the identity of Dhū l-Qarnayn, mentioned in Q 18:83. Dhū l-Qarnayn is a historical character who is said to have played a crucial role in the history of many regions of the world, and references to him are found in numerous writings of classical and modern exegetes. In many classical Islamic works, he is believed to be Alexander the Great, but from the early twentieth century a number of scholars have attempted to reassess this belief about his identity. Although it is reported that Mawlānā Muḥammad ʿAlī (d. 1951) was the first to identify Dhū l-Qarnayn as having been a Persian king, this idea was more fully and "scientifically" articulated by Abū l-Kalām Āzād (d. 1958), an Indian thinker and activist,[62] who composed an interpretation of the Qurʾān entitled *Tarjumān al-Qurʾān* in the late 1920s as an explanatory translation.[63]

To begin with, Āzād criticises earlier exegetes who portrayed Dhū l-Qarnayn as having had two horns, stating:

> The word *qarn* means "horn" both in Arabic and Hebrew; *Dhuʾl-Qarnayn* therefore was taken to mean the "two-horned [one]." Since there was, however, no king bearing this description, the commentators of the Qurʾān went on to give the word *qarn* a variety of strange meanings. Since they could not agree on any single meaning for it, they found it easy to hit upon Alexander of Macedonia to bear this title, since among the ancients he was regarded as the mightiest of conquerors.[64]

Āzād believed that classical exegetes wrongly interpreted Dhū l-Qarnayn's features because he was not a God-fearing, just warrior, or kind ruler to the people of his time. In his opinion, Dhū l-Qarnayn was the King of Persia. Although Āzād occasionally relied on biblical stories as the backbone of his studies, he was not satisfied with such literature, and so he referred to historical research carried out in 1838 that indicated that Dhū l-Qarnayn was not a title coined by the Jews but it was, in fact, an honorific title used to praise the Persian ruler Cyrus. To specify the faith of Cyrus, Āzād highlighted the German scholar Geldner's findings, namely that Cyrus propagated his religion throughout Asia and parts of Azerbaijan, or the north-western part of Iran. He also studied the history of Zoroastrianism,

along with its sacred texts, and declared that when Alexander swept across Persia he destroyed the original copy of *Zend Avesta* and thereby triggered a crisis for Zoroastrianism.[65]

Following Āzād's interpretation, Abū l-Aʿlā Mawdūdī (d. 1979) tentatively agreed that Dhū l-Qarnayn was Cyrus.[66] Furthermore, Khurshid Hasan supported Āzād's archaeological findings, stating: "During the archaeological excavations conducted in 1838, a statue of Cyrus was discovered in Pasargadae. It is flanked by two eagle's wings and bedecked with two horns of a ram. In all probability, Dhū l-Qarnayn was the Cyrus of Persia. Jews called him Khoras, while Arabs named him Kay Khusraw."[67] Thus, Āzād concluded that "from the references in the Qurʾān and the Torah it is clear that Dhū l-Qarnayn, or Cyrus, was a prophet of God."[68]

However, Ṭanṭāwī Jawharī, regarded by some scholars as the founder of scientific interpretation of the Qurʾān, did not draw on archaeological discoveries to identify Dhū l-Qarnayn. Instead, he used the names of Iskandar al-Ḥimyarī and Dhū l-Qarnayn al-Ḥimyarī in his *tafsīr*, although he also mentioned other identities ascribed to Dhū l-Qarnayn, such as Iskandar Rūmī and Abū Karab b. Afrīqish. For various reasons, such as the fact that his lifestyle and manner were not in accord with God's ways, as expressed in the Qurʾān, Ṭanṭāwī Jawharī concluded that Alexander the Great was not Dhū l-Qarnayn.[69] It is apparent that his attempts to uncover the identity of Dhū l-Qarnayn were based on classical sources alone, although he did note the results of modern archaeological findings as well as the statements of Indian thinkers on the issue.[70]

Sexual duality

"And of him He made two sexes, male and female" (Q 75:39). This verse is one of those most often seen related to scientific issues in Muslim exegetical works. The vast majority of exegetes and scholars regard the human biological system and its genetic specifications to be proof of the sexual differences between human beings that are indicated by this verse. Ṭanṭāwī Jawharī said it is unnecessary to interpret this verse from a physiological perspective, but it is clearly a piece of qurʾanic wisdom that addresses the differences between males and females. He had earlier written a number of studies on the subject and presented the findings in his book *Where is Man?*, concluding that this verse and other, similar ones that refer to the duality of the sexes highlight God's attention to His creatures and that He justly created them equally.[71]

Fingerprints

His explanation of Q 75:4 is very brief, but for Ṭanṭāwī Jawharī this is one of the true wonders of the Qurʾān. The uniqueness of human fingerprints had only recently been discovered, and it assisted Egyptian judges with crime detection. He saw this as clearly being yet another piece of qurʾanic wisdom that has become apparent in current times. To back up this general point, he briefly recounted a murder story from Japan, where the police had caught the killer using fingerprints as evidence.[72]

Amshāj

Ṭanṭāwī Jawharī offered many different explanations for the term *amshāj*, found in Q 76:2. In some so-called "non-scientific" exegetical works, *amshāj* means the mixing of a man's white liquid with the yellow water of a woman. For instance, al-Nisābūrī stated that the mix is *nutfa,* which is derived from the concentrated white liquid of a man and yellow watery liquid of a woman.[73] Many lexicons and dictionaries agree with this interpretation. On the other hand, modern "scientific exegesis" denotes *amshāj* as "sperm," which has been further elaborated on by various commentators. An instance of such an elaboration is the epididymis, with its precise structure for keeping sperm. Although such an interpretation is typical of most exegetes, Ṭanṭāwī Jawharī held a very different view towards this verse and the term *amshāj*. He claimed that a human is created from *nutfa*, which is a compound of *amshāj*. *Amshāj* is based on the parents' nutrition and the foods and vegetables eaten, including ten vital elements: oxygen, hydrogen, carbon, azoth, sulphur, phosphorus, potassium, magnesium, calcium, and iron. These, together with *amshāj*, combine to create a human being.[74]

Ethical perceptions

Concerning Q 27:18, Ṭanṭāwī Jawharī gave the example of ants. Ants always support each other: if one cannot carry a large, heavy thing, others will help carry it home. He wrote that human beings should follow the example of ants and support each other to achieve what is useful. Ṭanṭāwī Jawharī insisted that humans fall below the level of animals if they fail to support their fellow-man.[75] His *tafsīr* is full of such ethical and social comments, as will be seen in the final chapter.

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The contemporary term for "science" has expanded from the Aristotelian theory, in which it meant knowledge alone, to encompass natural morals. It goes without saying that modern knowledge and science have evolved via empiricism and observation. From a recent perspective, evidence and facts can confirm the truth of a historical text or proof, as through empirical methods a scholar can analyse the truth of a phenomenon by means of trial and error and comparative studies. Science now encompasses a wide range of academic fields that were mainly established by scholars in the nineteenth and twentieth centuries. As such, a professional scholar who has knowledge of empirical techniques and who applies them to his studies is a scientist. A scientist's field is not so broad as that of an *ʿālim*, and investigating a theory or hypothesis can only be done in one or two precise scholarly fields. Ṭanṭāwī Jawharī lived in the nineteenth and twentieth centuries and was a shaykh who attended al-Azhar University. He apparently followed in the footsteps of his masters, Sayyid Jamāl al-Dīn (indirectly) and ʿAbduh, by trying to solve intra-Muslim conflict. According to the teaching regulations of the time, he had to go through the traditional educational system at al-Azhar, although he believed that Muslim students should learn and study both

religious works and Islamicised versions of English textbooks. In this system of which he was a part, "science" fell in two categories, the science of transmission and the rational sciences, both of which were, at al-Azhar, applied with the aim of enhancing the standard of qurʾanic interpretation and teaching. As Adams observed, the modern sciences, including geography, history, mathematics, etc., were not taught so earnestly there. This is because al-Azhar conformed to the traditional understanding and arrangement of knowledge as al-Ghazālī, centuries before, had used; for example, al-Azhar's classification of science was based on the divine revelation.

Ṭanṭāwī Jawharī's approach to science in the Qurʾān was based on the following ideas:

a A traditional classification of knowledge in which Muslims are ordered to understand and learn so they can come to know God's authority and mercy. As per Ṭanṭāwī Jawharī's epistemological and general views, God's creation of a higher and lower world is a mercy that humans should discover.
b The Muslims' backwardness, with the exception of the special place Ṭanṭāwī Jawharī ascribed to the knowledge of classical times, encouraged him to demand that Muslims (particularly Arabs) wake up and see that the Qurʾān contains everything a Muslim needs to attain bliss in both this world and the next.

Ṭanṭāwī Jawharī seems to have given a modern twist to traditional Islamic views regarding science in the Qurʾān. He certainly employed ideas from the Islamic *ʿulūm* when interpreting qurʾanic verses, but he also connected his ideas to contemporaneous scientific findings. Furthermore, he had a specific view of nature and believed it was one of the best tools for knowing God. He essentially only wrote for Muslims, and Arabs in particular, and thus often highlighted the shortcomings and problems within Muslim societies, after which he gave suggestions as to how Muslims could develop their skills.

At the same time, he saw earlier jurists and exegetes as having been able to consider all aspects of the Qurʾān but failing to accept the scientific and modern facets of the verses in their writings. He went on to stress the *fiqhī* definition of verses like Q 4:34, which he explicitly approached from a legal/*fiqhī* perspective, but failed to do so through psychological and/or sociological theories. On this subject, he interpreted *fiqhī* verses based on classical commentaries because he believed that they clearly explained such verses.

Throughout his works, Ṭanṭāwī Jawharī, following his masters, often stated that one of the main duties of Muslims was to learn science because of the need to advance the status of the Muslim world. One way he achieved this was by highlighting the majority of the *wājibāt* (obligations) for Muslims. Besides this, Ṭanṭāwī Jawharī described the intellectual faculty and philosophical notes that characterised Western scientific findings. When interpreting the conclusions of scientific papers, however, he did not employ the empirical sciences in the most appropriate way. When discussing *amshāj*, for example, he had only a minimal

degree of understanding of embryology and physiology, remarking only that *amshāj* deals with the elements required by the human body.

According to his position on verses pertaining to legal issues, as well as his outlook on humans in general and Muslims in particular, it is clear that Ṭanṭāwī Jawharī's main goals were the unity of Muslims and their independence and authority in a world in which Europeans, as the holders of science, were not, in his opinion, the successors of any prophet. He essentially wished to demonstrate two things: (a) that God's Book contains fabulous wonders that Muslims overlook but Europeans pay attention to; and (b) that non-Muslims have investigated and proven a myriad of matters that were mentioned in the Qurʾān 1,300 years ago, as well as in other Islamic literature. What is found in his writings seems to suggest that Ṭanṭāwī Jawharī was, to some extent, following the path of al-Ghazālī and other classical exegetes who believed that science is a part of the Qurʾān. As al-Ghazālī stated, "Hazrat Ibn Masud said, 'When you wish to acquire knowledge select the Quran as it is the embodiment of the knowledge of the previous and future generations'" or "Hazrat Ibn Masud said 'If a man desires to gain knowledge of earlier and future peoples, he should ponder over the Quran.'"[76] Thus, for the one who is convinced of this, studying is an act of worship. In his exegesis, Ṭanṭāwī Jawharī seemingly attempted to revive classical qurʾanic exegetical works through a traditional stance towards science in the Qurʾān, indicating that he saw "science" as *ʿilm* and general knowledge, not merely empirical knowledge. He believed all sciences in general, and empirical sciences in particular, can be found in the Qurʾān and were revealed to Muḥammad. Moreover, although some contemporary scholars have categorised Ṭanṭāwī Jawharī's exegesis as "scientific," this is not correct, as he did not adhere to the empirical methods required for scientific explanations either in his historical arguments or as regards natural phenomena. Perhaps it can be said instead that it was a *social*, *natural*, and *practical* exegesis, together with a classical twist, that Ṭanṭāwī Jawharī produced.[77]

Notes

1 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm* (Cairo, 1933).
2 The exact source and title of the work I had referred to for writing about scientific movements is no longer available to me.
3 Although he was born in Scotland, he lived and worked for much of his life in North America.
4 In astronomy: Sarah Frances Whiting (1846–1927); in medicine: Florence Nightingale (1820–1910); in invention and engineering: Emily Roebling (1844–1903); in medicine: Elizabeth Blackwell (1821–1910), etc. It should be noted that there are several websites introducing scientists of the nineteenth century, including M. Bellis, *19th Century Timeline*; *Science Timeline*; *19th Century Society and Culture* [Online sources].
5 Apart from the above scientific discoveries, some religious movements such as spiritualism/mediumship were popular in the West (mostly in the nineteenth century).
6 His main works are: *Geology and Mineralogy Considered with Reference to Natural Theology*, and *Reliquiae diluvianae, or Observations on the Organic Remains Contained in Caves, Fissures and Diluvial Gravel and on other Geological Phenomena Attesting the Action of an Universal Deluge*.

7 G. Cuvier, *Discours sur les révolutions de la surface du globe et sur les changements qu'elles ont produits dans le règne animal* (Paris, 1830).
8 Philippe Taquet, "Cuvier's attitude toward creation and the Biblical Flood," *Geological Society, Special Publications* 310 (2009), pp. 127–134.
9 E. G. Brown, *The Persian Revolution of 1905–1909* (Cambridge, 1910), p. 2.
10 Sydney Ross, "Scientist: The Story of a Word," *Annals of Science* 18/2 (1962), pp. 65–85. Nonetheless, the term "science" was not known in Ancient Greek as it is today, as it mostly meant *philosophy* or *inquiry concerning nature*; M. Iqbal, *Science and Islam* (Westport, 2007), p. 21.
11 Sydney Ross, "Scientist: The Story of a Word."
12 R. Ahmad, *Islam and Scientific Debate: Searching for Legitimacy* (New Delhi, 2006), pp. 121–122. Generally speaking, modern science emerged in Europe between the years 1500 and 1750, and a modern scientific worldview was developed by Nicolas Copernicus (1473–1543) in a book "attacking the geocentric model of the universe"; S. Okasha, *Philosophy of Science: A Very Short Introduction* (Oxford, 2002), pp. 2–3. "It is also obvious that Copernicus' idea modified the path of scientific thinking as "the Copernican theory opened the way for intellectual upheaval that came to be known as the Scientific Revolution, whose principal figures were Tycho Brahe (1546–1601), Johannes Kepler (1571–1630), Galileo Galilei (1564–1642), and Isaac Newton (1642–1727), though physicians, alchemists, botanists, philologists, and historians all played important roles"; J. Freely, *Light from the East: How the Science of Medieval Islam Helped to Shape the Western World*, p. 181.
13 Guessoum stated that "Nevertheless, the concept of science in the modern sense cannot easily be found in the Qurʾān or indeed in most of the classical Muslim heritages; rather the concept of knowledge is developed . . . indeed, the word *ʿilm* is today routinely used for 'science,' although it is quite certain that it originally stood for knowledge, perhaps even religious knowledge (as opposed to knowledge of the word)"; Guessoum, *Islam's Quantum Questions: Reconciling Muslim Tradition and Modern Science*, pp. 63–64. Moreover, Muslim thinkers like Abdus Salam opined that Muslims did not blindly imitate Greek knowledge/science. See also Moḥammad Abdus Salām, "Islam and Science-Concordance or Conflict," *Review of Religion* (March 1995), pp. 1–12.
14 Iqbal, *Science and Islam*, p. 21.
15 Guessoum, *Islam's Quantum Questions: Reconciling Muslim Tradition and Modern Science*, p. 55.
16 Yet the main categories presented by al-Ghazālī were (a) the intellectual sciences and (b) the non-intellectual (narrated) sciences. See also Wan Mohd Azam b. Mohd Amin, "The Concept of Acquired Knowledge (*ʿIlm al-Ḥuṣūlī*): Its Reformation in the Discourse of Muslim Scholars," *Revelation and Science* 1/3 (2011), pp. 50–61.
17 Many scholars have believed that the focal point of al-Ghazālī's discourse on knowledge is acquiring knowledge, something Muslims have neglected in recent centuries; ibid.
18 Ibn Kathīr, *Tafsīr Ibn Kathīr,* (Riyadh, 2000), 4:510.
19 al-Nisābūrī, *Gharāʾib al-Qurʾān wa-Raghāʾib al-Furqān* (Beirut, 1992), 4:298.
20 al-Suyūṭī, *al-Durr al-Manthūr fī tafsīr biʾl-Maʾthūr* (Cairo, 2003), 4:127.
21 A. Ḥ. al-Ghazālī, *Jawāhir al-Qurʾān* (Beirut, 1981), p. 27. See also Martin Whittingham, *Al-Ghazali and the Qur'ān: One Book, Many Meanings* (London and New York, 2007), p. 70.
22 R. G. Morrison, *Islam and Science: The Intellectual Career of Niẓam al-Din al-Nisābūrī* (London and New York, 2007), p. 312. Some scholars believed that his exegesis definitely bears the hallmarks of the works of Fakhr al-Dīn al-Rāzī.
23 Ibid.
24 Robert G. Morrison, "Reasons for a Scientific Portrayal of Nature in Medieval Commentaries on the Qurʾan" *Arabica* 52/2 (2005), pp. 182–203.

25 al-Rāzī, *al-Tafsīr al-Kabīr* (Beirut, 1990), *sūrat al-Mulk*.
26 Ibid., *Sūrat al-ʿAlaq*.
27 Guessoum, *Islam's Quantum Questions: Reconciling Muslim Tradition and Modern Science*, p. 149.
28 Ch. C. Adams, *Islam and Modernism in Egypt: A Study of the Modern Reform Movement Inaugurated by Muḥammad ʿAbduh*, p. 28.
29 Ibid.
30 Mysticism and ethics were occasionally studied for their own sake and as *ʿulūm al-maqāṣid*.
31 As Adams stated, it is believed to be unnecessary to conduct new research into these sciences, but rather they should be accepted as they were handed down by earlier generations.
32 I.e., *al-maʿānī, al-bayān, al-badīʿ*.
33 Adams, *Islam and Modernism in Egypt,* pp. 28–29. Ṭanṭāwī Jawharī did not agree with some of the educational methodologies applied in the Arab world. This is apparent in statements about the British educational system and his emphasis on Kant's educational view that was outlined in *Über Pädagogik* (*Education*); Immanuel Kant, *Über Pädagogik*, translated by Annette Churton, pp. 10–11. It seems that Ṭanṭāwī Jawharī saw the significance of education (for progress) to be as important as did ʿAbduh; he stated in *al-Manār* that education is a very important element that women are required to undertake in order to reform the social conditions affecting the living ways of women in Muslim lands. Adams, *Islam and Modernism in Egypt,* p. 230.
34 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 1:15–25.
35 Ibid., 1:48–95.
36 Ibid., 1:13–14.
37 Ibid., 1:18–20.
38 Ibid., 9:6.
39 Ibid., 24:263–265.
40 Ibid., 1a:85; 2:82–85.
41 Ibid., 1a:85–88.
42 Ibid., 3:39.
43 Aḥmad Fahmī Abū al-Khayr, "Ṭanṭāwī Jawharī al-ʿĀlim al-Rūḥī" *ʿĀlam al-Rūḥ* 101 (1915), pp. 2–10.
44 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 3:109.
45 Ibid., 3:39.
46 Ibid., 22:82.
47 T. L. Stoddard, *The new world of Islam* (New York, 1921), preface.
48 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 22:80–82, p. 263.
49 Ibid., 22:264.
50 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 1:18.
51 Ibid.
52 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 10:240–241.
53 Ibid.
54 See Geoffrey K. Nelson, *Spiritualism and Society* (Abingdon, 2013), p. 89.
55 Ṭanṭāwī Jawharī, *al-Arwāḥ* (Alexandria, 1990), pp. 9–13.
56 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 24:274–275. Ṭanṭāwī Jawharī pursued his idea about the existence of the spirit by referring to medieval thinkers like al-Ghazālī who claimed that dead bodies have spirits that undergo three different states of torment in the grave: sadness due to loss of profits, regret due to guilty acts, and remorse for being ignorant. This statement of al-Ghazālī led Ṭanṭāwī Jawharī to prepare a space in which to bring spirits to talk to him about their feelings and attributes. Thus, Ṭanṭāwī Jawharī came to assert the existence of the spirit after death.

57 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 24:275. See also O. Lodge and R. Lodge, *Raymond, or Life and Death: With Examples of the Evidence for the Survival of Memory and Affection after Death* (New York, 1916). Elshakry says: "For much of his life, Jawharī was active in the spiritualist society in Cairo . . . held regular séances at his house, and also organized Sufi *dhikr* sessions"; Elshakry, *Reading Darwin in Arabic*, p. 314.
58 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 3:37–38.
59 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 3:121.
60 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 3:122–123.
61 With thanks to Routledge for granting me permission to reproduce this section which first appeared in my chapter in *The Qurʾān in the Malay-Indonesian World: Context and Interpretation*, published by Routledge in June 2016.
62 Maulānā Muḥammad ʿAlī (d. 1951) published a translation of the Qurʾān with a footnote commentary in 1917. The book, without Arabic texts but with revisions, was republished in 1928, 1948, and 1951. Concerning Q 18:83, he wrote:

> Dhu-l-qarnain literally means the two-horned one, or one belonging to two generations or two centuries. The reference here seems to be to the two-horned ram of Daniel's vision (Daniel, 8:3), which he interpreted as the Kingdoms of Media and Persia that were combined into a single kingdom under one ruler, Cyrus, who is erroneously called Darius in the Bible (*Encyclopedia Biblica* and *Jewish Encyclopedia*, Art. "Darius"). The reference in Daniel's vision, however, is not to Cyrus but to Darius I Hystaspes (521–485 BC), "who allowed the Jews to rebuild their temple . . . His liberality towards the Jews is in complete accord with what we know otherwise of his general policy in religious matters towards the subject nations" (*Enc. Biblica*, "Darius"). The reference in the Qurʾān in the history of Dhu-l-qarnain is to Darius I: "Darius was the organizer of the Persian Empire. His conquests served to round off the boundaries of his realm in Armenia, the Caucasus, and India, and along the Turanian steppes and the highlands of Central Asia" (*Jewish Enc.*, "Darius I"). The following remarks in the *Encyclopedia Britannica* strengthen this view: "Darius in his inscriptions appears as a fervent believer in the true religion of Zoroaster. But he was also a great statesman and organizer. The time of conquests had come to an end; the wars which Darius undertook, like those of Augustus, only served the purpose of gaining strong natural frontiers for the empire and keeping down the barbarous tribes on its borders. Thus Darius subjugated the wild nations of the Pontic and Armenian mountains, and extended the Persian dominion to the Caucasus; for the same reason he fought against the Sacae and other Turanian tribes". The references to Darius being a fervent believer in the true religion of Zoroaster, to his subduing the barbarous tribes on the borders, to his gaining strong natural frontiers for the empire, and to his fighting against the Sacae clearly point him out as the Dhu-l-qarnain of the Qurʾān.

  It should be noted that due to limited access to the original version of 1917 it is not clear whether such statements about Dhū l-Qarnayn and the king of Persia were entered initially or added later by Muḥammad ʿAlī. However, the 1934 Dutch translation of Muḥammad ʿAlī's work by Soedewo shows the aforementioned notes dealing with the identity of Dhū l-Qarnayn. M. Muḥammad ʿAlī, *English Translation of the Holy Quran with Explanatory Notes*, ed. Zahid Aziz (London, 2010), p. 370. See also M. Muḥammad ʿAlī, *Bayān al-Qurʾān: the Urdu Translation of the Holy Quran with Commentary*, 4th edn (Lahore, 1980/1301), 2:831–832. For the Dutch translation, see M. Muḥammad ʿAlī, *De Heilige Qoer-an: vervattende den Arabischen tekst*, trans. Soedewo (Batavia, 1934), pp. 537–538.
63 A. Rippin, *Muslims: Their Religious Beliefs and Practices*, 4th edn (London and New York, 2012), p. 240.

64 M. Abū l-Kalām Āzād, *The Tarjumān al-Qurʾān*, trans. and ed. S. Abdul Latif (Hyderabad, 1978), 3:374.
65 Ibid., 3:382.
66 Sayyid Abū l-Aʿlā Mawdūdī, *Tafhīm al-Qurʾān*, trans. Zafar Ishaq Ansari (Leicester, 1993), 5:127–133; see also vol. 3:33 of his original interpretation in Urdu [available as an online source].
67 Abū l-Kalām Āzād, *The Tarjumān al-Qurʾān*, 3:375–383. See also Khurshid Hasan, "Qurʾānic Archeology" *Islamic Studies* 35/2 (1996), pp. 203–209.
68 Āzād, *The Tarjumān al-Qurʾān*, 3:382.
69 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 9:194–197.
70 He refers to several Indian thinkers, including Ahmad Khan, Gandhi and others in his *tafsīr*, which suggests he had access to their works.
71 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 24:307–308.
72 Ibid, 24:308–309.
73 al-Nishābūrī, *Gharāʾib al-Qurʾān,* chapter 76.
74 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān*, 24:310–311.
75 N. Amīn, *Makhzan al-ʿIrfān*.
76 al-Ghazālī, *Iḥyāʾ ʿUlūm al-Dīn*, trans. Fazlul Karim (Lahore, 1978), as *The Book of Worship*, p. 211 [also available as online source].
77 Modern exegesis of the Qurʾān is commonly divided into the following categories: (a) Natural history: having statements on natural wonders in qurʾanic phrases, along with the Qurʾān's aptitude for expressing them, has led some thinkers to convey topics related to nature from the Qurʾān. This allows an exegete to attempt to see most or all possible domains of human knowledge in the Qurʾān. Jansen has reported that "the legitimacy of scientific exegesis for adherents occasionally comes out from some prophetic ḥadīth(s): There will be dissensions (*fitan*). Then we asked him: 'What way will there be out of them?' He answered: 'The Book of God. It contains the tiding on what was in the past. It announces what will be in the future . . .'" Accordingly, Jansen formulated his impression of the above *ḥadīth* as follows: "This tradition at least unambiguously refers to the Koran as revealed through Mohammad and not to its heavenly supposedly complete ur-version, its last phrase ('It announces what will be in the future') is ambiguous. By far-fetched explanation could one take it to be a reference to modern industrial and scientific developments, but it is undoubtedly an allusion to the Koranic announcements of heaven and hell and the tribulation of the Last Day"; (b) The philological aspect: Rotraud Wielandt referred to the philological aspect as "interpreting the Qurʾān from the perspective of literary studies," something that was established by Amīn al-Khūlī; (c) The everyday or practical aspect: this is mostly related to social issues of the modern world. As such, it can be said that Ṭanṭāwī Jawharī compiled an exegesis dealing with natural and cosmological phenomena as well as the day-to-day or practical issues facing Arab-Muslim societies; Jansen, *The Interpretation of the Koran in Modern Egypt*, pp. 36–37; Rotraud Wielandt, "Exegesis of the Qur'an: Early, Modern and Contemporary," in Jane D. McAuliffe (ed.) *Encyclopedia of the Qurʾān* (2002), 2:124–141.

5 Europeans in a twentieth-century *tafsīr*

A different view

European colonialism and its exploitation of Eastern societies has shaped a type of cultural resistance that highlights the importance of three different but related elements: unity, identity, and nationality. As Edward Said said, "the creation of associations and parties whose common goal was self-determination and national independence"[1] was the result of such resistance. It is thus to be expected that many of the nineteenth- and early twentieth-century Muslim thinkers who lived during the colonisation and decolonisation period frequently referred to Europeans, their progress, and their systematic plundering of the East. Europeans also raised controversial questions about the significance of the (medieval) period of Islam and whether Muḥammad was a faithful servant of God. Collectively, these issues stimulated Muslims to do or say something.

As such, Sayyid Jamāl al-Dīn and Sir Aḥmad Khān were among the first thinkers to take different approaches to the [modern] West. The former viewed many European theories through a materialist/naturalist lens, while the latter paid particular attention to European science, education, and nature. However, ʿAbduh's translation and re-production of Sayyid Jamāl al-Dīn's work *The Truth about Naturalists and their School* took a harsh stance towards Europeans and mainly viewed them as "materialists."[2]

Nevertheless, both these figures often emphasised the importance of science and intellectual pursuits, which led their followers to allocate a particular space to such in their own studies. In the 1880s, Sayyid Jamāl al-Dīn (d. 1897) debated with Ernst Renan (d. 1892) about the possible compatibility between Islam and science. ʿAbduh, more than his master Sayyid Jamāl al-Dīn, addressed this issue and popularised the notion that modern, European science is indeed compatible with the Qurʾān.[3] Subsequently, Shaykh Ṭanṭāwī Jawharī, as well as other thinkers of the twentieth century, applied a particular approach to the Qurʾān, through which readers in general, and Arabs in particular, would be able to perceive that there is no gap between their religion and "the modern world." Previous sections have highlighted that he was particularly concerned with the issue of Muslim progress. To do so, he not only referred to classical Islamic thought and to events across the modern Muslim world, but was also at the forefront of familiarising Muslims with the West and with European thinkers. As he opined, his *tafsīr* is the best way for humans to attain happiness.

Among his contemporaries, he was not the only thinker to bring together the three elements of the Qurʾān, modern science, and Europeans within his publications. Apart from Sayyid Jamāl al-Dīn and ʿAbduh, the physician and scholar Muḥammad b. Aḥmad al-Iskandarānī (d. c. 1888) was one of the first Arabs to refer to modern science from a perspective that was not polemical, although he occasionally noted how modern discoveries gave superiority to Europeans over Muslims. He was a pioneering scholar who, by employing modern findings – often without mentioning a particular or reliable reference – as well as applying classical *tafsīr*s (e.g. those of Ibn Kathīr and al-Zamakhsharī) highlighted that the Qurʾān is fully compatible with such modern scientific knowledge. He published some works both before and after the British colonisation of Egypt. In 1880, before the British occupation, he published his first volume, entitled *Kashf al-Asrār al-Nūraniyya al-Qurʾāniyya fī-mā yataʿallaqu bi'l-Ajrām al-samāwiyya wa'l-Arḍiyya wa'l-Ḥayawānāt wa'l-Nabātāt wa'l-Jawāhir Maʿdaniyya* ("Revealing the Luminous Qurʾanic Secrets Pertaining to the Celestial and Terrestrial Bodies, the Animals, the Plants and the Metallic Substances"). In this, he suggested that the science of qurʾanic exegesis (*ʿilm tafsīr kalām Allāh*) is the best way to attain knowledge of celestial and terrestrial bodies (*maʿrifa al-ajrām al-samāwiyya wa'l-arḍiyya*), the Oneness of God (*tawḥīd*), and the religious laws (*aḥkām al-sharʿiyya*), as well as to gain profound knowledge of the meaning of qurʾanic verses. Al-Iskandarānī stated that Q 15:21 ("And there is not a thing but that with Us are its depositories, and We do not send it down except according to a known measure") and similar verses advise Muslims that everything, from the highest to the lowest parts of the universe, can be ascertained through the commentary of this verse.[4] However, al-Iskandarānī's next work, *Tibyān al-asrār al-rabbaniyya* ("The Demonstration of the Divine Secret"), published in Damascus, not Cairo, in 1883, sometime after Egypt was occupied by Britain, refers to European discoveries and inventions that gave them superiority over Muslims, whose Scripture, the Qurʾān, according to al-Iskandarānī, mentioned or foretold such scientific knowledge.[5] Further studies on al-Iskandarānī's view towards Muslims, Europeans, and science are forthcoming.

Later, Tawfīq Ṣidqī (d. 1920), another Arab physician and a close friend of Rashīd Riḍā, highlighted the role of Europeans in the Muslim world. He neither followed Sayyid Jamāl al-Dīn's wish to unite all Muslims and refute Western materialism nor did he share al-Iskandarānī's purpose of merely demonstrating coherencies between modern discoveries and qurʾanic verses. Before demonstrating Ṣidqī's intention, it will be useful to provide readers with a short biography of this obscure but influential Islamic figure.

Tawfīq Ṣidqī, the Qurʾān, and addressing Europeans

Finding Muḥammad Tawfīq [Afandī] Ṣidqī's autobiography has proved difficult, but a reliable biographical source that is available is a short note in a section apparently dedicated to the "memory of the deceased," presumably written by

Rashīd Riḍā, in *al-Manār*. This note indicates that Tawfīq Ṣidqī and Riḍā had a close relationship, as they published a joint work entitled *ʿAqīda al-ṣalb wa'l-fidā* ("The Doctrine of Crucifixion and Redemption").

According to this note, "Ṣidqī was a man of literature and medicine who dedicated his life to combining medicine with the religious sciences (*ʿulūm al-dīn*) and applying Islamic principles to the foundation of modern science." He was born on 19 September 1881 (24 Shawwāl 1298). As a physician, he often worked in Cairo's prisons (*bi'l-sujūn al-Qāhira*). Ṣidqī had started to memorise the Qurʾān when he entered a Qurʾān school (*maktab*), where he became interested in acquiring religious knowledge. He finished primary school in 1896 and secondary school in 1900, after which he enrolled in a medical school, graduating from there in 1904. Upon becoming a qualified physician, he was given a job at one of the most prestigious hospitals in Egypt, Qaṣr al-ʿĪnī/ʿAynī. Then, in 1905, he was directed to work at Ṭura Prison in Cairo, before moving to a correctional centre in 1914. He was afflicted with typhus and passed away on 21 April 1920 (2 Shaʿbān 1338).

Despite his short life, his works, mostly conveyed via *al-Manār*, were controversial. In terms of his approach to Europeans, it can be divided into three distinct views. First, he was very well-known for the particular emphasis he placed on the guiding role of the Qurʾān, while also placing much less significance on the importance of *ḥadīṯh*. Ṣidqī deemed that the Qurʾān was revealed to Muḥammad himself, and, therefore, its validity and reliability is definite, unlike the traditions (*aḥādīth*) that were collected after Muḥammad's death in c. 632 CE. In line with many Qurʾān commentators, Ṣidqī viewed it as being the source of all worldly knowledge and that of the Hereafter. In general, he was called a "Qurʾānist" and one of the *Ahl al-Qurʾān*. He earnestly wanted to demonstrate to Europeans, their colonial officers, and those who rejected the divinity of Islam, that the Qurʾān truly is the most impeccable scripture among all.

As well as his strong views on the Qurʾān, as outlined in *al-Islām huwa al-Qurʾān waḥda*, for example, he was recognised as an apologist for Islam. He paid much attention to modern exegetical sources and modern science, as well as biblical literature, in an attempt to eliminate any doubts about the Qurʾān, Muḥammad, and Islam, which were chiefly emanating from European studies of Islam. Through this article, which highlights the central role of the Qurʾān in the Muslim world, Ṣidqī made an important contribution to religious debates in the Arab world. It appears that Ṣidqī considered Europeans in general, and Christians in particular, his target audience. He begins *al-Dīn kulluh min al-Qurʾān* with "we write this short notice to Christians (*li'l-naṣārā*) who try to challenge the Qurʾān." This is a response to those Christians who had claimed the Qurʾān is a distorted scripture because of the absence within it of a decree regarding the stoning of adulterers (*al-zānī al-muḥṣan*). Ṣidqī contended that some of the minor popular concerns of Christian as regards Muslims, which are not apparent to readers of the Qurʾān at first glance, include: (a) the prohibition of a woman marrying her uncles/paternal aunt or her maternal aunt (*taḥrīm nikāḥ al-marʿa maʿa ʿammatihā aw khālatihā*); (b) the stoning of adulterers; (c) the prohibition of the use of gold

and silver containers and utensils (*taḥrīm istiʿmāl awānī al-dhahab wa'l-fiḍḍa*); (d) the prohibition of men using silk cloth; and (e) the ban on eating domestic donkeys (in relation to the battle of Khaybar), among others. At the beginning of his discussion, Ṣidqī refers to the issuing of the *fatwā* permitting the killing of an apostate in Islam (*al-amr bi-qatl al-murtadd*). With reference to al-Sayyid, *Ṣāḥib al-Manār*, Ṣidqī said the decree was for specific periods of time and/or circumstances (*kān khāṣṣa li-ẓurūf khāṣṣa taqtaḍīhā al-ḥāla fī dhālik al-waqt*), to prevent questions and doubts about Islam among early Muslims. According to the Qurʾān, "Believe in that which was revealed to the believers at the beginning of the day and reject it at its end that perhaps they will abandon their religion" (Q 3:72). He also maintained that, in addition to such matters, Muslims are not allowed to kill someone just for apostasy, as God said, "There shall be no compulsion in [acceptance of] religion. The right course has become clear from the wrong . . ." (Q 2:256). To explain why women may not marry their uncles, Ṣidqī referred to both the Qurʾān (i.e. Q 12:100; 2:133) and Genesis.

Regarding the third issue (c), the reason for stoning adulterers is, according to Ṣidqī, that adultery leads to corruption of the earth and genetic mixing; it affects inheritance laws; and it implies the existence of hatred, conflict, and fighting among the people, and the weakness of the *umma*. He said that in the Qurʾān killing is not permitted except as retaliation (*qiṣāṣ*), which is applicable in cases of killing, and corruption of the earth. He goes on to refer to Q 5:32–33, saying that adultery is undoubtedly war against Allāh and His messenger as it is an act of disobedience and of attempting to cause corruption on earth (*wa-lā shak an al-zinā muḥāraba lillāh wa-li-rasūlih bi'l-ʿiṣyān wa-saʿy fī l-arḍ bi'l-fasād*). He deems that the term *yuqattalū* (in Q 5:33) signifies that "killing" is not something done instantaneously but gradually, just as was the act of stoning as seen in past divine religious law (*al-qatl lā yakūn dafʿa wāḥida bal tadrījiyyā kamā fī l-rajm wa'l-rajm maʿrūf fī l-sharāʾiʿ al-ilāhiyya al-qadīma . . .*).

Furthermore, as Umar Ryad has explained, "he extensively selected biblical passages, which he depicted as inappropriate, and raised many questions about them."[6] Apart from his emphasis on the Qurʾān and his support of Muḥammad's prophecy, the third group of Ṣidqī's works deal with a type of commentary on the Qurʾān and science in which he occasionally used his proficiency in medicine and English. Despite delivering a new kind of *tafsīr* of qurʾanic verses, one based on science, he still stressed the need to confront Europeans and Christians. In this regard, he published some articles in a section entitled *The Qurʾān and Science: An Interpretation of Language, History, Geography, and Medicine, to Reject the Doubts Imposed by Europeans on some Verses of the Noble Book.*

Regardless of the accuracy of his commentary, Tawfīq Ṣidqī employed a great deal of innovation in interpreting Q 34:14, "And when We decreed for Solomon death, nothing indicated to the jinn his death except a creature of the earth eating his staff. But when he fell, it became clear to the jinn that if they had known the unseen, they would not have remained in humiliating punishment." On this verse, Solomon's death (*mawt Sulaymān*) while leaning on his staff is described from the physiological perspective that he died in an upright position

due to a cadaveric spasm. Ṣidqī concluded that "this is the correct interpretation of this verse (Q 34:14) as it applies to science" (*fa-hādhā huwa al-tafsīr al-ṣaḥīḥ li-hādhi al-āya al-ladhī yanṭabiq ʿalā l-ʿilm*).

Moreover, in one of his pieces denouncing the perception of Europeans in general, and Margoliouth in particular, he again shows his sensitivity to the views of non-Muslims. In *al-Ḥijr fī l-Qurʾān al-Karīm/taṣḥīḥ iḥdā jahālāt al-mustashriq Marghuliyūth* ("The Rocky Tract in the Holy Qurʾān: Correcting the Error(s) of the Orientalist Margoliouth"), published in *al-Fatḥ* in 1942, Ṣidqī, referring to Q 15:80–82, starts the article with this point:

> There is a city called Bitrāʾ/Batrā (Greek: Petra means rock/*al-ṣakhra*) located between Aqaba and the Dead Sea. Petra, as well as Sāliʿ (Sela, a city), which have the same meaning, are mentioned in 2 Kings 14:7 and Isaiah 16:1. The high(est) mountain in this city is called Hor and it is mentioned in Numbers 33:38. Thus, Jews consider their people the first people of Hor, referring to cave dwellers. Their homes were carved into the rock and the city view was spectacular. Upon seeing this scene and hearing that "al-ḥijr" was mentioned in the Qurʾān, some Frankish travellers concluded that *al-ḥijr* is the translation of the Greek term "Petra" because they [wrongly] pronounced/regarded it as *al-ḥajar* . . . .[7]

As mentioned above, Ṣidqī chose an apologetic-polemic way to elaborate on and prove the uniqueness of the Qurʾān as a response to what were, in his view, European attempts to deliberately *mis*-interpret Islamic teachings.

In light of this, I went through all the volumes of Ṭanṭāwī Jawharī's *tafsīr* (see the last part of this study) to uncover his approach to modern discoveries, scientific discussions, and religious arguments that were popular at his time. One of the main topics he wrestled with was the dignity and status of humans in general, and Muslims in particular, in light of the contemporaneous position of Europeans. Unlike al-Iskandarānī and Ṣidqī, Ṭanṭāwī Jawharī neither wanted to merely support the coherence of the Qurʾān and modern science nor did he seek an apologetic role for Islam. He had several reasons for his approach, and an overview of his interpretation demonstrates that he saw Europeans from three different perspectives:

a Europeans as followers of a religion, i.e. as Christians;
b Europeans as scientists and intellectuals, such as Einstein, John Lubbock, and Darwin, all of whom employed the knowledge and heritage of Muslims to explain new theories, as well as Aristotle, Plato, Socrates, Jean-Jacques Rousseau, Kant, etc.;
c Europeans as colonial officers, orientalists, and political rivals of the Muslims.

Examining Ṭanṭāwī Jawharī's *tafsīr* suggests that he first addressed Arabs, then Muslims, and then all human beings. It also demonstrates his own dependence on the political party that was dedicated to preserving the nature and identity of Arabs. However, one of the main prescriptions for readers of his works is to view Europeans according to the above perspectives.

Europeans as followers of a religion

According to Ṭanṭāwī Jawharī, the universe (which includes an upper/higher and a lower part) is the clearest sign of the grace and favour of God to His creatures. Perceiving this divine mercy and favour is the initial step by which humans can attain the divine dignity they deserve. Self-knowledge, or *maʿrifa al-nafs*, has a reciprocal relationship with knowledge of the universe. As far as people know themselves (whether from a physical, anatomical, or spiritual perspective), they can understand the importance of the system of the universe (*niẓām al-ʿālam*), and vice-versa. He also, however, contended that most people are inattentive to (i.e. do not notice) such important wonders and do not know themselves either, except for a small number of them, which includes great thinkers (*ḥukamāʾ*) and saints (*awliyāʾ*).[8]

To Ṭanṭāwī Jawharī, Muslims were the most uneducated people of his time, as they engaged in dogmatism and, more significantly, jurisprudence, a field already fully explored by their ancestors. The latter, under the general term *sharīʿa*, includes *ḥudūd*, the law of *bayʿ*, *qarḍ*, inheritance, criminal law, etc. as addressed explicitly in books of *fiqh*. All these are *aḥkām al-sharīʿa* and taught seriously throughout the Muslim world. Ṭanṭāwī Jawharī thought that, in the future, Muslims would also read verses entailing natural and cosmological wonders and employ them in their lives.[9] He apparently saw science as a pivotal factor in human life, one through which the secrets of the universe, mentioned in the Qurʾān, can be discovered. The industrial achievements of Europeans were, as mentioned earlier, what initially motivated him to write about science and the Qurʾān. But he also argued that, despite their discoveries, Europeans are unable to perceive the basics of God's mercy. Their dependence on biblical literature, the removal of traces of religion from their society, and their unfamiliarity with the Qurʾān together stimulated Ṭanṭāwī Jawharī, in line with classical thinkers, to deem that Christians have gone astray. For Ṭanṭāwī Jawharī, the gospels and other religious scriptures include superstitions that prevent people from understanding the truth of religion and of God. In this regard, he discussed Christianity and its connection to Hinduism, and compared Hindu thoughts on Krishna with Christian beliefs regarding Jesus Christ:

> Krishna was born from a virgin; Jesus was born from a virgin. The people were foretold of Krishna's birth by a star from the sky; when Jesus was born, his star appeared from the East and led people to the place of his birth. Krishna's genealogy was in a Kingdom dynasty but he was born in poverty in a cave; Jesus Christ's genealogy is traced to a kingdom (Jewish King) but he was born in poverty in a cave. When Krishna was born, the cave was extremely illuminated; when Jesus was born, the cave was extremely illuminated. The Cow knew the Lord Krishna and worshiped and prostrated himself; The Shepherd knew Jesus and prostrated himself . . .[10]

Overall, Ṭanṭāwī Jawharī provided 46 examples of likenesses between Krishna and Jesus, after which he compared Buddha and Jesus. For example, "Buddha

was embodied from the transmigration of *Rūḥ al-Qudus* into the virgin Maya and Jesus was embodied due to the transmigration of *Rūḥ al-Qudus* into the virgin Mary."[11] Through comparative religious studies, Ṭanṭāwī Jawharī tried to prove that Islam is a divine religion and Muslims are the real believers with a specific status in the divine presence. As mentioned above, he saw "Nor of those who have gone astray" in Q 1 as referring to Christians.[12] For Ṭanṭāwī Jawharī, not reading the Qurʾān leads to not fully understanding the universe, and vice versa.

Ṭanṭāwī Jawharī felt that both Muslims and Europeans should give their attention to the Qurʾān and the universe in order to achieve self-knowledge, which would then lead to bliss, or *saʿāda*. It is thought that, according to Ṭanṭāwī Jawharī, Europeans recognised only one part of the importance of knowledge and nature, while twentieth-century Muslims examined the other, which meant having the the Qurʾān only, and paying scant attention to it.

Furthermore, for Ṭanṭāwī Jawharī, modern science was being discovered by Europeans and could play a supplementary role in helping people understand the concept of *tawḥīd*, or the uniqueness and authority of God. It can be concluded that, according to Ṭanṭāwī Jawharī, learning European science is permitted but following Europeans' [religious] attitude is not.

Europeans as scientists and intellectuals

Many statements of and discoveries made by Europeans and Americans reached the Arab world through magazines, newspapers, and journals, and many were published in Egyptian magazines dedicated to modern industry and European discoveries, such as *al-Muqtaṭaf*. The publication of magazines that reflected both Europeans and Muslims' modern views seems to have been a competition of sorts in Egypt.[13] As mentioned earlier, *al-Hilāl* and *Revue du monde Musulman* (in France) monitored the latest publications by prominent scholars in Europe and the Muslim world.[14] As well as the frequent references made by Ṭanṭāwī Jawharī to these journals and to some American magazines, he was also impressed by the European discoveries that he encountered in his hometown. In the last part of this book, which examines his *tafsīr*, there are many references to non-Muslim scholars, scientists, and literary figures, from ancient to modern times. Among the ancients, the names of Socrates, Plato, and Aristotle are included, while he also mentions modern scholars such as Kant, John Lubbock, Spencer, Gustave Le Bon, Einstein, and so on, and many of them are called *ʿallāma* ("most-learned scholars") in his *tafsīr*. Here, however, Ṭanṭāwī Jawharī's main aim was to highlight that when non-Muslims make discoveries about the universe and nature they will find things that are already explicitly expressed in Islamic texts. Not only did he believe that Darwin's theory of evolution had previously been explained by medieval Islamic thinkers, but he also said that the basic ideas that led Einstein to the Theory of Relativity were expounded in the Qurʾān and other Islamic sources much earlier.[15] This point also recalls "[ʿAbduh] citing contemporary European scientists on the organization of ants as the pre-ʿAsharite ideas of early Muslim theologians."[16]

Occasionally, Ṭanṭāwī Jawharī related to his Muslim audience the Europeans' admission about the "Dark Ages" of Europe and the contemporaneous golden period of Muslims. For instance, he highlighted the statement of a French scholar who said that the fourteenth- and fifteenth-century European thinkers who claimed they had made cosmological and natural discoveries were liars and thieves because they did not have access to observatories (*al-marāṣid*) in Europe at that time. Thus, Ṭanṭāwī Jawharī said, Europeans were the students of earlier Muslims, mainly those who lived in Andalusia.[17]

Ṭanṭāwī Jawharī also compared (*muwāzana*) the beliefs of European scientists with the accounts written by classical Muslim scholars in order to prove that Muslims who had studied the Islamic sciences in general, and qurʾanic sciences in particular, had achieved the same results as Europeans. In this regard, he said that the topics of the Creator and His craft discussed in nineteenth-century studies on physical geography were also identified and discussed by al-Ghazālī.[18]

As mentioned earlier, Ṭanṭāwī Jawharī translated the English version of Kant's book *Education* into Arabic and he greatly admired John Lubbock, a famous banker and naturalist. These points also stimulated me to investigate which genres of studies were examined by both Ṭanṭāwī Jawharī and these other figures. Immanuel Kant paid particular attention to human knowledge from three different bases: studies of physical objects (i.e. "zoology, the study of animals; botany, the study of plants; and geology, the investigation of rocks"); studies of things based on the temporal plane (i.e. history); while the final one "involves understanding facts relative to spatial relationships" (i.e. geography, which includes numerous subsets, including physical, mathematical, moral, political, commercial, and theological geography).[19]

On the other hand, Ṭanṭāwī Jawharī clearly followed Lubbock's ideas regarding the beauty of nature. It seems that his concerns, as outlined in his Qurʾān commentary and other religious treatises, resemble the topics discussed in John Lubbock's books *The Use of Life* and *The Pleasures of Life.*They were translated into various Eastern and Western languages, and the English-language versions quickly sold out.[20]

The themes of Ṭanṭāwī Jawharī's works in general, and his *tafsīr* in particular, follow the presentation of the above European scholars' works, the main difference being that Ṭanṭāwī Jawharī analysed these topics within an Islamic context, and, indeed, Islamicised them. For instance, "And now about the 'ant' (*al-naml*), a specific type of mercy to this animal is that Allāh created an insect for it called the aphid,"[21] is a phrase that describes the process of co-existence between ants, plants and aphids, which is also mentioned in Lubbock's works. Furthermore, his frequent references to Herbert Spencer, English writers and poets like Shakespeare, and Greek philosophers such as Plato are also, to some extent, seen in Lubbock's *The Use of Life* and *The Pleasures of Life.*[22]

For Ṭanṭāwī Jawharī, discovering different areas of the scientific disciplines of Europe can be achieved by scrutinising the universe, nature, humans, animals, plants, and the earth. He argued that establishing these sciences had made Europeans successful and united in terms of their power over the East. Meanwhile, because of

the enormous treasure they have been given (i.e. the Qurʾān), Muslims remain fully engaged in the science of *fiqh*. Ṭanṭāwī Jawharī's emphasis on both education in science and the importance of nature recalls John Lubbock's statement:

> Books, even with all the help they can receive from mediation and discourse, can supply only part of education. The boy who has studied books only knows nothing of nature, nothing of the world in which we live, cannot grow into a whole man; he can never be more than a mere fraction.[23]

Considerations from Lubbock's *The Pleasures of Life*,[24] such as the value of time, the pleasure of travel, science, education, ambition, wealth, health, love, art, poetry, music, the beauty of nature, the troubles of life, religion, the hope of progress, the destiny of man; and those from Lubbock's *The Use of Life*,[25] such as health, national education, self-education, social life, industry, faith, hope, on peace and happiness and religion, are all topics discussed, to a greater or lesser extent, in Shaykh Ṭanṭāwī Jawharī's *tafsīr* and various other of his publications.

Europeans as colonial officers, Orientalists and political rivals of the Muslims

This section of Ṭanṭāwī Jawharī's work addresses those ignorant of Islamic heritage, those who have propagated the so-called "Muhammad-phobia," and those who have taken advantage of Muslim negligence to develop their own religion and culture, and to transfer science and heritage to Europe. Ṭanṭāwī Jawharī discusses at great length the relationships between non-Muslims and Muslims, and this can be divided into two main parts. The first part presents European colonial officers and political rivals, who, due to their lust (*shahawāt*) for power, authority, and non-humanistic purposes, moved into Eastern societies. Ṭanṭāwī Jawharī presented them in a similar way to those negligent Muslims he saw as being preoccupied with their own lusts. Thus, he considered both to be ignorant and people whose thoughts and minds had no spiritual purposes.

Ṭanṭāwī Jawharī placed the second group of Europeans among the Orientalists. The main group of Orientalists addressed by Ṭanṭāwī Jawharī were the French and the British, whose superiority over the Orient extended up to World War II, after which, as Edward Said says, America came on the scene. The importance of the notions of "Europe" and "European" for Ṭanṭāwī Jawharī is similar to the idea of Deny Hay, who "has called the idea of Europe, a collective notion identifying 'us' Europeans as against all 'those' non-Europeans,"[26] by which Europeans visited and lived in the East, a region that, according to some eighteenth- and nineteenth-century Europeans, encompasses the Bible lands, and un/intentionally highlighted the backwardness of Islamic nations. According to Ṭanṭāwī Jawharī, despite there being some just and faithful scholars among them, there were also biased Christians who, following the ideas of people from the medieval period, attempted to portray Muslims and their prophet Muḥammad as ignorant. To prove this, he wrote a long explanation of the efforts made by Christians to tarnish the

image of Islam, which had begun many centuries earlier. He opened with a section entitled "The Intentional Distortion" (*al-taḥrīf al-ʿamdiy*), in which he informs readers of the intense hostility against Muslims in some Christian sources.[27] He translated and explained forty items of such accusations (e.g., "the revelation sent down to Muḥammad came from *Shayṭān*; Muḥammad was an extremely sinful person"; [28] etc.) that had appeared in European print media. He then stated that these unjust people did not realise that many infidels and disbelievers had converted to Islam upon observing the forgiveness, kindness, and braveness of the Prophet of Islam.[29]

Ṭanṭāwī Jawharī attempted to highlight that the colonial officers who were imposing their dominance over Muslims and Eastern communities, as well as the biased Christians who were following their medieval forebears by distorting the image of Islam, do not understand the universe. For Ṭanṭāwī Jawharī, science and an understanding of nature lead one to perceive God's mercy, and the aforementioned peoples are unaware of either the general or the particular mercies that God gives to humans. Despite not being happy with European interventions and colonialism, Ṭanṭāwī Jawharī owed many parts of his interpretation to them, although he did not clearly highlight whether he believed them to be good or bad servants of God. He emphasised instead that the acquisition of science gave Europeans wealth and power, just as Muslims had had in their own "golden age." He argued that science and an understanding of nature and the wonders of the cosmos are the most important elements a human needs in this world. Thus, by studying the Qurʾān, Muslims may easily attain this position if they understand the qurʾanic references to these subjects.

His continual references to Europeans were primarily intended to show that:

- Europeans were negligent of science in the medieval era while Muslims were powerful and advanced at that time;
- Europeans are powerful and advanced now while Muslims are negligent and overly-preoccupied with *fiqh*.

He also emphasised that, at some point in the past, the Christian Europeans followed up on the Muslims' discoveries and, in so doing, had been able to establish new branches of science, through which they gained power and authority. Now, he wrote, is the time for Muslims to re-acquire science from the Europeans. To avoid the problem of Muslims worrying about using non-Muslim products he directed the Muslims' attention to qurʾanic references to *ʿilm* and natural matters. He also paid particular attention to education and the family by saying that a sound educational system reveals to people the mercies, arts, power, and elegance of God.

Notes

1 E. W. Said, *Culture and Imperialism* (London, 1994), p. xii.
2 For more information, see Elshakry, *Reading Darwin in Arabic*, pp. 119–122.
3 See Elshakry, *Reading Darwin in Arabic*.

4 M. b. Aḥmad al-Iskandarānī, *Kashf al-asrār al-nūraniyya al-Qurʾāniyya fī-mā yataʿallaqu bi'l-ajrām al-samāwiyya wa'l-arḍiyya wa'l-ḥaywānāt wa'l-nabātāt wa'l-jawāhir maʿdaniyya* (Cairo, 1880/1297), 1:2–5.
5 J. J. G. Jansen, *The Interpretation of the Koran in Modern Egypt*, pp. 40–41.
6 U. Ryad, *Islamic Reformism and Christianity: A Critical Reading of the Works of Muhammad Rashid Rida and his Associates (1898–1935)* (PhD diss., Leiden University, 2008), p. 193.
7 According to the journal notice, this article was published after Ṣidqī's death: *bi-qalam al-duktūr Muḥammad Tawfī Ṣidqī raḥmat Allāh* ("written by Dr. Muḥammad Tawfī Ṣidqī, may God's mercy be on him"). Some phrases of the original article are unreadable, so this is not an exact translation, and it may be possible to produce a better translation upon finding a more legible copy of the article.
8 Ṭanṭāwī Jawharī, *Tafsīr Sūrat al-Fātiḥa* (Cairo, 1952), p. 6.
9 Ibid., pp. 14–16.
10 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 3:205–209.
11 Ibid.
12 Ibid., 1:18.
13 It was not only Arabs who addressed Europeans and their scientific discoveries in the twentieth century; Iranian figures also did so. The famous Iranian novelist Ṣamad Behrangī (d. 1967) published a well-known short story called *Māhī-yi Siyāh-i Kuchūlū* ("The Little Black Fish"), in which communication between the Little Black Fish and the Moon indicates the entrance of European discoveries among literary figures: "Fish said: O beautiful Moon! I love your light very much, I wish it always reflected on me. Moon said: My dear Fish! In fact, I, myself, do not have light. The Sun gives me light and I reflect it on Earth. Have you ever heard that [some] humans want to fly and come and sit on me in a couple of years? Fish said: It is impossible. Moon said: It is difficult, but whatever they want, humans are able to . . ." [my own translation. It was also translated into English by Ruby Emam]; Ṣ. Behrgangī, *Māhī-yi Siyāh-i Kuchūlū* (n.p.), pp. 13–14. Furthermore, A. Kasravī (d. 1946) wrote a treatise called *Payām bi-Dānishmandān-i Urūpā va Āmrīkā* ("A Message to the Scientists of Europe and America") in 1933/1321, in which he says: "You, scientists, in your progress in the field of science made a mistake that has expenses for the world. In your studies of animals and the process of their creation, you have concluded that there is a conflict and battle between animals in this world and that whoever is powerful (with more authority) deserves to live, and destroys the weak . . . and thus you have announced that life is a battle and everyone who is powerful overcomes the weak in this world and that is their right. This increases the ignorance of people" (p. 7). This statement seemingly rejects the theory of evolution by natural selection presented by Darwin.
14 Majid Daneshgar, "French Journals: A Bridge for the Presence of Muslims in Europe in the Nineteenth and Twentieth Centuries," pp. 16–18.
15 See the English translation of Ṭanṭāwī Jawharī's thoughts on Einstein's Theory of Relativity in the Appendix.
16 Elshakry, *Reading Darwin in Arabic*, p. 167.
17 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 4:69–70.
18 Ṭanṭāwī Jawharī, *Mīzān al-Jawāhir fī ʿAjāʾb hādhā l-Kawn al-Bāhir* (Alexandria, 1989), pp. 87–89.
19 M. Pidwirny, "Introduction to Geography," *Fundamentals of Physical Geography*, 2nd edn, 2006 [Online source].
20 M. Patton, *Science, Politics and Business in the Work of Sir John Lubbock: A Man of Universal Mind* (Aldershot, 2007), p. 223.
21 Ṭanṭāwī Jawharī, *Tafsīr Sūrat al-Fātiḥa,* p. 7.
22 J. Lubbock, *The Use of Life* (New York and London, 1895); idem, *The Pleasures of Life* (Philadelphia, 1894). Many such scholars and topics were referred to by ʿAbduh, but finding direct references to ʿAbduh by Ṭanṭāwī Jawharī is difficult.

23 Lubbock, *The Use of Life*, p. 105.
24 Lubbock, *The Pleasures of Life*.
25 Lubbock, *The Use of Life*.
26 Said, *Orientalism*, p. 7.
27 It seems Ṭanṭāwī Jawharī's desire to highlight Europeans' intentional distortion was a result of one of the two fears that were later articulated by Edward Said as being his own, i.e. the distortion and inaccuracy of the "Oriental," which was caused by the Europeans' racist, imperialist, and dogmatic perspectives; ibid., pp. 15–20.
28 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 14:175–199.
29 Ibid.

6 Post-Jawharism

Maurice Bucaille, the Qurʾān, and science

Although Ṭanṭāwī Jawharī is still considered one of the key figures in qurʾanic scientific interpretation, he is cited and studied less often than later scholars whose interests participated in the Qurʾān-and-science debate. One of the most prominent figures in this debate in the twentieth century was Maurice Bucaille, whose publications can be found in many bookstores and Islamic centres in the West. It is common to have Ṭanṭāwī Jawharī and Bucaille grouped together when talking about scientific interpretation of the Qurʾān.[1] However, this section will demonstrate that Bucaille's approach to science in the Qurʾān differed considerably from that of Ṭanṭāwī Jawharī. The main section will examine Bucaille and his interpretation of the Qurʾān, and will suggest that other famous scholars (i.e. scientists) who have attempted to *re*-establish a connection between Islam and science, such as Keith Moore, Zakir Naʾik, and others, were keen on ascribing to the Qurʾān a divine status based on the results of empirical experimentation and by establishing the doctrine of scientific inimitability (*iʿjāz ʿilmī*). However, their efforts have failed to arouse and unite Muslim communities.[2]

Maurice Bucaille and his works

Maurice Bucaille (1920–1998) was the head of the surgical section at the University of Paris. He was also the family physician of the Saudi King, Faisal.[3] He spent his pre-university years at a Catholic school, in which Christianity was given greater emphasis in the curriculum than it would have at an ordinary school.[4] He then went to L'École de Medicine in Paris to study medicine, leaving his birthplace of Pont l'Évêque (Normandy). For his internship, he had the position of *gastro-entérologue*.[5] He also started historical-hieroglyphical studies, and became acquainted with Islam from contact with patients, some of whom were Muslims, and one of them recommended that he read the Arabic Qurʾān;[6] subsequently, he attended L'École Nationale des Langues Orientales Vivantes for three years in order to learn Arabic.[7] It seems he had a connection with the President of Egypt, Anwar Sādāt (d. 1981),[8] because when Sādāt's wife fell sick Bucaille was deemed the appropriate physician as he knew Arabic as well as Egyptian culture.[9] The promotion of his interdisciplinary thesis on the connection between qurʾanic verses and scientific facts was due to his studying the pharaohs'

mummies from thirteenth century BC in Cairo in 1974–1975, investigating the mummy of Ramesses II in Cairo and Paris, and with knowledge of Egyptology, a good command of Arabic, clear familiarity with qurʾanic verses, and a relationship with King Faisal (d. 1975). The reputed French publisher Seghers invested in Bucaille's first book *La Bible, le Coran et la science: Les écritures saintes examinées à la lumière des connaissances modernes,*[10] which was promptly translated into English[11] and various other languages. During his lifetime he published several other books, the majority of which were written in French. Seghers published most of them, including *L'homme d'où vient-il? Les réponses de la science et des Écritures Saintes* (Seghers, 1981, p. 218); *Les momies des pharaons et la médecine*: *Ramsès II à Paris, le pharaon et Moïse* (Seguier Publisher, 1987, p. 247); *Moise et Pharaon*: *Les Hebreux en Egypte*: *quelles concordances des livres saints avec l'histoire*? (NTT Mediascope Inc and Seghers, 1994–1995, p. 263). *La Bible, le Coran et la science* drew the most global attention of all his works. First-rate translators have rendered his works into their own languages. For instance, *What is the Origin of Man?* was published by the renowned Turkish publisher İnsan Yavinlari as *Insanin kökeni nedir*. In 1989, Bucaille contributed to a book project on *Réflexions sur le Coran*, in which he conversed with his Tunisian co-author Mohamed Talbi[12] about qurʾanic thoughts and reflections on society.

Bucaille's work among Christians and Muslims

Although Bucaille presented a "comparative work" about the connection between science, the Bible, and the Qurʾān, his work apparently did not enjoy expected popularity among Christians who believe that the Bible is divine and infallible. But for many Muslims, it was a brilliant work that they believed uncovered the inimitability of qurʾanic verses.

For instance, the documentary "Maurice and the Pharaoh" received special attention from Arab Islamic foundations and won the Most Creative Islamic Work Award in 2010.[13] It seems Bucaille's explicit interest in Islam and the Qurʾān was the main reason Arabs and the al-Jazira Documentary Film Festival nominated it as the best documentary work. The film addresses the main reasons why Bucaille began investigating the relationship between religion and science. His curiosity about this relationship had started when he heard about the recent discoveries of cave-paintings in the south of Spain when he was only 15 years old. This led him to the belief that science may be able to answer many of his religio-historical questions. He scrutinised the Judaic-Christian writings and thought they were, in his view, replete with contradictions with modern scientific knowledge. He gave an example: "the Gospel of Luke mentions that you have between Adam and Jesus seventy-six generations, which is not possible!" He believed thinkers in general, and exegetes in particular, from Christian religious communities assumed that religious teachings were inspired to the authors of the Bible, but elements that are not religious teachings were in fact written according to the ideas, superstitions, and myths of their lifetimes.[14] Bucaille tried to compare the Qurʾān with other Holy Scriptures. He maintained that the Bible

contains some ridiculous statements and that the Qurʾān is the most infallible.[15] In the preface, he implied the Bible is full of mistakes that fall into three categories: "(i) historical inaccuracies or anachronisms; (ii) implausible statements; (iii) blatant contradictions."[16] Bucaille referred to historical data, scientific knowledge, and other scriptural statements with the purpose of displaying the obvious mistakes in the Bible.

Genesis 24 indicates that a camel was a means of transportation in the time of Abraham. But Bucaille disregarded that by saying this biblical note is not true based on pictorial documents about ancient Egypt.[17] Bucaille focused on the biblical text of Genesis and considered the genealogical background of humans to ascertain whether biblical ideas are reliable. He stated:

> In the biblical texts of Genesis, the dates and genealogies given would place man's origins (i.e. the creation of Adam) at roughly thirty-seven centuries B.C. In the future, science may be able to provide us with data that are more precise than our present calculations, but we may rest assured that it will never tell us that man first appeared on Earth 5,786 years ago, as does the Hebraic calendar for 1975. The Biblical data concerning the antiquity of man are therefore inaccurate.[18]

Some Christians and Muslims always disagreed with such comments on the scriptures.[19] For them, works such as that by Bucaille had the potential to destroy everything. Wood stated that "his discussion of the Bible draws heavily on modern Western anti-supernaturalist treatments of the Bible, based on evolutionary models of the development of religion. These models are at odds not only with biblical teachings but even more so with qurʾanic teachings about revelation."[20] The significant opposing argument began with the point that a comparative study to distinguish the scientific truths in the Bible and the Qurʾān is (probably) not logical, because the Qurʾān was, based on some of these arguments, revealed in a mono-cultural context rather than the multi-cultural context of the Bible. Thus, Wood expressed that:

> This idea, which often underlies the Muslim discomfort with certain Christian doctrines such as the Trinity, follows naturally from the Muslim rejection of the idea of total depravity. For Muslims, man is naturally born Muslim (i.e. submissive to God), and his intellect is not fallen. In practice this conviction may lead Muslims to more optimism and less suspicion of human intellectual constructs than Christians might have.[21]

From Bucaille's perspective, many points found in the Bible are inaccurate, and there is no reason to compare biblical scripture with scientific facts.[22] Bucaille also believed that contradictions in the Gospels indicate a confusion as to the genealogical background of Jesus. In his opinion, the disjointed literature in the Gospels signifies this paradox. After claiming this about biblical ideas, Bucaille then exclusively looked for a degree of compatibility between the qurʾanic text

and modern science. This scientist was convinced that the Qurʾān did not contain a single questionable statement from a modern perspective.[23]

Opponents denied Bucaille's anti-biblical claims that the attestation between religious scriptures and modern science should be an initial measuring scale towards identifying the authenticity of a sacred text. For example, Campbell questioned the level of scientific accuracy required in this matter. In his view, the meaning of the term "science" is not restricted to Bucaille's assumption that it is some definitely-established standard like physiology, embryology, and so forth; as such, Campbell wished to seek and explain religious truths and to define the term "science" in a traditional manner. Campbell provided a broad definition, one resembling that presented by Aristotle on knowledge; he referred to the Latin rooted-word of "scientia," meaning "knowledge," and with boundaries that were wider than Bucaille mentioned in his book. Campbell's primary stance was that "sciences" are those things that a human can know and believe or evaluate. As a result of this disagreement, Campbell drew attention to some theological arguments:

> I do not claim that this book deals only with science, or that spiritual matters "lie outside the subject of our study". This book deals with science, but it also deals with the problems which are really basic to any discussion between Muslims and Christians. What does the Qurʾān say about the Bible? Has the Bible really been changed? How does the Muslim know that the Qurʾān has not been changed? What is the place of the *Hadith*? What does God say about intercession in the Bible and the Qurʾān? How can we recognize a **true prophet**?[24]

The next critical statement refers to why Bucaille measured the Bible based on modern science, and why he assumed the compatibility of the Bible with scientific facts would be cause for questioning its authenticity.

As such, Campbell categorically denied the claims made in Bucaille's book.[25] He presented a disputation that is still being engaged with by Muslims such as Seyed Kamran Mirza, who introduced Bucaille's work. He stated that "Bucaille wrote a not well-written book which led people to misunderstand Qurʾanic intentions, and unfortunately many *ʿulema* still supported his wrong opinions. Also, Campbell pointed out that Bucaille was a courtier physician of the King of Saudi and his household. He was offered millions of American Dollars by the King owing to his published book."[26]

Nevertheless, Bucaille's book received considerable attention and his work paved the way for other scholars to elaborate on it. For example, the Western embryologist Keith L. Moore also spent part of his life in Saudi Arabia, and studied the embryological notes found in Islamic texts and, particularly, in the Qurʾān. He presented his embryological interpretation of Q 22:5, 23:13–14, 32:9, 39 to the *Journal of the Islamic Medical Association of North America* in 1986.[27] With the help of Muslim scholars such as Shaykh ʿAbdul Majīd Zindānī,[28] former professor of Islamic Studies at King ʿAbdul Azīz University of Jeddah, Saudi Arabia and the founder of al-Imān University in Yemen, Moore later expanded his

embryological thoughts. He referred to Q 39:6 to develop his scientific account and attempt to prove a connection between embryological statements and the accuracy of the verse "He makes you in the wombs of your mothers, in stages, one after another, in three veils of darkness." Subsequently, Moore performed a chronological study on available embryological notes about the creation of the human being in the mother's womb. Indeed, to demonstrate the accuracy of qurʾanic statements, he said that a primitive illustration of a foetus in the uterus was only drawn by Leonardo da Vinci as late as the fifteenth century, even though the book *On the Formation of the Foetus* by Galen had discussed the placenta and fetal membranes in the second century AD. He also declared that, in the fourth century BC, Aristotle had highlighted the development and growth of the chick embryo.[29] What Moore suggested is that nobody could have discovered the stages of human creation in the womb until the fifteenth century. He then contended that various interpretations exist with respect to the three veils of darkness.[30] Moore presumed that not only will the scientific boundaries in the Qurʾān not be restricted in the future, but various other qurʾanic verses related to human beings, with new interpretations, will soon to come to light.[31]

Bucaille and Moore's comments did not please some biologists like Paul Zachary Myers (b. 1957), an American scientist, biologist, and writer of the famous blog "Pharyngula." Myers refuted the compatibility between science and religion by declaring "Scientists! If you're not an atheist, you aren't doing science right!"[32]

Hamza Andreas Tzortzis and his friend Adnan Rashid disputed with Myers on the embryological claims of Keith Moore regarding the Qurʾān.[33] Tzortzis established various public debates with the aim of clarifying the presence of God in the world and demonstrating the authenticity of qurʾanic texts for those who disbelieve about such matters. For instance, he authored the article "Embryology in the Qurʾān: A Scientific-Linguistic Analysis of Chapter 23" in 2012, in which he attempted to respond to academic and non-academic contentions on the subject, of which the most notable is "the Prophet Muhammad Plagiarizes Ancient Greek Embryology."[34] He suggested that the examples of scientific issues in the Qurʾān do not mean the Qurʾān is a "book of science" but rather a book of verses with linguistic flexibility for interpreting various meanings, such as signs, proof, evidence, and miracles.[35]

Zākir Nāʾīk, a famous Indian preacher, also relied on Moore's embryological discoveries and said: "Noting that the information contained in the Qurʾān and *ḥadīth* is in full agreement with the latest discoveries in the field of embryology, Prof. Moore said 'if I was asked these questions thirty years ago, I would not have been able to answer half of them for lack of scientific information.'"[36]

It is believed that Moore's publications regarding the embryo and the Qurʾān had a significant impact, causing Muslims to produce an impressive body of work subsequently. He had formulated his ideas when he joined the Embryology Committee of King ʿAbdulazīz University in Jeddah, where he assisted researchers with commenting on qurʾanic and Sunna phrases pertaining to "human reproduction and prenatal development." He himself expressed his surprise at

the accuracy of these phrases as they were recorded in the seventh century AD and Muslims' important contributions to knowledge (e.g. medicine) in the tenth century AD.[37] He also said:

> because the staging of human embryos is complex owing to the continuous process of change during development, it is proposed that a new system of classification could be developed by using the terms mentioned in the Qurʾān and *Sunna*. The proposed system is simple, comprehensive, and conforms to represent embryological knowledge."[38]

After Moore, the number of Western scholars who devoted their time to learning about the scientific elements of qurʾanic verses increased. William W. Hay, a geologist/oceanographer, stated at an official gathering that the scientific information in the Qurʾān is really interesting and noteworthy.[39] Later on, ʿAbdul Majīd al-Zindānī, as the main member of the Commission on Scientific Signs in the Qurʾān and Sunnah in Saudi Arabia, collected several questions dealing with scientific discoveries.[40] His questions were systematically asked of prominent scholars including Keith Moore, William Hay, Yushidi Kusan,[41] Alfred Kröner,[42] Gerald C. Goeringer,[43] T. V. N. Persaud,[44] and E. Marshall Johnson.[45] Yet, it is not clear how many of these figures confirm what is attributed to them on different websites.

In line with the aforementioned scientists, the contact between some Muslims (e.g. al-Zindānī) and Maurice Bucaille, Keith Moore, and others sparked debate as to whether there really was any relationship between [these personal] connections and the comments of William Campbell or Mirza on the financial expectations of Bucaille. Whatever the reason, it is clear that post-Jawhari scholars, including Bucaille, Moore, and other scientists, and thanks to al-Zindānī, familiarised people with the novel doctrine of *iʿjāz ʿilmī* and explored other qualities (*khawāṣṣ*) that they found in the Qurʾān that they believed enabled them to foretell scientific findings, which was certainly not the intention of Ṭanṭāwī Jawharī. *Iʿjāz ʿilmī* was **officially** pronounced in Mecca where the first conference on Muslim Education aimed at the Islamisation of knowledge was held in 1977.[46]

Due to the particular socio-political conditions of the post-colonial and post-war era in the East and the West, the period from the 1970s onwards saw the emergence of different groups among various rulers (e.g. King Faisal, Mohammadreza Shah Pahlavī) and thinkers which debated the relationship between Islam, science, culture, and Western technology. Later, in 1996, Christopher Furlow classified the scholars involved in the Islam and science debate into three groups: Modernists emphasising that "science is value-free, neutral, and objective," such as Mohammad Abdus Salam; indigenists who "hold that Europe-American model of science cannot be adopted wholesale and uncritically," such as Ismail al-Faruqi; and Nativists who declare that "the modernist model of science is a product of Western civilization and is embedded within the Western worldview," such as Hossein Nasr.[47] Indeed, *iʿjāz ʿilmī* (defined by Guessoum as "a mixture of pseudo-science and naïve exegesis and theology"[48]) was able to emerge

on the basis of such debates about science and Islam of the second half of the twentieth century. Although it is possible to imagine a position for Ṭanṭāwī Jawharī in one of the above categories, it would be more appropriate not to do so. This is because Ṭanṭāwī Jawharī's works are the product of another heated debate/discourse that occurred in a different socio-political context, one that emerged in the nineteenth and early twentieth century among Sayyid Jamāl al-Dīn, ʿAbduh, Rashīd Riḍā, Ṭanṭāwī Jawharī himself, and others both inside and outside Egypt and the Middle East (e.g., Marx, Renan). These figures had a knowledge of the West and the Far East that was incomplete in comparison with that of subsequent generations, and concerns that revolved primarily around Islamic autonomy, colonialism, progress, civilisation, tradition, and intellect.

But now let us return to Bucaille. He established a specific methodology of comparative study between the Bible and the Qurʾān in light of science.

Bucaille and science in the Qurʾān

Bucaille's scientific translation

Undoubtedly, it would not be difficult for a Westerner such as Bucaille (whose conversion to Islam is generally accepted even though, to my modest knowledge, he himself never declared it) to gain exegetical popularity among Muslims by criticising the Bible and praising the Qurʾān. For instance, the *Islamic Press Agency*, published a report entitled "Bucaille is a renowned exegete of the Qurʾān."[49] However, "scientific translation" was, for Bucaille, a link between his scientific explanations and the meanings of various verses or phrases. He presumed that modern science has had an influence on the meanings of the terms or phrases. Regarding Q 96:2, for example, the majority of translators write ". . . created man out of a (mere) clot of congealed blood."[50] But Bucaille drew the readers' attention to a *reformed* translation. According to his claim, all translations of Q 96:2 are inaccurate and should have been translated into a perfect form like ". . . who fashioned man from something that clings." Bucaille made sure that the term *ʿalaq* can accurately be rendered as "something that clings" and the common translation as "blood clot" is incorrect. According to Bucaille, humans never pass through the stage of a "blood clot," saying: "The original sense of 'something that clings' corresponds exactly to the modern, firmly established reality."[51] It seems that the *Sahih International Translation* was probably inspired by Bucaille's explanation of Q 96:2: ". . . created man from a clinging substance,"[52] although other translators, mainly those who translated the Qurʾān before Bucaille, thought differently:

Evidently, Bucaille's absolute empirical view of scientific elements in the Qurʾān (e.g. Q 96:2) and the translation of qurʾanic verses indicates why, for example, he employed the meaning "chewed flesh" for the word *muḍgha*, found in Q 23:14. He stated that the embryo is initially a small mass. By passing through various stages, it is, to the naked eye, fairly similar to chewed flesh.[53] Also, based on Bucaille's definition, "intact flesh" is an appropriate meaning for the word *laḥm* "because the structure of bones brings up inside this mass in what is called

Table 6.1 The English Translation of Q 96:2 before Bucaille

Translator	*Translation of Q 96:2*[1]
Pickthall	Create man from a clot
Yusuf Ali	Created man, out of a (mere) clot of congealed blood
Shakir	He created man from a clot

1 All of these translations are available at: www.quran.com [Online source].

Created by Majid Daneshgar, Dunedin, New Zealand

the 'mesenchyme' and the bones will be surrounded by muscles for which *laḥm* will be used."[54]

It is worth noting that Bucaille did not adopt the modern interpretation and translation of some scholars who translated, for example, the term darkness (*ẓulumāt*), found in Q 39:6, from an anatomical perspective.[55] He remarked that "I am obliged to quote this verse for the sake of completeness; the interpretation given here does not seem to me to be disputable from an anatomical point of view, but is this what the text of the Qurʾān really means?"[56] On this subject, Bucaille believed that many anatomical findings are true and compatible with qurʾanic texts, although he was not confident as to whether such findings are able to define or explain the verses. Another example of Bucaille's disagreement regarding (mis-)translations regards Q 86:6–7. Some French and English translators have rendered these two verses as: "(Man) has been created by a liquid poured out which issues from between the vertebral column and the bones of the breast." Bucaille claimed that such translations resemble commentaries and are not based on scientific evidence; therefore, they should be translated as "(Man) was fashioned from a liquid poured out. It issued (as a result) of the conjunction of the sexual area of the man and the sexual area of the woman."[57] Bucaille believed that wrong translations such as these inevitably lead to incorrect interpretations. This implies that Bucaille had a specific point of view on how scientific facts should inform translations and explanations, but he did not fully use scientific findings to express the meanings of verses because he was not confident such findings are able to define their central tenet(s).

Physiological criticism

Bucaille criticised great thinkers and translators because he wanted to affirm the significance of the role that the empirical sciences (e.g. physiology) can play in explaining qurʾanic verses. Bucaille argued that only he, and no other translator, could produce an acceptable translation of Q 16:66.[58] Meanwhile, he also critiqued the translations of Blachère and Hamidullah,[59] which caused him to deduce that there was no compatibility between these translations and modern scientific notions. He asserted that "a translator, however expert, is liable to make mistakes in the translation of scientific statements, unless he happens to be a

specialist in the discipline in question."[60] Bucaille's translation and interpretation are presented as follows:

> Verily, in cattle there is a lesson for you. We give you to drink of what is inside their bodies. Coming from a conjunction between the contents of the intestine and the blood, milk pure and pleasant for those who drink it.[61]

Bucaille's argument here is in two parts: (a) a literal investigation and (b) a scientific explanation. Regarding the first, Bucaille himself noticed that "I have translated 'inside the bodies' and not as R. Blachère and Professor Hamidullah have done, 'inside their bellies'. This is because the word *baṭn* also means 'middle,' 'interior of something' as well as 'belly.' The word here does not have a meaning that is anatomically precise. 'Inside the bodies' seems to concur perfectly with the context."[62]

To develop the latter, Bucaille applied his physiological knowledge, stating that "physiological notions must be called upon to grasp the meaning of this verse." Subsequently, he referred to many physiological findings about the mammary glands and concluded, "I consider that the existence in the Qur'an of the verse referring to these concepts can have no human explanation on account of the period in which they were formulated."[63]

Bucaille's approach to historical arguments

Bucaille had been educated in the West, where modern science was changing traditional views of history. As indicated earlier, one of the most significant western scientific movements in the nineteenth century was that started by Leopold von Ranke (1795–1886), who re-shaped modern approaches to the history,

> emphasizing such things as reliance on primary sources, narrative history and international politics. Ranke rejected the idea that each era is by definition superior to those that preceded it, as well as the idea of sweeping historical theories that attempt to encompass huge swathes of time and geography.[64]

Thus, his main point was that historical arguments based on Holy Scriptures are not controversial if their authenticity can be assessed based on historical-scientific facts.

Bucaille examined the maternal genealogy of Jesus from a qurʾanic perspective, based on verses Q 3:33–34. He later mentioned that there were many different errors in the naming of the "ancestors of Jesus" and his genealogical background in the Bible that are not present in the Qurʾān. As such, Bucaille defended the divine provenance of the Qurʾān by stating that Muḥammad was not the writer of the Qurʾān nor did he copy or paraphrase anything from the Bible and Gospels; otherwise, he would have made the same mistakes in his work.

A coherence between the Qurʾān and modern knowledge was once again imagined by Bucaille when he referred to historical data and archaeological

findings. He compared the authenticity of Noah's Flood and Exodus, both of which are mentioned in biblical and Islamic literature. In comparing Q 11:44, "Then the word went forth: 'O earth! Swallow up thy water, and O sky! Withhold (thy rain)!' and the water abated, and the matter was ended. The Ark rested on Mount Jūdiyy," with Genesis 8:4, "and on the seventeenth day of the seventh month the ark came to rest on the mountains of Ararat," Bucaille analysed the location of the mountain. He said that "this mountain is said to be the highest of the Ararat range in Armenia, [and also according to R. Blachère] but nothing proves that the names were not changed by man totally with the two narratives."[65]

Bucaille's extra-scientific notes

Theoretical issues

Bucaille brought together a number of theoretical issues about the creation and physiological aspects of people in one of his books, *What is the Origin of Man?* Many extra-scientific notes were expressed in this book to help readers comprehend his main ideas about the relationship between the Qurʾān and science. In *The Origin of Human Beings*, based on observable facts and logical deduction, Bucaille argued that the act of creation in the Qurʾān does not contradict the latest scientific information and its process was fulfilled "over the course of time through the increase in genetic information, which would appear to be the necessary explanation of the transformations undergone by living beings."[66]

One of his suppositions was that human faith has the capacity to uncover the secrets of natural phenomena (e.g. creation) once human knowledge in the fields of morphology, biology, and so on, increases. Thus, Bucaille's idea was that there is a direct relationship between the level of human understanding of the Holy Scriptures and that of knowledge. He also suggested that earlier exegetes of the Qurʾān (*mufassirūn*) were able to explain the outward (*ẓāhir*) façade of qurʾanic verses while humans today are also able to understand their interior (*bāṭin*) meaning because of the increased scientific knowledge (particularly morphology and biology).[67] In addition, he felt that

> if one compares the statements in the Qurʾān with the findings of genetics, however, the true meaning of the verses becomes perfectly clear. Needless to say, the verses were intelligible to man throughout the ages, but until recently, commentators have only been able to uncover their apparent meaning.[68]

Bucaille's claim is that classical readers of Islam were convinced by the interpretations found in classical qurʾanic exegetical works because they helped them to perceive God's omnipotence.[69] Later, Bucaille compared the impact of science on his interpretation with early exegetical works on the Qurʾān. For instance, to interpret Q 76:28 and Q 6:133, Bucaille said these verses are related to the "punishment inflicted by God on sinful communities" from a classical perspective,

but in the modern view, it implies the disappearance of certain communities "and their replacement by others" and increased diversity in their morphology.[70]

Extra stories

Using lengthy stories, Bucaille attempted to elaborate on some topics on which he had insufficient information (e.g. astronomy and astrophysics). This technique had been previously applied by Ṭanṭāwī Jawharī in commenting on various astrological and cosmological phenomena supposedly mentioned in the Qurʾān. "The Creation of the Heavens and the Earth" is a section in Bucaille's book in which, for an explicit interpretation of Q 25:59; 32:4; 50:38; 65:12; 78:12, he referred to the most recent human observations and findings related to the cosmos and the universal.

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Unlike Ṭanṭāwī Jawharī, Bucaille did not encourage any particular group of people to any specific end by talking specifically to them or encouraging them to reach a specific goal. Instead, he tried to assess empirically the authenticity of the Holy Scriptures. Bucaille largely held an experimental, or practical, view of science in the Qurʾān. Science was, for him, a search for facts that should be reached via analysis. Bucaille had two main aims in his work: pondering creation and the cosmos empirically, and scrutinising the authenticity of the scriptures through the lens of modern theories. He did not lose sight of his attempt to prove scientific facts based on empirical analysis. As far as historical arguments are concerned, Bucaille turned to scientific facts as a source, and never trusted the "unreliable" [from a scientific point of view] stories narrated in the scriptures alone.

His nationality, expertise, and modern approach to science was ultimately the key factor that brought repute to his work among Muslims. It was through philological investigations, along with plenty of empirical notes, that Bucaille was able to significantly elaborate on scientific facts surrounding creation. He went so far as to highlight how archaeological findings display the reliability of common historical narratives between the Bible, the Gospels, and the Qurʾān. Furthermore, his comparative methodology was perceived as innovative, as it stemmed from critiquing the three Holy Scriptures.

It should also be noted that Bucaille felt that discovering new layers of qurʾanic statements is possible through making use of empirical knowledge. He believed that such knowledge is a suitable instrument to be wielded in qurʾanic exegetical works. Bucaille was a scientist because he obeyed modern scientific rules, although he was not known as an *ʿālim* as he had no training in Islamic teachings and laws.

Ṭanṭāwī Jawharī *vis-à-vis* Bucaille

In addition to the aforementioned variations between Ṭanṭāwī Jawharī's and Bucaille's approaches to science in the Qurʾān, a few points regarding their methodologies will now be highlighted.

- Ṭanṭāwī Jawharī revived a central classical approach to *ʿilm* and knowledge, one not restricted to a specific discipline, while Bucaille developed the classical exegesis through empirical science.
- In contrast to Ṭanṭāwī Jawharī's attempts to raise and unite Muslims, Bucaille promoted a scientific interpretation of the Qurʾān that eventually led to the idea of the scientific inimitability of the Qurʾān.
- To the best of my knowledge, neither Ṭanṭāwī Jawharī nor Bucaille referred to earlier modern Islamic interpretations which had a scientific inclination or basis. For instance, Ṭanṭāwī Jawharī could have referred to al-Iskandarānī's works, and Bucaille would have been able to use Ṭanṭāwī Jawharī's.
- Ṭanṭāwī Jawharī and Bucaille differed in their approaches toward living beings (insects, birds, etc.): Bucaille had a scientific way of analysing the majority of natural and cosmological points mentioned in the Qurʾān while Ṭanṭāwī Jawharī defined verses by including the terms for birds or insects with an ethico-social purpose so that humans can understand God's mercy.
- Bucaille never mentioned Ṭanṭāwī Jawharī's name in his works, nor did Keith Moore, signifying that Bucaille may have disagreed with Ṭanṭāwī Jawharī's exegetical approach.
- In writing his exegesis, Ṭanṭāwī Jawharī was mainly influenced by the Arabs' general decline and malaise, whereas Bucaille and other scientists were impressed by scientific matters.

Notes

1 Bigliardi argued that, according to Guessoum, "scientific interpretation is a kind of exegesis aimed at illuminating the content of at least some qurʾanic passages that mention natural phenomena by referring to modern scientific knowledge; the latter is the identification of specific scientific notions, inventions, and discoveries supposedly foretold in the Qurʾān. However, Guessoum recognizes that Bucaille stands midway between these two"; Stefano Bigliardi, "The 'Scientific Miracle of the Qurʾān': Map and Assessment," in M. Daneshgar and W. A. Saleh (ed.) *Islamic Studies Today: Essays in Honor of Andrew Rippin* (Leiden-Boston, 2016), pp. 339–353. See also Nidhal Guessoum, "The Qurʾan, science, and the (related) contemporary Muslim discourse," *Zygon* 43/2 (2008), pp. 411–431.
2 Nonetheless, Bucaille agreed with the linguistic inimitability of the Qurʾān when he compared it with modern Arabic texts. He talked about modern Arabic, such as Ṭāhā Ḥusayn's *al-Ayyām*, to compare it to the Arabic of the Qurʾān.
3 M. Iqbal, *Islam and science* (Aldershot, 2002), p. 164.
4 Stefano Bigliardi, "The Strange Case of Dr. Bucaille: Notes for a Re-examination" *The Muslim World* 102/2 (2012), pp. 248–263.
5 Ibid.
6 One of his patients asked him in which language he read the Qurʾān; Bucaille replied that he read it in French. Then the patient said: "Only when you can read the Book in its original language, you may be able to get acquainted with the entire religion." See "Maurice and the Pharoah and From Microcosm to Macrocosm" [Online source].
7 Stefano Bigliardi, "The Strange Case of Dr. Bucaille: Notes for a Re-examination," pp. 248–263.
8 The President of Egypt introduced him to King Faisal.

9 Stefano Bigliardi, "The Strange Case of Dr. Bucaille: Notes for a Re-examination," pp. 248–263.
10 Also available at: http://openlibrary.org/books/.
11 Maurice Bucaille, *The Bible, The Qurʾān and Science,* trans. Alastair D. Pannell and Bucaille (Tripoli, 1978).
12 The most famous works of Ṭalbī are as follows: *Manhajiyāt Ibn Khaldūn al-Tārikhiyah* (*Ibn Khaldûn et l'Histoire)*; *Penseur libre en islam. Un intellectuel musulman dans la Tunisie de Ben Ali; Plaidover pour un Islam moderne.*
13 *Maurice and the Pharaoh* and *From Microcosm to Macrocosm [Online source]*.
14 Ibid.
15 Maurice Bucaille, *The Bible, The Qurʾān and Science,* trans. Alastair D. Pannell and Maurice Bucaille, p. 90.
16 Stefano Bigliardi, "The Strange Case of Dr. Bucaille: Notes for a Re-examination," pp. 248–263.
17 Ibid.
18 However, besides the unique sale of the book, Bucaille wrote one of the most conterversial books in the world because (a) he played an apologetic-exegetic role for Muslims although he was OR claimed to be a Christian and (b) he critiqued the Bible while praising the Qurʾān. These two issues led some non-Muslims to strongly critique all of Bucaille's efforts, because in his book the level of the authenticity of the Bible was determined as being lower than the Qurʾān. Indeed, non-Muslims were worried about Bucaille's so-called attacks on the Bible. However, he stated several times: "my choice is to tell the truth," a short statement that was not pleasant for non-Muslims, as Christians found that the first chapter of his book (entitled "The Old Testament – Examines the Origins of the Bible") describes the books of the Old Testament and critically examines scientific errors within them: Maurice Bucaille, *The Bible, The Qurʾān and Science,* trans. Alastair D. Pannell and Maurice Bucaille, p. 8.
19 The initial critical statement of Amīn al-Khūlī is recorded in Jacques Jomier and R. Caspar, "L'Exegese scientifique du Coran d'apres le Cheikh Amin al-Kholi" *Melanges de l'Institut Dominicain d'Études Orientales* 4 (1957), p. 269.
20 Kurt A. Wood, "The Scientific Exegesis of the Qurʾan: A Case Study in Relating Science and Scripture" (1993), pp. 90–95.
21 Ibid.
22 Maurice Bucaille, *The Bible, The Qurʾān and Science*, p. 7.
23 Ibid., pp. 8–9.
24 William Campbell, *The Quran and the Bible in the Light of History & Science* (US, 1992), Introduction.
25 Ibid.
26 He also said: "It was told that this doctor distorted the actual translation of the Holy Qurʾān by intentional/selective choosing of various meanings of Arabic words in order to match his theory of scientific explanation": *Religion and Science/Bucaille* [Online source]. Furthermore, Father Michele Lelong, an activist and author in the field of Islamic and Christian dialogue stated that "Maurice Bucaille was a Catholic believer; but I do not know how he became interested in Islam. But he realised very well that in the qurʾanic discourse on creation is a sign of God and while the act of creation itself is seen as a gift from God, it is also perceived as a call from Him upon mankind to believe in Him" (excerpt from the documentary).
27 Keith L. Moore, "A Scientist's Interpretation of References to Embryology in the Qurʾān," *Journal of the Islamic Medical Association of North America* 18/1 (1986), pp. 15–17; Majid Daneshgar, "The Qurʾān, Orientalists and Western Scholars," *al-Bayān Journal of Qurʾān and Ḥadīth Studies* 10/2 (2012), pp. 4–9.
28 It seems that Bucaille mostly paved the way for al-Zindānī. These individual Muslims took a camera and recorded scientists' notes about Islam. Moreover, some scholars believe that Bucaille and Keith Moore wrote about the relationship between science

and the Qurʾān not only because of the scientific aspect of Islamic texts, but to gain large (financial) rewards from the Saudi government. Abul Kasem wrote an article entitled "How Western Scientists Discovered $cience in Quran! The Tales of Bucaille and Moore, Two Occidental Charlatans," in which he states that "he knew Mullahs and other Islamists feel very happy whenever they find occidentals (white western persons) talking in favor of their faith (Islam). This is especially true when these western people try to associate the Qurʾān and Hadith with anything resembling an inkling of scientific truth." Abul Kasem also said "He thought that if only he could please the Islamists by writing a few good things about Islam he can have a good share of the petro-dollar that was pouring in Saudi Arabia"; see: Abul Kasem, "How Western Scientists Discovered $cience in Quran! The Tales of Bucaille and Moore, Two Occidental Charlatans" [Online source].

29 Keith L. Moore, "A Scientist's Interpretation of References to Embryology in the Qurʾān," pp. 15–17.

30 (a) The anterior abdominal wall; (b) the uterine wall; (c) the amniochorionic membrane. God forms us in the mother's womb; "creation after creation" implies the creation of each of us from a *nutfa,* then changing to the *ʿalaqa,* after which the bones and nerves are positioned and the soul is breathed into us. The "three veils of darkness" refer to the darkness of the womb, of the placenta that blankets and protects the child, and of the belly.

31 Keith L. Moore, "A Scientist's Interpretation of References to Embryology in the Qurʾān," pp. 15–17.

32 PZ Myers, *Scientists! If You're Not an Atheist, You Aren't Doing Science Right!* [Online source].

33 *PZ Myers pwns Hamza Tzortzis & Adnān Rashīd – Atheist Convention* [Online source].

34 Hamza Tzortzis, "Embryology in the Qurʾān: A Scientific-Linguistic Analysis of Chapter 23," *IERA Research* 2.1b/April (2012), pp. 1–80.

35 Then Hamza stated the idea of the Qurʾān speaking about nature and referred to Shabīr Akhtar's notes: "Nature's flawless harmonies and the delights and liabilities of our human environment, with its diverse and delicate relationships, are invested with religious significance. Created nature is a cryptogram of a reality which transcends it: nature is a text to be deciphered. Evidences accumulating in the material and social worlds and in the horizons jointly point to a hidden immaterial order"; see H. Abdul-Raof, *Qurʾān Translation: Discourse, Texture and Exegesis* (London, 2001), p. 66; Sh. Akhtar, *The Qurʾān and the Secular Mind: A Philosophy of Islam* (New York and Abingdon, 2008), p. 217.

36 Z. Nāʾīk, *The Qurʾān and Modern science: Compatible or Incompatible* (Riyadh, 2000), pp. 47–48.

37 K. L. Moore and ʿA. M. al-Zindānī, *The Developing Human with Islamic Additions*, 3rd edn (Jeddah, 1982 and 1983), p. viii.

38 Al-Zindānī, *This is the Truth* (video tape), Scientific Signs of the Qurʾān and Sunna containing interviews with various scientists; available in Arabic, English, French, Urdu, and Turkish. It came to my attention that an English transcript of this video with illustrations is also available: Abdullah M. al-Rehaili, *This is the Truth: Newly Discovered Scientific Facts Revealed in the Qur'aan and Authentic Sunnah* (Mecca, 1995), p. 14.

39 *Dr. William W. Hay's Comments about the Holy Koran* [Online source].

40 Abul Kasem believed that the Saudi government attempte to attract Westerners to talk so pleasantly about Islam. In his essay he wrote: "One wonders why the Saudi government has to employ an 'infidel' to interpret the Qur'an when there are no shortages of Islamic scholars for this job. Why did the Saudis not have qualified people from the 'Islamic brother' countries?"

41 *Scientists' Declaration about The Holy Quran and Islam, 9: Professor Yushidi Kusan* [Online source].

42 *Top Scientist: Professor Alfred Kröner comments on the Quran* [Online source]. The excerpt from the video is as follows:

> Thinking where Muhammad came from . . . I think it is almost impossible that he could have known about things like the common origin of the universe, because scientists have only found out within the last few years with very complicated and advanced technological methods that this is the case.Somebody who did not know something about nuclear physics 1400 years ago could not, I think, be in a position to find out from his own mind for instance that the earth and the heavens had the same origin, or many others of the questions that we have discussed here . . .

43 *Scientists Declaration about The Holy Quran and Islam, 5: Professor Gerald C. Goeringer* [Online source]. The excerpt from the video is as follows:

> In a relatively few *āya*s is contained a rather comprehensive description of human development from the time of commingling of the gametes through organogenesis. No such distinct and complete record of human development such as classification, terminology, and description existed previously. In most, if not all instances, this description antedates by many centuries the recording of the various stages of human embryonic and fetal development recorded in the traditional scientific literature.

44 *Embryology Prof T. V. N Persaud* [Online source].

45 *Dr. E. Marshall Johnson's comments about the Holy Koran* [Online source]. The excerpt from the video is as follows:

> As a scientist, I can only deal with things which I can specifically see. I can understand embryology and developmental biology. I can understand the words that are translated to me from the Qurʾān. As I gave the example before, if I were to transpose myself into that era, knowing what I do today and describing things, I could not describe the things that were described. I see no reason/evidence . . . to refute the concept that this individual Muhammad had to be developing this information from some place... so I see nothing here in conflict with the concept that divine intervention was involved in what he was able [to write] . . .

It seems in some videos the final phrases, including "to write," have been removed. The main references in this regard are extracts from the video "This is the Truth" by Shaykh al-Zindānī, Director, *Project of Scientific Miracles in the Qurʾān and ḥadīth*, King ʿAbdulaziz University, Jeddah.

46 Y. Cheng, *A Chinese life of Islam* (Selangor, 2012), p. 27.

47 See Christopher. A. Furlow, "Intersections of the Qurʾān and Science in Contemporary Malaysia," in M. Daneshgar, P. G. Riddell, and A. Rippin (ed.) *The Qurʾān in the Malay-Indonesian World: Context and Interpretation* (London and New York, 2016), pp. 236–238.

48 Nidhal Guessoum, "Islam and Science: The Next Phase of Debates," *Zygon* 50/4 (2015), pp. 854–876.

49 Islamic Press Agency magazine (April 1984), p. 77; see also Kurt A. Wood, "The Scientific Exegesis of the Qur'an: A Case Study in Relating Science and Scripture," *Perspectives on Science and Christian Faith* 45 (1993), pp. 90–95.

50 Yusuf Ali, *The Holy Qurʾān, Translation and Commentary* (United States, 1977).

51 Maurice Bucaille, *The Bible, The Qurʾān and Science*, p. 135.

52 In 1997, the *Sahih International Translation* was prepared by three Americans who had converted to Islam, and "Numerous scholars now regard it as one of the most accurate Qurʾān translations available" [Online source].

53 Maurice Bucaille, *The Bible, The Qurʾān and Science*, p. 136.

54 Ibid. There was a later French translation of the Qurʾān in which modern expressions were chosen when translating Q 23:14: "Ensuite, Nous avons fait du sperme une

adhérence; et de l'adhérence Nous avons créé un embryon; puis, de cet embryon Nous avons créé des os et Nous avons revêtu les os de chair. Ensuite, Nous l'avons transformé en une tout autre création. Gloire à Allah le Meilleur des créateurs!" *Le Coran* [Online source].

55 Modern scholars have claimed that three veils of darkness imply the three anatomical layers that protect the infant during gestation.
56 Maurice Bucaille, *The Bible, The Qurʾān and Science*, p. 136.
57 Ibid., p.137.
58 Ibid., p.130.
59 Blachère translated this verse of the Qurʾān as: "Verily, in your cattle there is a lesson for you! We give you a pure milk to drink, excellent for its drinkers; (it comes) from what, in their beliefs, is between digested food and blood." Hamidullah translated: "Verily, there is a food for thought in your cattle. From what is in their bellies, among their excrement and blood, We make drink pure milk, easy for drinkers to imbibe"; Maurice Bucaille, *The Bible, The Qurʾān and Science*, p. 130.
60 Ibid.
61 Ibid. Bucaille believed that this translation of the verse is close to the one given in the *muntakhab* of 1973.
62 Ibid.
63 Maurice Bucaille, *The Bible, The Qurʾān and Science*, p. 31.
64 *Leopold von Ranke Manuscript Collection* [Online source].
65 Maurice Bucaille, *The Bible, The Qurʾān and Science*, p.143.
66 Maurice Bucaille, *What is the Origin of Man? The Answers of Science and the Holy Scriptures* (Paris, 1982), pp. 73, 103.
67 Ibid., p. 93.
68 Ibid., p. 97.
69 Ibid.
70 Ibid., p. 85.

Part III

Reading the Qurʾān with Ṭanṭāwī Jawharī

لك الحمد علي نعمة العلم و بهجة الحكمة و سعادة الكشف و الايضاح...

كيف قصر المسلمون و نبغ الغربيون فى القرون الأخيرة و فلاسفتهم الأقدمون تلاميذ علماء الاسلام بالأندلس كما هم به معترفون

Ṭanṭāwī Jawharī[1]

7 114 *Sūras*

There has been only a vague understanding of Ṭanṭāwī Jawharī's *tafsīr*, and scholars are not familiar enough with the main themes he discusses in his 26-volume interpretation. Sometimes, it feels that his exegetical message is complicated and misunderstood. Thus, instead of relying on his *tafsīr*'s endnotes, I went through every volume in an attempt to find the key pieces of evidence that may enable scholars to understand Shaykh Ṭanṭāwī Jawharī's approach, reasoning, ideas, and thought on Qurʾān interpretation in the early twentieth century. Following many earlier exegetes, he first gives a literal interpretation (*tafsīr lafẓī*) to many *sūra*s, an approach which is not that different from other exegetical works. However, in contrast to almost all Muslim and non-Muslim scholars (including Bucaille), he provided readers with different sections for each chapter/verse.

To show how he addressed the various topics, I will start each *sūra* with "Particular Religious-Islamic Topics" (**PRIT**) to present the main qurʾanic issues expressed by Ṭanṭāwī Jawharī.[2] Subsequently, in order to demonstrate the gap between his *tafsīr* and scientific interpretations, there is a section called "Non-Islamic/Qurʾanic Accounts" (**NIQA**), which includes the main points on which scholars seem to base their claims that Ṭanṭāwī Jawharī produced an encyclopaedia of science. The following section demonstrates that all points mentioned in the **NIQA** section were a means by which Ṭanṭāwī Jawharī could enhance the position of Muslims in the modern industrial world. This is clear in the next section, which includes "Select Stories/Hikayat" (**STH**) that he uses to remind Muslims of a number of historical and contemporary events. The last part of this classification relates to "Select Ethical Notes/Historical Lessons" (**SENHL**), which will allow readers to comprehend the main points of Ṭanṭāwī Jawharī's *tafsīr*. Indeed, it is hoped this classification will highlight the way in which Ṭanṭāwī Jawharī read the Qurʾān in the early twentieth century, one that is different from the majority of other commentators. He explained many qurʾanic verses through aspects of science, and ascribed the delight of science (*bahjat al-ʿilm*) to specific verses. Sections where there is repetition or very general matters used by other interpreters are left blank.

Sūrat al-Fātiḥa *(Meccan,[3] 7 verses)*

PRIT: Types of God's Mercy; the wondrous world and creative power of Allāh; removing the ignorance of Arabs and worshipping Allāh; Islamic

law and observing the macrocosm and microcosm; *sharīʿa* as a science; the importance of education; the upper/higher universe; the lower universe; the wonders of the seas and corals; types of guidance; the importance of chastity, bravery, wisdom, and justice; the Jews' neglect (*tafrīṭ*) and Christians' excess (*ifrāṭ*); the ten sciences mentioned in the Qurʾān.

NIQA: The lives of beings such as ants, bees, spiders; the cultivation of corn, wheat seeds, palm dates, the cultivation of pearls in oceans; the embryo in the womb; breast-feeding; medical education; education in schools and general learning; on intellectuals' understanding of advanced science using logic that was bestowed by God; *ʿilm al-tashrīḥ* (anatomy).[4]

STH: Artificial incubation in the United States; the dialogue between Solon (d. 558 BC) and Croesus on "Who is the happiest of human beings?" (*man asʿad al-nās*).

SENHL: Muslims are obliged to learn about God's mercy in creating the universe; *sūrat al-Fātiḥa* refers to all issues mentioned in the Qurʾān.

Sūrat al-Baqara *(Section I; Q 2:2–176)* *(Medinan, 286 verses)*

PRIT: Praising the Qurʾān; the annunciation to believers; criticism of hypocrites and *kuffār*; the establishment of faith through beholding the heavens and the earth; the process of creation; the creation of human beings; the story of anger, lust, and reasoning; Ḥawwā and *ʿilm*; the Banū Isrāʾīl, who are lost and follow their lusts; the worshipping of idols; the seventh heaven; God, the Angels and His successor Adam; an ethical understanding of the story of Adam, Cain, and Abel; the survival of the Banū Isrāʾīl; the prophet's intercession; al-Ghazālī's view in *al-Iḥyāʾ*; some medical advantages; a commentary on Q 2:67–74 and related wonders; the attributions of unjust nations and their *ʿulema*; on magic; *al-nāsikh wa'l-mansūkh*, dealing with Q 2:106; the religion of Abraham; the issue of the *qibla*; the differences between night and day; the wonders of science and politics in the Qurʾān; the wonders of clouds; passion, love, and yearning, and the meaning of *ḥubb Allāh*; *al-ḥalāl wa'l-ḥarām* in qurʾanic verses; legal-*fiqhī* discussions on dead skin.

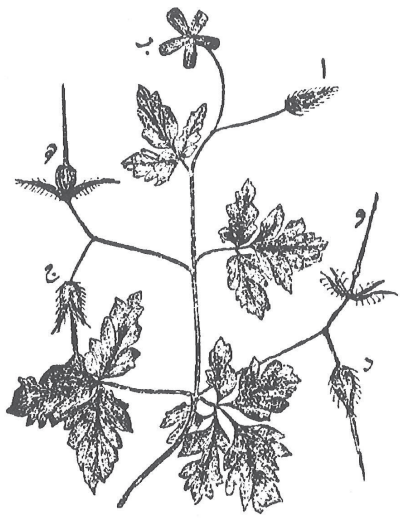
NIQA: On natural sciences; types of *maʿrifa*; how numbers are the origin of the universe, through reference to ʿAlī Mubārak Pasha and Pythagoras; the creation of the universe; planets and stars; the distance between the Sun and other planets; the speed of light; animal traits in humans; the establishment of the science of mediumship (séance) in the USA and its development in Europe; knowledge of magic in ancient times; the story of a Greek philosopher 500 years before Christ; the sun's angle of illumination of the earth; the diversity of substances and diversity of sound in the air.

STH: The story of a Russian lady visiting Egypt and her new understanding of Islam and the Muslim community; a story from his book *al-Arwāḥ*; stories about animals, trees, and plants.

SENHL: As Herbert Spencer (d. 1903) believed, religion and science are compatible if both develop correctly; it is recommended in the science of

وهناك أصناف من النبات تزرع بزورها بنفسها كما يرى فى الفول السودانى الذى يزرع فى هذا القطر ، فان القرون التى فيها بزوره تنحنى وتدفن نفسها فى الأرض .

وقد رأى لورد [افبرى] الذى اعتمدنا عليه فى أكثر هذا الفصل صنفا من البنفسج المسمى : بنفسج الكلب يدفن بزوره إلى بعد نحو عشرة أقدام ، والمشهور عندنا أن الخروع إذا نضجت أثماره أخذت تتفلق عن البزور فتحدث فرقعة أشبه بفرقعة البنادق وتدفع البزور إلى مسافة بضعة أمتار ، ويقال مثل ذلك فى النبات المعروف بالعصيفيرة .



[شكل ١١]
الجرانيوم [ابرة الراعى]

ومن ذلك نبت من فصيلة الجرانيوم [إبرة الراعى] إذا نضجت بزوره انتصب غلافها أو مبيضها ، ثم دفع الابرة ومعها البزور بقوة فزرقته الى مسافة بعيدة .

أما البت المعروف فى سورية باسم [قثاء الحمار] ، فانه يحمل ثمرا على شكل القثاء ، وعند نضجه يمتلئ عصارة حتى يكاد ينشق من نفسه ، فاذا مسسته ولو بلطف انفصل عن سوقه وضغطت جوانبه على بزره الى مسافة بعيدة .

على أن من النبات مالا يدفع بزوره من نفسه الى مسافة بعيدة ، بل يكل ذلك الى الرياح الهابة كالخشخاش ، فان فى أعلى غلافه فتحات صغيرة تفلت منها البزور واحدة واحدة إذا هبت الريح وتلاعبت بالغلاف وجعلت تميله إلى هنا وإلى هناك ، والفتحات محمية من المطر بمثل أروقة ممتدة فوقها ، ويقال انها تنغلق إذا غزرت الأمطار .

ومن

Figure 7.1 Ṭanṭāwī Jawharī's reference to Geranium as well as to John Lubbock, Lord Avebury.

Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qur'ān al-Karīm*, 26 vols (Cairo, 1923–1935)

akhlāq that humans should not sit/interact(!) with four types of people; humans surround themselves with pain and lust and do not attempt to see the universe and perceive its truths and wonders.

Sūrat al-Baqara *(Section II: Q 2:177–286)*

PRIT: Islamic law (*al-aḥkām al-sharʿiyya*); human perfection based on Q 2:177; retaliation (*al-qiṣāṣ*); bequest and testament; fasting and *jihād*; pilgrimage; wine and gambling; orphans; rules for marriage; menstruation; swearing to God; the oath of sexual abstinence and divorce; suckling; the waiting period for the *mutʿa* and for the widow; the secrets of *jihād* and the stories of Banū Isrāʾīl and their enemies; aspects of the messengers, God's essence, and *Āyat al-Kursī* (the Throne Verse); three degrees of science; the person who spends and the condition of *infāq*; comparing Islam and Christianity with European sciences; dealing/trading in property; usury and the reason for its ban, and al-Ghazālī's thoughts on the subject; mortgages and so on; belief in God and His messenger; supplication and victory.

NIQA: Types of gambling found in Egypt; horseracing in Egypt; the significance of unions (*al-ittiḥād*) and the combination of elements in cotton, barley, and alfalfa; frogs; the reason for the existence of spirits (based on a rational perspective and a mediumship-based discussion); some notes on sciences, most of which should be compulsory for Muslims.

STH: A story about the secrets of *Alif-Lām-Mīm* at the beginning of *sūrat al-Baqara*; the problems and lack of education in Egyptian schools.

SENHL: Knowing that God's essence is equal to bliss and can be obtained by planting the passion of God in the heart of Muslims in mosques and in their prayers by reading specific verses, e.g. *Āyat al-Kursī*.

Sūra Āl ʿImrān *(Medinan, 200 verses)*

PRIT: Analysis of *Alif-Lām-Mīm*; faith can be based on the divine scriptures or natural science; removing vices and acquiring virtues through good deeds and science; how to deal with enemies and those who argue; the story of Mary, Zechariah, John (Yaḥyā), Jesus, and the apostles, based on Q 3:33; Christians' arguments about Jesus and some proofs for the People of the Book; Q 3:100; the Prophet and the battle of Uḥud; hypocrites and Jews; thinking about the creation of the heavens and earth. Other important subheadings include: *muḥkamāt* and *mutashābihāt* in the revelation; angels and demons; supernatural aspects of the Qurʾān; Q 3:157 and the Gospels; the Gospel of Barnabas; Paradise and Hell; the wonders of science and religion, and the duty of Muslims; the rewards of this world and the Hereafter; the Qurʾān, rhetoric, and commentators.

NIQA: The spinal column in both humans and animals, according to French and British scholars; minerals and mines; additional notes on materials; the planets, and Newton's and Kepler's laws; gravity; snow and its forms; the structure of the ear; the structure and function of the visual faculty; instinctive lust

in animals; the cultivation of cotton; *al-muḥkam* and *mutashābih* in nature and animals; the qualities of numbers; animal embryos; human physionomy; how the body processes food; a comparison between different industries and different parts of the human body; perceptions/realisation and ethical virtues; God's wisdom in creating lust; the colours of seawater and the beauty of sea life; sects; supernatural and natural sciences; the Vedas; Buddhism; the religion of the ancient Egyptians; old and new sects of Christianity; the religions in Europe and political issues; ethics and Jews; the heavens; the Arabic translations of Shakespeare's poems; life after death according to Sir Oliver Lodge; the leap year; night and day; the seasons; the wondrous aspects of the Earth.

STH: An address to the Muslim thinkers in this world.

SENHL: There are important secrets for Muslims in the *hijāʾiyya* letters that are found in some *sūra*s; comprehending the meaning of Q 3:18 is only possible through understanding natural and cosmological science.

Sūrat al-Nisāʾ *(Medinan, 176 verses)*

PRIT: The beginning of creation; ties of kinship; financial deals; relationships between males and females; obeying God, the Prophet, and patrons (*awliyāʾ*); fighting and *jihād*; judges and lawyers' precepts and how they pronounce sentences; justice for women; arguing with the People of the Book; one of the jewels of the Qurʾān on education in Muslim nations in the future; the verse on trading and murder; secrets and miracles of the Qurʾān in the twentieth century; the religions/canons of the prophets, including Jesus.

NIQA: On *ʿilm al-ḥisāb* (arithmetic); the future of education in Muslim countries; Europeans in the West and Muslim figures in the East; the lust of colonialists in Europe and the lust of Eastern communities in general and Muslim society in particular; envy and greed; the universe and human order; psychometrics; minerals.

STH: Alexander the Great and the Indians.

SENHL: If trading with Europeans is good, their guns, aircraft, and their bombing of Muslim lands are like hell.

Sūrat al-Māʾida *(Medinan, 120 verses)*

PRIT: permissible and prohibited aspects of hunting; purification; the children of Israel and the covenant; the children of Adam; the sentence for murder, and for bandits and thieves; *aḥkām* of the *Torah*, the *Injīl*, and the Qurʾān; God's command to the believers; God's command to the prophets; what is permitted and prohibited in hunting and in drinking wine and gambling; types of *shahādāt*; God's speech to Jesus; a message to the Islamic nation; a message to Islamic figures (*rijāl*); a comparison between God's policy regarding the universe and the nations, and proof of His existence and wisdom; on apostasy; on death [penalty] for an apostate; qurʾanic miracles on the Last Day; a comparison between Krishna and Jesus Christ.

NIQA: Birds of prey; the bat; the crow; the praying mantis and scorpion; the silkworm; airships.

STH: Europeans entering Egypt and hunting/sacrificing animals; on the dove.

SENHL: Purification of the body is fulfilled by water and purification of the heart by praying; justice and the praising of favours; the importance of knowing the science of animals (zoology) to comprehend *sūrat al-Māʾida.*

Sūrat al-Anʿām *(Meccan, 165 verses)*

PRIT: Proof of God through natural science; Abraham's thoughts on the heavens; the upper and lower natural wonders; some of God's attributes; what is permitted and prohibited among livestock; some taboos and justice; qurʾanic wonders in modern science; a note on disbelievers and believers; the account of Shaykh Ḥasan al-Ṭawīl; the keys of science in this *sūra*; the prohibitions on the Jews.

NIQA: Clouds, gold, silver, and other minerals; the Earth's crust; humans achieving perfection after death; the spirits' features and ranking in modern science; animal wonders; the dog and the seal (*kalb al-baḥr*); the monkey and the elephant; the wolf; the fox and bear; cows and horses; bees; hypnosis and animal souls; the wonders of rats; the Sabeans; the interval between the seas of science (knowledge of the heavens and earth); the decline of Muslims and the progress of Europeans in recent centuries; the planets (Mars, Saturn, etc.); the wonders of light; the roots of trees; polar ice; the colours of the ocean; mineral water; planting and trees; the wonders of plants; camels, cows, and sheep; palm trees.

STH: Humans and animals.

SENHL: Europeans acquired many things from our ancestors who lived in Andalusia, among other places. This (now) is a time for Muslims to propagate the truth of Islam and rise to accomplish their scientific and civilizational/cultural accomplishments.

Sūrat al-Aʿrāf *(Meccan, 206 verses)*

PRIT: An introduction to *sūrat al-Aʿrāf*; on the story of Adam and Eve, and their exile from Paradise to earth; the importance of applying wisdom when considering qurʾanic stories; seeing and thinking about the creation of the universe; the story of Noah; ʿĀd and Hūd; Thamūd and Ṣāliḥ; the people of Lot; the people of Madyan (Midian) and Shuʿayb (Jethro); the lessons from these stories; the story of Moses and Pharaoh; the story of Balʿām b. Bāʿūrāʾ al-Kanʿānī; the Qurʾān and the River Nile; describing the believers; regarding Q 7:26 and the covering of animals;[5] the divine justice in dividing winter from summer and desert from sea; the wonders of qurʾanic secrets found in this *tafsīr*; praising God's favour; the future of the Jews after their fathers and ancestors' sins.

NIQA: The relationship between trading today and colonialism and the occupation of Eastern lands; hygiene; cloth and garments made of wool, cotton, etc.;

what to eat: butter, beans, vegetables, spices; types of meat and the length of time of digestion (for lamb, calf, chicken, pigeon, etc.); the features of drinkable water; diseases caused by contaminated water; the advantages of health; flies and diseases; cockroaches; opium, cannabis, and winter in Asia and Australia; discovering ancient Arab nations in recent centuries; animals and humans.

STH: The communication between a Christian physician and ʿAlī b. al-Ḥusayn b. al-Wāqid on types of science, and eating and drinking; the wastefulness (*isrāf*) of Moroccan kings; remembering one's youth and seeking knowledge.

SENHL: "Do you not see when a thinker leaves *ʿilm* and occupies himself with frequent worship [day and night] and forgets his people (*umma*), he, indeed, disobeys and oppresses himself; O Muslims! See how [non-Muslim] Westerners are investigating our heritage and works but we are heedless; as Imām al-Ghazalī said and I mentioned in my book *al-Arwāḥ*, chastisement is due to lust, sin, and ignorance."

Sūrat al-Anfāl *(Medinan, 75 verses)*

PRIT: The features of true believers; the battle of Badr; some recommendations to Muslims; the misguidance of the *kuffār* (disbelievers); dividing the spoils; how to behave with captives; scientific principles to know the Almighty; qurʾanic wonders in this age.

NIQA: Peace in the Muslim world; general reform; the human body; thinking about *nafs*; explosives in wars.

STH: A story from the Prophet.

SENHL: Faith includes both deeds of the heart and practical/physical deeds; individual morality is national morality; affection is not seen among Muslims because of their lack of knowledge about science (and *mādām al-ʿilm qalīlā kānat al-mawadda ḍaʿīfa bal hiya maʿdūma*); there are two types of inheritance: that of the dead and that of the living.

Sūrat al-Tawba *(Medinan, 129 verses)*

PRIT: The verses recited by ʿAlī b. Abī Ṭālib on the great pilgrimage day; incitement to *jihād* and *infāq* (holy war and spending in *Allāh*'s way); on Jews, Christians, rabbis, and monks, *jizya* (tributary tax), and the sacred months; hypocrites; believers; the *zuhd* (piety) of ʿUmar; charity for the poor; the sequel to *istihzāʾ* (mockery) during the prophet's period and our own; the end of Q 9 and the beginning of Q 9: early Islamic jurists, contemporary jurists, and future jurists.

NIQA: The amount for the *jizya*; the disagreement of Christians about Jesus; Arabic, European, and Coptic months; Islamic civilisation and European civilisation; people's neglect of beauty, understanding/perception, and general favours; Islam and colonialism; the reason for Muslims' tardiness and backwardness; reformers in Islam today; chemistry; botany and agricultural economics; medicine, the Graeco-Arabic school, Fakhr al-Dīn Rāzī and

Avicenna; the school of Spain, Ibn al-Qāsim, Averroes, and others; Arabic philosophy, theology, *fiqh* (jurisprudence), and literary sciences; Aristotelian philosophy.

STH: A poem recounting how "poor people taste bliss more than rich people" by an English poet, along with poems by Shakespeare and Abū l-ʿAlā.

SENHL: ——

Sūra Yūnus *(Meccan, 109 verses)*

PRIT: How this *sūra* is connected to the previous one; *Alif-Lām-Rā* and its secrets; the proofs of *tawḥīd* by beholding oneself; resurrection; proofs of prophecy; the story of Noah; the story of Moses and Pharaoh; qurʾanic miracles in the present; the Islamic nations.

NIQA: On the six days (*fī sitta ayyām*); human faculties (*quwā*); the year for the Persians, Egyptians, Chinese, Arabs, Jews, ancient Romans; the month for the Franks; the leap year; the joys of the sciences; Pythagoras' teaching style; Ptolemy, al-Fārābī, Avicenna, Copernicus; ʿAbd al-Raḥmān Aḥmad (d. 756) on the rotation of the Earth; scientific reasons for the rotation of the Earth; sunbathing; the human mind; the future of the people of earth and the duty of Muslims; the increasing global population; the seasons.

STH: A note on beholding *wajh Allāh*.

SENHL: The beauty that causes lust is destructive.

Sūra Hūd *(Meccan, 123 verses)*

PRIT: The story of the nations and prophets; the path of guidance; *āyāt al-akhlāq*; *āyāt al-ʿulūm*; *āyāt al-aḥkām*; *āyāt al-niẓām al-ʿām*; on addressing Muslim thinkers; the story of Noah, his making of the ark, and being mocked by the people; *al-ʿarsh* (the throne); *al-raḥma wa'l-ʿilm* (mercy and science); qurʾanic wonders and natural wonders; the story of Abraham; *khazāʾin al-jawāhir* (jewels) in *sūra Hūd*.

NIQA: Nutrition; birds; types of floods; wasps, owls, and fish; the colours of camels and lions; rabbits, bears, and arctic foxes; polar sheep, sables, crows, and their colours; the joy of light in animal wonders; a comparison between the life and death in animals and in humans; the Tatars;[6] the language of animals (including insects and chameleons).

STH: ——

SENHL: 11 verses of this *sūra* are *āyāt al-ʿulūm* (verses of sciences).[7]

Sūra Yūsuf *(Meccan, 111 verses)*

PRIT: Egypt and *sūra Yūsuf*; lessons from *sūra Yūsuf*; the connection between the story of Joseph and morals; the lessons and wonders of this *sūra*; why the story of Joseph is the best story; fortune tellers in Torah; the reason why *sūra Yūsuf* comes after *sūra*s *Yūnus* and *Hūd* respectively; the beauty of *Yūsuf* in modern science and the science of music; a note on Q 12:76; the first jewel in

the dreams of Joseph and the King; Muslim negligence regarding the lessons of this *sūra*.

NIQA: The most important social issues in civilised societies (principality, agriculture, trade, and industry); the Egyptian fields; the partners of humans in transplanting the soil of Egypt (e.g. birds); human and animal cooperation in agriculture; the protection of beneficial birds such as the cattle egret (*Abū Qirdān*) because it is the friend of farmers; on the book *A Thousand and One Nights*; how Europe teaches our children in Eastern communities; the accuracy of the spirits' statements upon their presentation; true and false dreams; on Peridot; dreams and reality; envy; Plato's view of science; industrial wonders in America; the intellectual movement and scientific experiments; Americans' innovation in agriculture; God and the sun.

STH: A story about seeing an ant in Masjid al-Jazīra; the social and educational contribution of women in the West in general, and the US in particular.

SENHL: How it would help Egypt to understand this chapter of the Qurʾān; this *sūra* includes five important lessons that are related to the nation of Egypt and wider Islamic society: (1) the dream of Sayyidinā Yūsuf, (2) hurting his brother, (3) the story of Bayt al-ʿAzīz, (4) the story in the prison, and (5) his appointment to organise the storehouses of Egypt; Egyptians surprisingly referring to Europeans' works while they do not know that many of these modern findings were previously explained by great thinkers like al-Fārābī; the main messages of this *sūra* are *siyāsa al-nafs*, *siyāsa al-manzil*, *siyāsa al-madīna* ([and] to control the self, family/household, and city); Muslims pay less attention to qurʾanic verses dealing with the stories of prophets, natural wonders, and ethical issues than they do to verses pertaining to *fiqh*.

Sūrat al-Raʿd *(Medinan, 43 verses)*

PRIT: On natural sciences and *tawḥīd*; ethics, reward, and retribution; prophetic traditions (*al-aḥādīth al-nabawiyya*); the joys of wisdom in Q 13:13; descriptions of Paradise; the warning/message of thunder to Muslims.

NIQA: On the sun, the earth, and plants; *ishrāq al-nafs* (soul's luminosity); types of mountains; rivers; mines; the wonders of this world; coal; rock crystal; glass and its history; the types of plants, grasses, and different types of winds; optimism and pessimism; thunder and lightning; sound, heat, and light; storms; the similarities between the Arabs' language and the Qurʾān; how to live a long life (from a Japanese thinker).

STH: On a specific type of plant and on locusts; a Chinese story.

SENHL: Three types of faculty/power in humans: rational power as lightning, anger as thunder, and bestiality as the clouds.

Sūra Ibrāhīm *(Meccan, 52 verses)*

PRIT: On the story of the prophets; the dialogues between the prophets and their nations; the future of liars; the supplication of Abraham; prohibiting the worship of idols; the doctrine of the trinity as understood by the ancient

nations (*al-tathlīth ʿind umam al-qadīma*); divine wisdom; jewels in ancient religions; on Christianity (also fully described in the *tafsīr* of Q 2:3 and final parts of Q 5).

NIQA: The translation movement during the Abbasid period; hostility to Averroes in Andalusia; the translation of Averroes' book into Hebrew; thinkers of the sixteenth century; thinkers of the seventeenth century; Galileo and the connection of his ideas to the inventions and ideas of al-Ḥasan b. Yūnus al-Miṣrī; the founder of the theory of blood circulation; thinkers of the seventeenth and eighteenth centuries; Isaac Newton; Benjamin Franklin; thinkers of the eighteenth and nineteenth centuries; Edward Jenner; Sir Humphry Davy; the science of chemistry and some notes on important chemists; thinkers of the nineteenth century; Charles Darwin and Chevalier de Lamarck; the circumstances of Muslim ignorance and their negligence; the fall of Abbasids; the loss of Andalusia; the French entry into Egypt; the British entry into Egypt; how Muslims can improve themselves; the effect of mental anxiety and disorder on physical health and actions; the privilege of the Dead Sea; on ancient Indian thinkers about the creation periods and ages of the universe.

STH: A reminder to Muslims (see the SENHL of this *sūra*); on artificial silk; a story of Edward Brown.

SENHL: Some lessons from the past: the Arabs' degradation before Islam, their glory after receiving it, conquering the lands of God in the East and the West, and their propagation of the Arabic language to the East and the West; the translation of the sciences and the genius therein, backsliding in science within the Muslim world; hostility towards Muslim thinkers, particularly Averroes; the transfer of knowledge from Averroes' students to Europe; the pre-eminence of Europeans over Muslims; the gradual disappearance of the Abbasids in the East and the Umayyads in Andalusia, the defeat of Muslims and their removal from Europe

Sūrat al-Ḥijr *(Meccan, 99 verses)*

PRIT: The connection between the mysterious letters at the beginning of some *sūra*s; the beginning of Creation; the end of this *sūra*; *al-irshād wa'l-indhār* (guidance and warning); Allāh is the light of the heavens and earth; God's message to the Angels and the Jinn.

NIQA: Meteors, according to ancient thinkers and European scholars (based on Ṭanṭāwī Jawharī's *Falsafa al-ʿarabiyya/Arabic Philosophy*); the Fireball; roots and their process of absorbing water; the leaves of trees; *al-Futūḥāt al-Makkiyya* ("The Meccan Openings") by Ibn ʿArabī; coal and its wonders; wind and its fertilising role; the beauty of plants; humans (early, current, and future); how aircraft will travel at 1,000 miles per hour (in the future); authorial statements (Shaykh Ṭanṭāwī Jawharī to the Muslim *umma*); the wonders of Greek and Roman philosophy.

STH: The benefits of dreams.

SENHL: There is a conceptual connection between the beginning of this *sūra* with *Alif-Lām-Rā*, *Sūra Yūnus*, and other *sūra*s; Islam includes two parts: (a) the phenomena of cults, including *ṣalāt* (prayer), *zakāt* (alms), etc., and (b) the realities of existence; how the primitive human was blessed as he followed his nature (*fiṭra*), the contemporary human is unhappy as he does not reach the root of knowledge, and how the future human will reach the end of knowledge (*nihāya al-ʿilm*); the main divine punishments are caused by ignorance.

Sūrat al-Naḥl *(Meccan, 128 verses)*

PRIT: The wonders of divine lights; Q 16:52; on praising God; the religions of each nation.

NIQA: The circle of existence/life; beasts and livestock; plants; jewels found in the sea; stars; ships and their movement by wind; shade; on applying electricity in agriculture; amazing contemporary inventions; the telegraph and telephone; farming and electricity; the desert ship; journey to the sky; pearls and coral; coral islands; the appearance of light in corals; the individual and social life of corals; this universe is like one common body; the sun and the wind; rhetoric in the natural sciences and in Arabic; people's ethics; the book of Aristotle; on manhood and womanhood; descriptions of animals; pictures of the digestive system in birds, animals, and humans; the difference between animals in how they movement; ants and spiders (from his book *al-Qurʾān wa'l-ʿUlūm al-ʿAṣriyya*); a note on honey and its wonders; justice between the people; the *Republic* of Plato and justice; justice in personal ethics; the animal system (*niẓām al-ḥayawān*) in this world; the ancient Egyptians; *Ayn al-Insān*; the qurʾanic system/order; God's justice to people on the Last Day; kindness; a treatise ascribed to Aristotle and Alexander on politics (political advice from Aristotle to Alexander); the justice system in the material world and the world of spirits.

STH: Egyptian stories about plants; a story of Ṭanṭāwī Jawharī falling ill with typhus.

SENHL: The human heart accepts and encompasses the image of divine beauty as water receives the image of stars; noxious weeds on the earth are like unpurified morality; sciences are divided into two categories: (a) the science people acquire based on their rational power and reasoning, (b) the books people read among the former, and the ancient books that comprise them; animals are divided into two categories: (a) some that live alone, (b) some that are domestic (pets) and live with humans and under human control; there are two types of honey: (a) wild/natural honey from the mountains, trees, and so on; and (b) domestic honey.

Sūrat al-Isrāʾ (Banī Isrāʾīl) *(Meccan, 111 verses)*

PRIT: On *Isrāʾ*; the history of Banū Isrāʾīl (its progress and disappearance); specific comments on the opening verses; the joy of *Isrāʾ* in the *ḥadīth*;

takbīr and *taslīm* (magnifying *Allāh* and submission); *al-Isrāʾ wa'l-miʿrāj* (nocturnal journey and ascension) and the most beautiful aspects of creation; praising, thanksgiving, and ancient stories; the effects of *kālām al-nās* (people's word) and *kālām Allāh* (God's word); *al-tasbīḥ* (glorification) and *al-taḥmīd* (praising) in the Qurʾān; the joy of science in Q 17:44 (from a Sufi perspective); the beauty, glory, virtue, and *al-ṣiḥr al-ḥalāl* (permitted charm)[8] in Q 17:45.

NIQA: The discoveries made in central America; *al-miʿrāj* and science; types of journeys (physical and rational journeys [*siyāḥāt jismiyya wa-ʿaqliyya*]); understanding the human body; *al-kathāfa wa'l-laṭāfa*; *zabarjada al-ūlā*, based on Avicenna's *al-Ishārāt*; *al-zabarjada al-thāniya*, based on Oliver Lodge; the ideas of the ancient philosophers; the opinions of Greek thinkers on good and bad; methods of spiritualism; how to prepare for spiritualism; three types of spirits; a comparison of ideas about the spirits in the Qurʾān, al-Ghazālī's work, and that of the Ikhwān al-Ṣafāʾ; the wonders of science.

STH: Doubt, denial, and the origin of Ṭanṭāwī Jawharī's thoughts on matters of the spirits; a note on *nafs*.

SENHL: *Ṣalāt* is the mystery that can lead to the generalising of education and globalisation of peace; Greek, Roman, Alexandrian, and Muslim philosophers as believers in God, rationality, and the soul (*yuʾminūn billāh wa-bi'l-ʿaql wa-bi'l-nafs*); surprisingly, among many Arabic scientific journals, very few address the issue of life after death except for some translations from Frankish philosophers;[9] five types of *ḥijāb*/covering (chastity): physical, behavioural/ethical, rational, scientific, and religious.

Sūrat al-Kahf *(Meccan, 110 verses)*

PRIT: The story of *Aṣḥāb al-kahf* (the people of the cave); the story of Khiḍr, Moses, and Dhū l-Qarnayn; *bayan al-qulūb al-fāḍila*, the joys of beauty, based on Q 18:7; al-Bāṭiniyya; Ismāʿīlīsm and Ḥasan al-Ṣabbāḥ; the history of the Imāmiyya, Zaydiyya, and Kaysāniyya; Dhū l-Qarnayn, Dam and Gog, and Magog; the reason for the revelation of such verses (on Khiḍr, Dhū l-Qarnayn, Gog and Magog, etc.).

NIQA: The short story of the people of the cave; the calculation of solar and lunar years; hot springs; the beauty of animals; the sun and the joy of its beauty; educational methods employed in schools; the people of the cave and the people of Mecca; *khawāriq al-āyāt*; Sufism and European nations; on usury; an overview of the Islamic nations, their judicial system and religious decrees; changes in such decrees depending on time, place, and custom; Yemen and its rulers; Yemen in ancient times; an open letter to the *Jamʿiyyat Nahḍat al-Sayyidāt* ("The Society of Women's Awakening").

STH: A story about al-Naḥḥās; Abī Qīr and Abī Ṣīr; Gog and Magog.

SENHL: How German thinkers know about Sufism and its history while Muslims remain asleep (*al-Muslimūn al-nāʾimūn*).

Sūra Maryam ***(Meccan, 98 verses)***

PRIT: On Zechariah, John, Jesus, Abraham, Moses, Ishmael, and Idrīs (Enoch), their *daʿwa*, Paradise and Hell; regarding the connections to other *sūra*s, starting with mysterious letters; on Mary and Jesus; how to read *sūra Maryam*; on different religions; the science of *tawḥīd*; *ahl al-nār* and *ahl al-janna* (the people of Hell and the people of Paradise).

NIQA: Stories, their truth and falsity; on dreams; the oyster; the wonders of modern science; the mystery of existence; electricity and souls; the ignorance of ancient and modern humans; the music in voices; human hearing; how humans hear different sounds;[10] methods of purification.

STH: On spirits.

SENHL: *Nufūs al-insāniyya* are the quickwitted (*dhakiy*) and the dull (*balīd*); Islam brought humans out of the darkness and into the light.

Sūra Ṭāhā ***(Meccan, 135 verses)***

PRIT: The story of Moses; seeing the fire; Aaron and the Pharaoh; al-Ṣamirī on Islam; the reason for the revelation of the two letters (*Ṭā-hā*) at the beginning of this *sūra*; light upon light in the qurʾanic system (*nūr*-un *ʿalā nūr fī niẓām al-Qurʾān*); the light of the heart; fire and light; a comparison of qurʾanic stories with the natural order; the Qurʾān and [Herbert] Spencer; Zoroastrianism; the Trinity.

NIQA: References to issues related to physics; how paper and silk are made from wood; the joys of science; the joys of natural science; the reproductive system in different creatures; Timaeus; how insects grow; the ant colony; birds useful for farming; the rational sciences; water coming out of stone in the mountains; future scientific methods that should be employed in the religious sciences in Islamic countries; the bliss of humans in this world; the journey to the Moon; the glory of science and the Būyid dynasty; the Samanid empire in Turkistān; Ghaznavids in Afghanistan and India; Ḥamdānids in Aleppo and Mosul; the Marwānids in Andalusia; the Fāṭimids in Egypt; the cooperation of European rulers with their scientists to promote science; al-Azhar and Shaykh al-Marāghī; some [general] recommendations.

STH: The decline of education/instruction in the Islamic world.

SENHL: The people of Earth are both civilised and savage (*ahl al-arḍ qismān: mutamaddinūn wa-mutawaḥḥishūn*); two types of science: the useless/wasted and the useful (*al-ʿilm ʿilmān: ʿilm ḍāʾiʿ wa-ʿilm nāfiʿ*); a sound mind is in a healthy body.

Sūrat al-Anbiyāʾ ***(Meccan, 112 verses)***

PRIT: On the truth of prophecy; the sky and heavens; angels; prophets; Moses, Abraham, Jacob, Lot, David, Solomon, Job, Ishmael, Idrīs, Dhū l-Kifl, Dhū l-Nūn, Zechariah, John; Mary; infidels; Muḥammad; Noah; the effect of these

qurʾanic *sūra*s on the Islamic *umma*; the link between the beginning and end of the *sūra*.

NIQA: A note on Muslim thinkers; the religion of the ancient Egyptians; the religion of the ancient Persians; planets; jewels, pearls, honey, and silk; the privileged position of the Islamic nations.

STH: ——

SENHL: ——

Sūrat al-Ḥajj *(Medinan, 78 verses)*

PRIT: Resurrection; the Ḥajj; Masjid al-Ḥarām; battles and fighting; defeating the oppressors; the Creator of the universe; punishment in this world and Hell; the Final Hour; the appearance of al-Mahdī *al-muntaẓar* (the expected Mahdī); Allāh bestowing victory to earlier prophets and Muḥammad; plants and religions; the life of animals and religions; marriage; Muslims and science (*umma al-Islām wa'l-ʿulūm*).

NIQA: The wonders of science, based on Socrates' thoughts about life after death; conjoined twins; sexual reproduction; the wonders of plants; the qualities of cabbage; human and animal breathing; the modality of plant breathing; earthly and heavenly wonders (*ʿajāʾib al-samāwiyya*); flies; types of animals and other insects; spiders, birds, worms, grasshoppers, flies, insects, etc.

STH: Ṭanṭāwī Jawharī's starting to become interested in science (his suffering from a stomach illness [*maraḍ ṭawīl fī l-miʿda*] and other stories); dialogues between him and other teachers of the ministry of *Maʿārif*.

SENHL: Loving science allows humans to observe God (*yarā Allāh*), while kindness and affection (*al-iḥsān*) lead humans to Paradise (*yadkhul al-janna*); *jihād* in his own time is scientific and does not happen by war, attacks, swords, or guns but with science (*jihād fī hādhih al-ʿuṣūr huwa al-jihād al-ʿilmī, fa-innah lā ḥarb, lā ḍarb wa-lā sayf wa-lā midfaʿ illā bi'l-ʿilm*).[11]

Sūrat al-Muʾminūn *(Meccan, 118 verses)*

PRIT: On the creation of humans, human physionomy, plants, and animals; stories of some prophets; on messengers; the ways of the science of *Tawḥīd*; *sūrat al-Muʾminūn* and the science of wisdom and its propagation in the Muslim world; divine wisdom, light upon light, and praising God.

NIQA: Ikhwān al-Ṣafāʾ ("The Brethren of Purity") and the creation of animals; new ideas on the origins of humans and prehistoric civilisations; the combination of the human body; *ākil wa-maʾkūl* (eating and being eaten); animals, colours, and camouflage; the principles of Darwinism[12] and Europeans' rejection of this school; how to unify Muslims at that time; Aristotle, Alexander the Great, and politics; the ideas of both Muslim and non-Muslim thinkers on different matters regarding human virtues, humanity and so forth; the sense of sight; blood circulation and the heart; veins; on the ignorance of most people.

STH: A story that refers to Edward Brown.
SENHL: How ignorance divides the Muslims while science unites nations.

Sūrat al-Nūr *(Medinan, 64 verses)*

PRIT: On the precepts of defamation, adultery, and the purity of the Mother of the Believers; etiquette; the wonders of the heavens and earth; the states/conditions of disbelievers and believers; the joys of science and the emergence of a qurʾanic secret in Q 24:43; the Qurʾān and the headwaters of the Nile; ancient religions; the joy of science in Q 24:35; the Qurʾān and the material world; the story of Prophet Solomon and the Hoopoe; the influence of the Qurʾān on social circumstances; Muḥammad was the greatest reformer and peacemaker; the Qurʾān and particular guidance; the meaning of *jihād* (*maʿnā al-jihād*); the beauty and light in *sūrat al-Nūr*.

NIQA: On zoology; lamps in mosques; ancient and modern light (fire); *riḥla al-shitāʾ wa'l-ṣayf* (journey of winter and summer) and emigration; exploration of the North Pole; outward and inner light; the types of animals and plants on different continents; the lion, fox, wolf, and camel; the connection between animals and humans, and the Earth and the Sun; the future of philosophical thought amongst the Muslims; Ṭanṭāwī Jawharī's book *Niẓām al-ʿĀlam wa'l-Umam*.

STH: The story of the pious man and the mouse (based on *Kalīla wa-Dimna*).
SENHL: Islam is a religion of science and practice.

Sūrat al-Furqān *(Meccan, 77 verses)*

PRIT: Proofs of prophethood; the penalty for lying; cosmological wonders; ethics; the dereliction of Muslims in the Qurʾān; Q 25:61 and *taqwīm,* and the calculation of time; rhetoric of the Qurʾān.

NIQA: Islam spreading in Africa; rats/mice; dengue fever (based on Dr Sāmī bik Kamāl); political figures and urban systems; rulers and *jawhariyyūn*; political weakness in the contemporary *umma*; animals in oceans; coral islands; the saltiness of sea water; a secret from the secrets of the order of life (*sirr min asrār niẓām al-ḥayāt*); the basis of life; the body and soul; dance (*al-raqṣ*), its type and features; the joys of the skies; celestial objects; well-known stars; what is beyond the galaxy and the enormity of the universe; light and heat.

STH: ——

SENHL: The Qurʾān resembles the sea, which contains water, fish, pearls, corals, and amazing creatures, and from which our ancestors took the *science* of jurisprudence (*qad akhadha minh aslāfunā ʿilm al-fiqh*), which could be the sea-fish; many people are still ignorant as to whether the Qurʾān stated "indeed, man is unjust and ungrateful" (Q 14:34); the dance of ancient Egyptians symbolised the motions of heavenly objects.

Sūrat al-Shuʿarā *(Meccan, 227 verses)*

PRIT: On Muḥammad; some divine proofs of natural wonders; the story of Moses and Pharaoh; the story of Abraham; the story of Noah; Hūd, ʿĀd, Thamūd, and Ṣāliḥ; the people of Lot and Shuʿayb; description of the Qurʾān; the wonders of Islam in medicine (i.e. the toothbrush); poetry in Islam.

NIQA: Breathing of plants; flowers; how plants feel and move; the frankincense tree; *al-ḥurūf al-hijāʾiyya* and flowers; magic among the pharaohs; the sanctification of magic books by the ancient Egyptians; the beauty of science and the joy of wisdom; some magical/scientific actions (i.e. putting something into one's eye and removing it from the mouth; changing the colour of water without using dye; making a rainbow); Einstein and his theory of time and space[13]; a note for the Muslims; inspirational and accurate dreams; manuscripts of hieroglyphs; the connection between other (internal) diseases and diseases of the mouth (based on Dr Yūsuf Zakī); some notes on prevention before treatment; ancient Egypt; the prohibition on eating pork; on healing illness; the joys of science and medicine; treatment with sunlight; the Dead Sea or the Lake/Sea of Lot; lessons and history; poets; poetry and history; [how to] educate with poetry.

STH: On the meanings of two groups of mysterious letters: *Tā-sīn-mīm* and *Kāf-Hā-Yā-ʿAyn-Ṣād*; people's claims of prophethood, Isḥāq al-Akhras, Fāris b. Yaḥyā al-Sābāṭī, and other stories from the Arab *shuyūkh*; Sodom and Gomorrah.

SENHL: How [learning] these sciences should be compulsory, i.e. a collective duty; for kidney diseases one should eat parsley, for the nerves lettuce and spinach; to gain bravery (*ḥuṣūl al-shajāʿa*) one should eat oranges and lemons.[14]

Sūrat al-Naml *(Meccan, 93 verses)*

PRIT: On faith and the story of Moses; the story of Solomon; Thamūd and the people of Lot; evidence to understand God and the Last Day; a secret from the secrets of Muḥammad's prophecy, based on *Ṭā-Sīn*; one more secret from *Ṭā-Sīn*; a historical lesson based on Q 27:34; some notes on "the gardens of joyful beauty" (Q 27:60).

NIQA: On the secrets of *Ṭā-Sīn*; birds and animals as earlier [permanent] teachers of humans; the wonders of the ant; comparing human and ant systems; the ant's precision in its work; ants' lives;[15] *al-jumhūriyyāt fī l-ḥayawān* (based on John Lubbock); a note on ants from the book of ʿAlī Pasha Mubārak; ants are stronger than humans; ants have various roles (e.g. farmer); the wonders of the ant's eyes; the wireless telegraph; insects and ants; the Hoopoe bird; birds (i.e. poultry); human order in regions and cities (which also refers to al-Fārābi's Utopia); Plato, humans, and politics; Islamic education; the mystery of Arabs' advancement but their states' collapse; Frankish colonisation of Islamic societies (and is it viable?); the happiness and excellence of Muslims in the future and the permanence of their countries; Balqis' throne;

a story of Confucius; roots; insects; flirtation between birds and animals; the leaves of trees.

STH: A story about an ant.

SENHL: As Sir John Lubbock said, the acts of ants are similar to those of humans.

Sūrat al-Qaṣaṣ[16] *(Meccan, 88 verses)*

PRIT: Education and ethics in qurʾanic stories; the story of Moses and Qārūn (Korah); Moses' mother; a comparison between understanding the Prophet's Companions and our understanding of the Qurʾān; Q 28:88 and the account of Gustave Le Bon.

NIQA: The state's condition as portrayed in the story of Pharaoh and Moses; Socrates' opinion on politics; Bolshevism/Bolsheviks[?] in Egypt; rhetoric and science; Arabic words and modern science; the Sun as the origin of all energy on Earth; a note on the state of *musrifīn* who commit excesses.

STH: Ṭanṭāwī Jawharī's idea of education among the Muslims.

SENHL: Physicians recommend that humans eat beans, fruits, and vegetables, and avoid meat, eggs, and dairy products; those who pay [a part of] their property to [the poor] in their village/region give them a benefit, and the thinkers who impart knowledge to their people resemble ill people who strengthen their bodies against injury/diseases.

Sūrat al-ʿAnkabūt *(Meccan, 69 verses)*

PRIT: Instructions on patience, *jihād*, and obeying parents; fighting in the way of Allāh; the story of the prophets; the debate of *kuffār* (disbelievers) and the People of the Book, and the proofs of prophethood; the story of Noah and the Ark; Abraham; the story of Lot; Shuʿayb; ʿĀd and Thamūd, whose prophets were Hūd and Ṣāliḥ respectively; the story of Moses; prophetic traditions (*aḥādīth*) regarding the virtues of prayer.

NIQA: On garments; fasting as a treatment; *jihād bi'l-gharīza* (natural disposition); *jihād bi'l-ʿaql* (intellect); *jihād bi'l-waḥy* (revelation/afflatus); how *jihād lil-taḥrīr* resulted in Europe after the inactivity of Muslims; Islamic and European civilisations (*al-ḥaḍāra al-Islāmiyya wa'l-ḥaḍāra al-urūbiyya*); the Atlantis continent and another in the Pacific; Ararat Mountain; the order of the heavens; the order/system of humans, animals, plants, and minerals; on mines; [chemical] elements and contemporary scientists; the systems of natural and chemical elements; rhodium and gold; humans and angels; explosive powder; the beauty of this world; the qualities of numbers (based on ʿAlī Pasha Mubārak); the wonders of the spider; regarding a note of Count Henri de Castro (here Ṭanṭāwī Jawharī refers to Bibliander and Don Martino Alfonso de Viualdo, who, according to him, did not respect the prophet of Islam and his Book)[17]; the notes of Thomas Carlyle (here Ṭanṭāwī Jawharī acts as a defender of Islam).

STH: ——

SENHL: Both physics and mathematics are only found in the heavens and on earth; the most important foundation of *jihād* is *ṣalāt* (*ahamm arkān al-jihād wa-huwa al-ṣalāt*); *jihād* is divided into three parts: *jihād* by (a) instinct (*al-gharīza*), which is the weakest type of *jihād*, (b) reason (*al-ʿaql*), and (c) revelation (*al-waḥy*); on two types of journey: the physical (*jismī*), by the ignorant and learners, and the intellectual (*ʿaqlī*) by thinkers and wise men; the purpose of *ṣalāt* in Islam is science and knowledge, through which wisdom and understanding can be improved; *ṣalāt* ends sinful deeds and doing prohibited things.

Sūrat al-Rūm[18] *(Meccan, 60 verses)*

PRIT: The interpretation of the *basmala*; some mysteries of *Alif-Lām-Mīm*; the proofs of prophethood; wonders referring to Oneness; reminding people of the favours of God; Timaeus and Socrates, and *ṣalāt* in the religion of Islam; people as the successors of God throughout the earth.

NIQA: Ideas of justice; animals; injuries and justice; the science of the spirits (*ʿilm al-arwāḥ*); the cabbage butterfly (*abī daqīq*); the differences between the colours; the delights of science seen in the cabbage butterfly insect; flower mantises; the tricks of animals; decoding a criminal's personality; the diversity of languages; the Persian language; Latin; the wisdom of languages, and the resemblances and connections between different ones; wintering (may be hibernation[?]) (of) animals and its possibilities for humans[19]; sleep and its timing; the period of sleep; the bed; exercise and its advantages; swimming and rowing; the origin of the universe and its Creator; mathematics; logic; facets and manifestations of creatures; infectious diseases; diphtheria; typhoid fever; measles.

STH: A new scientific discovery: coal liquefaction (based on the work of Dr Friedrich Bergius).

SENHL: The human as a wondrous mechanical machine; some animals have their own weapons/powers to protect themselves (e.g. by changing colour) while others do not; there are two types of people: those who remain as animals, such as murderers, known as *manhaj al-khasīs*, and those who improve themselves through ethics and morality, who are called *manhaj al-sharīf*; *ṣalāt*, as well as being a religious duty, through bowing (*rukūʿ*), prostrating (*sujūd*), and submitting (*taslīm*), is a good exercise that makes the body active.[20]

Sūra Luqmān *(Meccan, 34 verses)*

PRIT: Commentary on the *basmala*; *Alif-Lām-Mīm*; Luqmān; synopsis of *sūra Luqmān*; the wonders of the qurʾanic *sūra*s names.

NIQA: The knowledge [level] of the ancient Egyptians; Francis Bacon and the classification of science; Chinese philosophy (based on Confucius); Indian

philosophy (discussed in *sūra Āl-ʿImrān*); Greek philosophy; the dialogue between Socrates and his disciple Simmias of Thebes; Plato; some events in Palestine; industrial health; the marvels of the seas/oceans; public health centres in Paris; Arabic philosophy; the definition of philosophy; maths, logic; natural science.

STH: Two dogs and the corpse of a donkey.

SENHL: Types of intellectual science: maths, logic, natural science and physics, theology (*ilahiyyāt*), and metaphysics; music, along with the science of numbers, geometry, and astronomy, is one of the mathematical sciences; practical sciences include ethics; the science of household management;[21] civil politics.

Sūrat al-Sajda *(Meccan, 30 verses)*

PRIT: On the interpretation of the *basmala*; prophetic miracles.

NIQA: Minerals; palm trees; humans and the respiratory system; the digestive system; the skin; the nervous system; the tongue; the sense of smell and the nose; teeth; the Arabic language; humans and *Lawḥ al-Maḥfūẓ*; the human body and the solar system; the sky towers and the human body; the order and system of the nations.

STH: ——

SENHL: As the Prophet said, "People are like gold and silver"; humans are the best (most advanced) animal.

Sūrat al-Aḥzāb *(Medinan, 73 verses)*

PRIT: The interpretation of the *basmala*; the battle of Aḥzāb; the *aḥkām* of the Prophet's polygamy; Muḥammad's message for his wives; why Muḥammad had nine wives but only four is the maximum permitted in the *sharīʿa*; polygamy amongst the Muslims; Islam and polygamy; the seal of the prophets; the sciences of *tafsīr* and of *fiqh*; religious sciences; tolerance in religion; wine; equality and early Islam; the clarity and simplicity of *ṣalāt* and purification; the call to prayer.

NIQA: The present Islamic *umma*; Mūsā b. Maymūn (i.e. Maimonides, and that great Rabbi's treatise); the propagation of Islam and the Age of Conquests; greetings; wind directions; prophecy and its effects in Europe; miracles.

STH: Trading of blacks (*al-zunūj*; sing. *zanj*) in London; the confessions of a spy; an international conference on religion in Geneva in 1928 (based on *al-Ahrām*).

SENHL: Qurʾanic wisdom appears in Europe while Muslims in the East are asleep.

Sūra Sabaʾ *(Meccan, 54 verses)*

PRIT: The interpretation of the *basmala*; infidels; proof of unity; proof of God's science (*ithbāt ʿilm Allāh*); proof of the Day of Resurrection; accounts of

the Qurʾān by thinkers and the ignorant; two great nations (the people of Sabaʾ, and Āl Dāwūd and Sulaymān); independence and freedom of judgement and thought/views; the beauty of science in accordance with "He knows that which goes down into the earth and that which comes out of it" Q 34:2; Jinn; qurʾanic wonders in the twentieth century.

NIQA: The solar system; humans, bees, and so on; the Earth and a description of it; ancestors and the shape of the Earth; earthquakes; on volcanoes; coal; oil; the movements of the Earth's crust; the coast of the Atlantic Ocean; mountains; death and life by one's own will (*al-mawt wa'l-ḥayāt bi'l-irāda*); Sabaʾ and the flood of ʿArim, scientific wonders and modern discoveries; the city of Maʾrib; the dam of ʿArim; condemning imitation; sorcery or science?; social life; plants in the water; anaemia and its treatment through fasting (*faqr al-dam wa-muʿālajatih bi'l-ṣawm*); humans and the colonial movement (*al-insān wa-nahḍa al-istiʿmār*)

STH: Surgery without anaesthetic.

SENHL: Willpower leads to the emergence of miraculous works; both science and practice (work and effort) are hard for people, while ignorance and the neglect of everyday work are both easy.

Sūra Fāṭir *(Meccan, 45 verses)*

PRIT: On the interpretation of the *basmala*; describing the power of God; reminding people of divine favours; the Prophet and deniers; types of believers; disbelievers and believers; reward and punishment; "And you see the ships cleaving" (Q 35:12).

NIQA: What God reveals to His people; salt and its advantages; hydrogen; aluminium; physical and spiritual unification; foods and human states; the earth's poles and *ʿilm al-falak* (astronomy); the origin of energy and light; finding microscopic animals such as microbes; the things God gave to humans to allow discoveries to be made; the wealth of the North Pole, Antarctica, diamonds, natural gas, and so forth; the digestive system; portal veins; kidneys; sensory nerves; the neurological structure of the body; communication among humans; wonders of the sea; various trees; some verses and political thoughts on Muslim nations.

STH: Stories from America.

SENHL: The verses dealing with science are Q 35:1–3, 9–13, 27–28, 41, 44–45; those on morality (*akhlāq*) are Q 35:5–6, 15–18, 29–30; the signs of God are: (a) those that are heard, such as the Scriptures; and (b) the visible, such as seeing the universe; religious reform; love of science should not be a means to collect wealth and property (*wasīla li-jamʿ al-māl*).

Sūra Yā-sīn *(Meccan, 83 verses)*

PRIT: On the interpretation of the *basmala*; scientific wonders in chemistry, the wonders of the universe, and the verses of this *sūra*; verses dealing with

ethics that are not well-known; scientific wonders revealed by reading this *sūra*; the light of science at the end of this *sūra*.

NIQA: On astrology; ships/arks; issues regarding journeys; *ʿulūm al-āfāq* in the future among Muslims; slow combustion and iron; salt in food; the age of the Earth; the Sun and its movement; heat and light; exercise and music; arithmetic; the Moon and lunar matters; lunar months; trees and their leaves; animals and their intelligence; the age of creatures (*ʿumr al-makhlūqāt*); the heat of the Sun (*ḥarāra al-shams*).

STH: Old/ancient civilisations in the modern world (*al-ḥaḍāra al-qadīma fī l-ʿālam al-jadīd*); a new planet; Napoleon Bonaparte's ideas about medicine.

SENHL: There are 24 verses dealing with science, mainly agriculture, plants, gardens, *ʿilm al-nafs*, *ʿilm al-tashrīḥ*, etc.

Sūrat al-Ṣaffāt *(Meccan, 182 verses)*

PRIT: On the interpretation of the *basmala*; the description of *tawḥīd* and God's distinguished creativity when [creating the] heavens and humans; human ignorance and the issue of resurrection; the inhabitants of Paradise (*ahl al-janna*); Noah, Abraham, Ishmael, Isaac, Moses, Aaron, Elijah, Lot, Jonah; rejecting the lie that angels are the daughters of God; qurʾanic secrets dealing with the sciences of the spirits and *Sufism* (*ʿilm al-arwāḥ wa-ʿilm al-taṣawwuf*); the favours found in Paradise; *aṣḥāḥ*; the rewards of those who do good.

NIQA: The challenge of ancient thinkers about meteors and its reception in the modern world; things that are beyond the centre of the universe; the cotton field; the truth of the sky; the development of accounts regarding the ether (from Newton to Einstein); the difference/diversity of people's understanding and love; the reasons people do not emphasise knowing God as much as they should; fireballs.

STH: The size of the universe and Harlow Shapley; on white toxins.

SENHL: *Basmala* at the beginning of the *sūra*s recalls human and divine mercies; some people only recite the Qurʾān while other are attracted by qurʾanic rhetoric and grammar and restrict themselves to its language. They resemble those who only enjoy the light of the stars but do not consider what is beyond those heavenly bodies; two types of adornments: natural adornments such as trees, rivers, gardens, etc., and artificial ones like the beautiful products made by humans from cloth, and mosques, temples, etc.

Sūra Ṣād *(Meccan, 88 verses)*

PRIT: On the interpretation of the *basmala*; the purpose of the *sūra*; the story of Solomon; the story of Job; description of Paradise and Hell; the story of Adam; *al-Sabq wa'l-Ramī*; the life of the Prophet (and prophecy).

NIQA: The human body; beyond the materials; on [mineral] elements and plants; how to educate the judges, thinkers, and rulers of Islamic nations;

scientists' methods for treating diseases[22]; some recommendations of physicians (regarding the disadvantages of overeating, the disadvantages of processed sugar and the benefits of natural sugar, etc.); vitamins.

STH: The justice of Muḥammad b. ʿImrān al-Ṭalḥī; the justice of [ʿĀqiba b.] Yazīd al-Qāḍī; the justice of Sharīk b. ʿAbdallāh, a judge from Kūfa, and others; a man and a woman on a desert island (the island of Charles Darwin in the Galapagos).

SENHL: Nations' policies follow the beliefs of their people.

Sūrat al-Zumar *(Meccan, 75 verses)*

PRIT: The interpretation of the *basmala*; *tawḥīd*; arguments on the wonders of the heavens, the creation of livestock, humans, plants, groundwater flow, rain, and the inhabitants of Heaven and Hell; seeking forgiveness and glorification; entering Paradise; the torment of oppressors in this world and the Hereafter; sleep and death; the end of *sūra Ṣād* and the beginning of *sūrat al-Zumar*; detecting facts in qurʾanic mysteries.

NIQA: Water for drinking; mineral water; soda water; medicine; the disadvantages of giving sweets to children; the economy and accumulation of wealth; clouds; divine justice in the world of plants and animals in terms of nutrition, and marine and terrestrial plants; the atmosphere; how science resembles a radium mine; the qualities of radium; the reform of education; heavenly wonders; animal instincts; medical advances; diseases of dogs; the benefits of artichokes.

STH: Fifty reasons and wisdom-based ideas for the creation of humans (*fī khalq al-insān khamsīn ḥikma*); literary production (e.g. book production) in Germany; education in European universities, based on the idea of the rector of Lausanne University.

SENHL: Awareness (*ʿilm*) and ignorance (*jahl*) are akin to life and death respectively.[23]

Sūra Ghāfir *(Meccan, 85 verses)*

PRIT: The interpretation of the *basmala*; the connections between *ʿālam al-malāʾika* (the world of angels) and *ʿālam al-insān* (the world of human); the last nations; Moses, Banū Isrāʾīl, and a believer from Pharaoh's house; secrets hidden in this *sūra*; praise and glorification; *Masīḥ al-dajjāl*.

NIQA: The result of disbelief; pulmonary respiration in humans and animals; lizards; chameleons; snakes; the earthworm and its importance; the history of ancient Egypt.

STH: The trading of locusts in Belgium.

SENHL: ——

Sūra Fuṣṣilat *(Meccan, 54 verses)*

PRIT: On the interpretation of the *basmala*; *tawḥīd*; the destruction of some nations that disbelieved in God, such as ʿĀd and Thamūd; earthly and

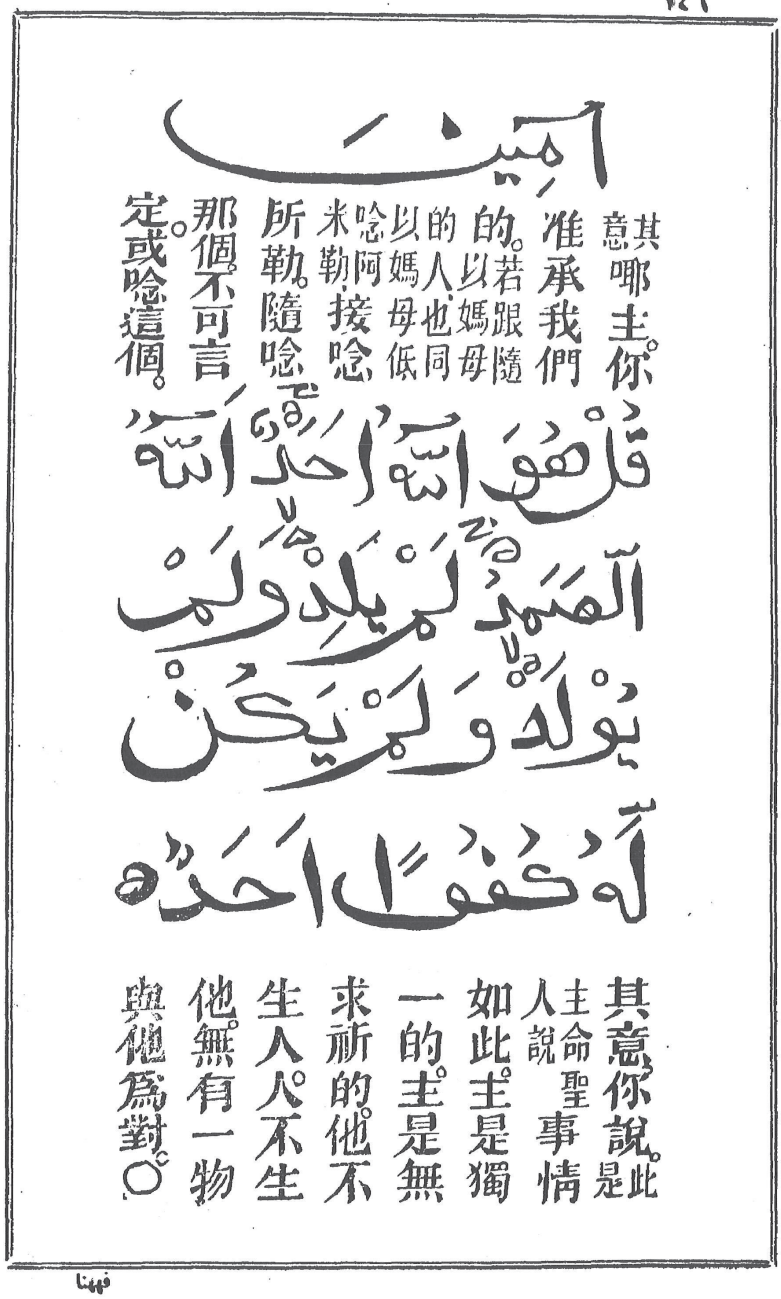


Figure 7.2 Ṭanṭāwī Jawharī's emphasis on the importance of the Arabic language; he presents the Chinese version of Q 112.

Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qur'ān al-Karīm*, 26 vols (Cairo, 1923–1935)

heavenly materials/bodies in the Qurʾān; the ascension of the soul (*nafs*) towards the supreme (higher) world; Shaykh Dabbāgh's explanation of Paradise, Hell, and *tawḥīd*.

NIQA: The beginning of creation; the beginning of life; the development of life on Earth; the creation of humans; the features of the globe; the depth of the seas and oceans; the early period of the Earth; the bronze age; geology; petroleum; the preservation of the Arabic language; Latin and Arabic; ignorant ancient Arabs and Hammurabi; the differences between the first and second ignorant [era] languages; the Umayyad dynasty and the Arabic language; South America and nature; fingers and the hand; fingerprints; accounts of ethical philosophers (*akhlāq*); Confucianism; accounts of scholars after Aristotle; European thoughts on scientific and practical wisdoms; analysis of ethics and psychological matters; the theory/doctrine of moral instinct and experience; knowledge for humans occurs by employing the five senses and reason; the emotions and feelings of humans; the beauty of science in both scientific and practical wisdom; the joining of animals and plants; the science of the spirit (Tawfīq Dos Pasha addresses his father's spirit); the digestive system; the ingredients in food.

STH: The existence of God Almighty; reconciling science and religion, based on Sir James Jeans; Ṭanṭāwī Jawharī's specific discussion with his God; between New York and the South Pole.

SENHL: O Muslims! This is your religion commanding you to examine all science; today is the time for the emergence of truths.

Sūrat al-Shūrā *(Meccan, 53 verses)*

PRIT: Angels, *ʿālam al-mādda* (the material world): inanimate objects, animals, and humans; the human and his religious and worldly affairs; inspiration and human knowledge; the revelation of the Qurʾān to Muḥammad; human differences in *imān* (belief) and *kufr* (disbelief); the Last Day; God's messages to people; the joys of science and means to wisdom in *sūrat al-Shūrā*; the significant effects of this *sūra*.

NIQA: Sexual reproduction and the differences between males and females in both humans and animals; reasons for the creation of insects; the spirit (from the viewpoint of the ancient Egyptians); music, and classical and modern thinkers; general order in the world; the benefits of scientific music and disadvantages of practical music (*manāfiʿ al-mūsīqī al-ʿilmiyya wa-ḍarar al-mūsīqī al-ʿamaliyya*); *Ḥā-Mīm-ʿAyn-Sīn-Qāf* and the Cave of Plato (i.e. the allegory of the cave); the history of trees; the influence of heat on atmospheric pressure; the breeze of the sea and desert; seasonal winds; the globe; water and the sky; trading boats; the sky and its wonders; old and new roads; the number of Muslims in Islamic countries; the path to unification; the means by which humans are created; a comparison between ʿUmar's life and the Socratic *Republic*; public (general) justice in heaven and on Earth; the justice of ʿUmar; parliamentary life in Afghanistan.

STH: Religion and the constitution; France after England.
SENHL: Ancient Egyptians saw the human in this way: a non-permanent body, a spiritual body, the heart, marriage, the soul (*nafs*), going astray, the spirit (*rūḥ*), divine appearance, etc.

Sūrat al-Zukhruf *(Meccan, 89 verses)*

PRIT: Commentary on the *basmala*; al-Mahdī; *aḥādīth al-marwiyya*, on al-Mahdī; Sufi accounts of al-Mahdī; Ibn Khaldūn and al-Mahdī; general ideas about Jesus and al-Mahdī; the Arabic language of the Qurʾān; uncovering some secrets of God's word; Paradise and Hell; Islamic nations and the names of the qurʾanic *sūra*s from *Ghāfir* (the Forgiver, Q 40) to *Ḥujurāt* (the Rooms, Q 49).
NIQA: Examining accounts of Islamic and Greek thinkers; the Arab nation; the medicine of Muslims in general and Arabs in particular; Mawlānā Muḥammad ʿAlī and Palestine; aerial roots; the sleepiness of leaves (!); the diversity of plants; plants in different seasons; the wonders of creatures; the Islamic caliphate.
STH: A dialogue between Ṭanṭāwī Jawharī and Laṭīf Pasha Salīm on the progress of Arabs in the near future; the Jewish homeland in Palestine and the Arab states.
SENHL: ——

Sūrat al-Dukhān *(Meccan, 59 verses)*

PRIT: Commentary on the *basmala*; the revelation of the Qurʾān and the issue of *tawḥīd*; warning to liars/deniers about the torment (*ʿadhāb*) in this world and the Hereafter; the followers of Pharaoh and their destruction; Banū Isrāʾīl; resurrection from a rational perspective; description of the torments of Hell; the pleasures of Paradise; spiritual and physical sins; qurʾanic miracles in *sūrat al-Dukhān*.
NIQA: Air and the killer smog[24]; smoke (*al-dukhān*) and haze (*ḍabāb*) and their influence; modern warfare and its new weapons; smog in England and Belgium; Socrates and Aristotle.
STH: From Germany to Africa in 24 hours.
SENHL: Both *nubuwwa* and *wilāya* as divine secrets (based on *kitāb al-ibrīz*).

Sūrat al-Jāthiya *(Meccan, 37 verses)*

PRIT: Commentary on the *basmala*; the stories of Banū Isrāʾīl; the joy of *ʿirfān* (gnosis) on coral islands; the light of prophecy and the joy of science; *taʿlīm* (instruction) *al-anbiyāʾ*; the joy of science as seen in Q 45:36.
NIQA: Human imprisonment on earth; Muslim deficiencies in science; the differences between night and day; the seasons; rains; corals and some fishes; the actions of spirits; the nutritional system; education; modern education; the origin of rivers; springs and wells; rain, the cold, and snow.

STH: ——
SENHL: Allāh as the instructor of the universe.

Sūrat al-Aḥqāf *(Meccan, 35 verses)*

PRIT: Commentary on the *basmala*; *Tawḥīd*; heresy with prophecy; confirming prophecy; gracious treatment of parents; ʿĀd, Thamūd, and Lot; patience; the Jinn.
NIQA: Comparing the ideas of Muslim and European thinkers about the Jinn and their features; the excessive expenditure prevalent in the country; the wealth of the caliphs' wives, maids, and personal guards; the Ṭulunids in Egypt; the Fāṭimids; the Ayyūbids; the retribution of Muslim rulers; al-Muntaṣir, following al-Mutawakkil and other rulers; the order of the nations; acts/duties of the state and administration during the Abbasid Caliphate; agriculture during the Abbasid Caliphate; literary arts during the Abbasid Caliphate; the decline of the Abbasids.
STH: The wealth of the four rightly-guided caliphs; the dissolution of the Umayyad dynasty; the Abbasid dynasty and its dissolution.
SENHL: Surprisingly, Egyptians followed the path of early Islamic dynasties in dissipation of wealth and excessive expenditure, particularly after Muḥammad ʿAlī Pasha.[25]

Sūra Muḥammad *(Medinan, 38 verses)*

PRIT: Commentary on the *basmala*; is death justice?; a description of disbelievers and believers; retribution; a threat for the hypocrites; the rivers of Paradise: Sayḥān, Jayḥān, Euphrates, and the Nile.
NIQA: On some insects; the mosquito; the flea; *ʿaql*; angels and spirits of the earth; humans and naturalists, materialists, sophists, Anaxagoras, and theists; the sense of touch; humans and the Neichari sect; Socrates and Plato; Aristotle's accounts; existence or non-existence of the origin of the universe; the followers of *al-Iskandariyyin* (a modern Platonic doctrine!); substance and sound in air; light; *al-kabīsa wa'l-basīṭa* (leap years) and solar and lunar eclipses.
STH: Socrates' beliefs; Kant's *Kritik der reinen Vernunft.*
SENHL: Praising God for the blessing of science, wisdom, and understanding; people know about the sky and planets based on knowledge of the Earth and its elements.

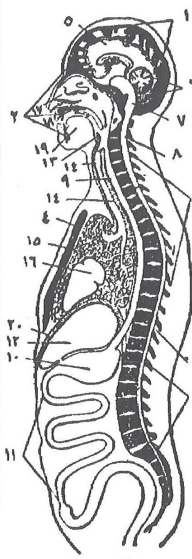
Sūrat al-Fatḥ *(Medinan, 29 verses)*

PRIT: Commentary on the *basmala*; victory; soldiers of God on Earth; the obedience of *kahrabāʾ* (electricity) and light to their God; harshness towards disbelievers.
NIQA: Individual and military *jihād*; prophetic victory and the modern age; control of the West over the East; the purpose of education/training; a look at

الابصار والسمع والتكلم والذوق ومنافذ جهاز الهضم والتنفس (انظر شكل ٩)

والعنق فيه الحنجرة (وهى عضو الصوت) وفتحة القصبة الهوائية وهذه عبارة عن أنبوبة توصل الهواء من البلعوم الى الرئتين وفتحة المرىء وهو عبارة عن أنبوبة خلف القصبة الهوائية توصل الغذاء من البلعوم الى المعدة وفيه أيضا العروق التى يصعد فيها الدم الى الرأس وفيه الجزء العلوىّ من العمود الفقرى المحتوى على جزء من النخاع

والجذع مركب من جزأين علوىّ وسفلىّ فالعلوىّ هو الصدر وهو تجويف مخروطىّ الشكل محدود من الخلف بالعمود الفقرىّ . ومن الجانبين والأمام بالأضلاع وعظام القص والصدر يحتوى فى الجهة اليسرى المقدمة على القلب والشرايين الكبيرة وعلى الرئتين . وينتهى الصدر من الأسفل بالحجاب الحاجز الفاصل بين جزأى الجذع . ويخترق هذا الحجاب شريان عظيم (الأورطى) والمرىء والوريد الأجوف السفلى والقناة اللينفاوية والسفلى هو البطن المكوّن من الأمام والجانبين من عضلات ومن الخلف منها ومن العمود الفقرى وينتهى من أعلى بالحجاب الحاجز ومن أسفل بعظام الحوض . ويحتوى على الأعضاء الآتية وهى (الكبد والمعدة والأمعاء الدقيقة والغليظة والبنكرياس والطحال والكليتان والمثانة)



(شكل ٩)
قطاع عمودى لجسم الانسان وفيه مجاورة الأعضاء بعضها لبعض

فالكبد يشغل الجهة اليمنى العليا من البطن تحت الحجاب الحاجز مباشرة . والمعدة معظمها فى الجهة اليسرى العليا . والأمعاء الدقيقة تملأ الفراغ أمام المعدة وأسفلها وطولها نحو ستة أمتار . والغليظة تبتدئ من أسفل الجانب الأيمن للبطن ثم تصعد نحو الكبد ثم تتجه الى الشمال مارّة أسفل المعدة ثم الى الأسفل مخترقة الحوض وتنتهى بالمستقيم وطولها نحو متر وثمانية سنتيمترات . والبنكرياس محله خلف المعدة . والطحال محله فى الجانب الأيسر تحت الحجاب الحاجز . والكليتان مجاورتان للعمود الفقرى والمينى تحت الكبد واليسرى تحت الطحال . والمثانة موجودة فى أسفل البطن أمام المستقيم . والأطراف أربعة الذراعان والطرفان السفليان ولا حاجة لشرح أجزائهما وأجهزة الجسم هى

(١) جهاز الحركة ويدخل تحته العظام والمفاصل والعضلات الارادية وأوتارها
(٢) الجهاز الدورى وأعضاؤه ثلاثة (القلب والأوعية الكبيرة والأوعية الشعرية)
(٣) الجهاز التنفسى وأعضاؤه أربعة (الحنجرة والقصبة والشعب والرئتان)
(٤) الجهاز الهضمى وأعضاؤه تسعة (الفم والأسنان وغدد اللعاب والبلعوم والمرىء والمعدة والبنكرياس والكبد والامعاء

(١) عظام الجمجمة (٢) عظام الوجه مع الأسنان (٣) العمود الفقرى (فقرات العنق والظهر والبطن) (٤) القص (عظام الصدر) (٥) قطاع المخ (٦) قطاع المخيخ (٧) اتصال الدماغ بالجزء العلوى للنخاع الشوكى (٨) النخاع الشوكى (٩) المرىء (١٠) المعدة (١١) الأمعاء (١٢) الكبد (١٣) لسان المزمار (١٤) القصبة الهوائية والحنجرة (١٥) الرئتين (١٦) القلب (١٧) الحفرة الأنفية (١٨) تجويف الفم (١٩) اللسان (٢٠) الحجاب الحاجز

Figure 7.3 Human anatomy.
Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qur'ān al-Karīm*, 26 vols (Cairo, 1923–1935)

Islamic nations in the future; Aligarh [Muslim] University and its important role/work in India; the human body (cells, immune system, etc.); soldiers in heaven and on earth; a spiritual army; soldiers of human and animal intellect in comparison to the soldiers of heavenly light; war against oppressors/tyrants, and Sayyid Jamāl al-Dīn (mainly based on Shakīb Arsalān); Muslims "are harsh towards disbelievers" these days; the propagation of Islam in Europe and America in our time; the Arabic language; Islamic belief (*ʿaqīda*); the enmity of Europe with Islam; the emergence of Islam, its development and decline; European politicians; chaos in the Islamic world; progressive Muslims; prayer (*ṣalāt*) from the perspective of Mahatma Gandhi; Iraq and the League of Nations; Islamic conquests in our time.

STH: Pledge of Good Pleasure (*Bayʿat al-Riḍwān wa-hiya Bayʿat al-Shajara*); Mahatma Gandhi; "For you is your religion, and for me is my religion" by Ḥājj Nāṣir al-Dīn and Ḥājj Sulaymān b. Ibrāhīm, published in the magazine *Jamʿiyyat al-Shubbān al-Muslimīn*.

SENHL: There are two types of medicine: (a) the science of the health of the body and its protection, etc., and (b) treatment; how the body of a nation resembles that of a human.

Sūrat al-Ḥujurāt *(Medinan, 18 verses)*

PRIT: Commentary on the *basmala*; believers and the Prophet; interaction between believers (standard behaviour); ethics during the Prophet's lifetime; the caliphate and the Abbasids; al-Mahdī.

NIQA: The Abbasids and Alids; al-Manṣūr and the Abbasids; the outcome of the Umayyads' and Abbasids' actions for Islam; plants; general philosophy; the political system of Egypt; Islamic rulers; the tyranny of soldiers; the joy of beauty in the history of Islam; the animal kingdom; the manifestation of humans among animals; Confucius, based on Will Durant; Plato and his *Republic*; intellectual trends; some useful suggestions; the perils of the tongue and the virtue of silence; virtues, depravity, bliss, and deeds of the heart; the pattern of excellence; treatment for depravity; anger; the earth and its potential; on the book *Ayn al-Insān?*.

STH: The account of John Ruskin; God's message to individuals and to the nations; the agreement between Imām al-Yemen and al-Malik Ibn Saʿūd.

SENHL: The sunrise of Islam after the dimness of its night; the human heart resembles the earth's surface, which is outspread.

Sūra Qāf *(Meccan, 45 verses)*

PRIT: Proof of prophethood and resurrection; beholding the heavens and earth; a story of former nations; on death; that angels observe humans' deeds; a commentary on the *basmala*; *Qāf*; a glorification of creatures (*tasbīḥ al-makhlūqāt*); lying; gossip (and the penance for such); defamation (*namīma*) and other ethical vices; steadiness and determination; patience;

chastity (*ʿiffa*); self-control and other ethical virtues; the inimitability of the Qurʾān in terms of its eloquence.

NIQA: The wonders of the heavens; the wonders of the earth and plants; the eye; the beauty of the eye and its delight; the prism, light, and seven colours; the effect of light on plants, animals and inanimate objects; the wonders of the planets; blackness/darkening of the iris; the atomic nucleus; tree-rings; a comparison between Monocots and Dicots; sarcasm and mocking.

STH: A garden with 21 types of trees.

SENHL: Patience in ethics resembles iron in industry and salt in food.

Sūrat al-Dhāriyāt[26] *(Meccan, 60 verses)*

PRIT: A commentary on the *basmala*; on resurrection.

NIQA: Our bodies' connection to the heavens and earth; roots and quadrature; numbers, celestial body calculation; protecting and cleaning the teeth and other related issues; periodontal (gum) disease; ancient and modern psychology; the brain (*al-mukhkh*) and the centre of language; "kingdom Animalia" (which describes various animals); plants; lenses, microscopes, and telescopes.

STH: A dialogue with a friend.

SENHL: Sun(shine) is useful for health; [the structure of] blossom and flowers is similar to the solar system.

Sūra Ṭūr *(Meccan, 49 verses)*

PRIT: Commentary on the *basmala*; torments and pleasures; description of the people of Paradise and Hell; the disbelievers and the truth of prophecy; proof of divinity; *al-Bayt al-Maʿmūr* (the Flourishing House).

NIQA: ——

STH: ——

SENHL: ——

Sūrat al-Najm *(Meccan, 62 verses)*

PRIT: Commentary on the *basmala*; Muḥammad and the revelation; rebuking idolaters for their ignorance and claiming their idols are daughters of God; God's mercy; the night prayer; male and female.

NIQA: The importance of practice.

STH: ——

SENHL: ——

Sūrat al-Qamar *(Meccan, 55 verses)*

PRIT: Commentary on the *basmala*; the Hour; worldly torment; rebuking the Quraysh; *al-qaḍā wa'l-qadar*.

NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Raḥmān *(Medinan, 78 verses)*

PRIT: Commentary on the *basmala*; religions; Islam and its book, the Qurʾān; objects and the human intellect; the inspiration of science, understanding, speech, etc., from the universe and planets; the wonders of calculation and reckoning in this *sūra*.

NIQA: On the wonders of this world; the wonders of the Hereafter; the spider and its web; bees and beehives; ants; educating Islamic nations in the future; the cognitive/perceptive level of animals and humans; missiles, the miracle of this century; numbers; the decline of *ḥisāb* (science of *ḥisāb*) in the Muslim world; maths.

STH: ——

SENHL: People are surrounded by lusts, such as drinking wine, smoking, and cocaine.[27]

Sūrat al-Wāqiʿa *(Meccan, 96 verses)*

PRIT: Commentary on the *basmala*; forerunners (*al-sābiqūn*); the companions of the right; the companions of the left; cosmic wonders and their relationship with the glorified Creator.

NIQA: On immortality and long life.

STH: Tea with sugar.

SENHL: ——

Sūrat al-Ḥadīd *(Medinan, 29 verses)*

PRIT: A commentary on the *basmala*; God's attributes; His beautiful names; the marvels of His creations; *infāq*; ten valuable insights including good news to Muslims in light of *yawm al-qiyāma* (the Day of Judgement); denouncing the world and announcing the Hereafter; condemning stinginess; emphasising justice, etc.; the Scriptures and *mīzan* sent to other communities.

NIQA: Descriptions of love; on poets; love and philosophy; animals; the wealth of the Dead Sea.

STH: ——

SENHL: "Indeed, living in this world is play and pastime."

Sūrat al-Mujādila *(Medinan, 22 verses)*

PRIT: Commentary on the *basmala* of this *sūra* along with a summary of *sūrat al-ḥashr*, and a commentary on the *basmala* of the following *sūra*s: *al-Mumtaḥana*; *al-Ṣaf*; *al-Jumuʿa*; *al-Munāfiqīn*; *al-Taghābun*; *al-Ṭalāq*;

al-Taḥrīm; and al-Mulk/*Tabārak*; some rules; the "[desire to] privately consult the Messenger"; hypocrites.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Ḥashr *(Medinan, 24 verses)*

PRIT: God and His Prophet's power over their enemies; the manners of hypocrites; *Ahl al-Kitāb*; God's attributes; the meanings of the beautiful names of God (based on al-Ghazālī).
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Mumtaḥana *(Medinan, 13 verses)*

PRIT: General topics (with a literal interpretation) dealing with the verses of this *sūra*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Ṣaf *(Medinan, 14 verses)*

PRIT: Moses and Jesus, who fought in God's way.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Jumuʿa *(Medinan, 11 verses)*

PRIT: *wilāya* and *walī*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Munāfiqūn *(Medinan, 11 verses)*

PRIT: General topics (with a literal interpretation) dealing with the verses of this *sūra*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Taghābun *(Medinan, 18 verses)*

PRIT: General topics (with a literal interpretation) dealing with the verses of this *sūra*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Ṭalāq *(Medinan, 12 verses)*

PRIT: Mainly about *aḥkām*; general topics (with a literal interpretation) on the verses of this *sūra*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Taḥrīm *(Medinan, 12 verses)*

PRIT: On the Prophet's wives; the examples of the wives of Noah and Lot.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Mulk *(Meccan, 30 verses)*

PRIT: The mercies of the *basmala* and other *sūra*s; [He] "who created death and life" and modern findings; rhetoric in the Qurʾān.
NIQA: On birds; colours; light and refraction; lenses and the microscope; the telescope; glass; types of animals.
STH: ——
SENHL: ——

Sūrat al-Qalam *(Meccan, 52 verses)*

PRIT: On the Prophet's good disposition; the evil manner of some unbelievers; the people of Mecca.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Ḥāqqa *(Meccan, 52 verses)*

PRIT: The perdition of people in this world; the torments of the Hereafter; proofs of prophethood.
NIQA: ——

STH: ——
SENHL: ——

Sūrat al-Maʿārij *(Meccan, 44 verses)*

PRIT: Judgement Day; Hell and its torments; human features; human instincts; the disbelievers.
NIQA: ——
STH: Al-Shaʿbī and the King of Rome.
SENHL: ——

Sūra Nūḥ *(Meccan, 28 verses)*

PRIT: Noah's *daʿwa* (mission) to his people; their infidelity and punishment in this world.
NIQA: Beholding the creation of the heavens, earth, and light; beholding the creation of human beings.
STH: ——
SENHL: ——

Sūrat al-Jinn *(Meccan, 28 verses)*

PRIT: On repentance; on the names of qurʾanic chapters; a few points on spirits.
NIQA: Past and present people's thoughts on the Jinn; the Jinn in modern science.
STH: ——
SENHL: ——

Sūrat al-Muzzammil *(Meccan, 20 verses)*

PRIT: On themes of verses of this *sūra*, such as Muḥammad arising to pray; correct recitation of the Qurʾān, etc.; worship.
NIQA: The privileges accorded to Islam in the future.
STH: ——
SENHL: When God created us, He bestowed us with bodily members, senses, and intellect.

Sūrat al-Muddaththir *(Meccan, 56 verses)*

PRIT: On warnings; magnifying God; the purification of clothes and garments; other themes of the *sūra*.
NIQA: The number of stars, and the stars' names; Eta Ursae Majoris; the Pleiades; insects.
STH: ——
SENHL: ——

Sūrat al-Qiyāma *(Meccan, 40 verses)*

PRIT: On the Day of Judgement; the wonders of human creation; seeing the face of God.
NIQA: Human bones; medicine; biology; botany; zoology; *ʿilm al-nafs*; pedagogy; politics; metaphysics.
STH: ——
SENHL: ——

Sūrat al-Insān *(Medinan, 31 verses)*

PRIT: On the creation of human beings; *qiyāma* (the Day of Judgement); a description of Paradise and Hell; the importance of patience and remembering Allāh, based on the Prophet's recommendation
NIQA: On humans, sperm and *amshāj*; sensual and intellectual pleasures.
STH: ——
SENHL: Men and women at the beginning of their life on earth only see life from a sexual perspective: men want women and women want men for sexual pleasure alone; such pleasure later changes to intellectual pleasure (*al-ʿaqliyya*).

Sūrat al-Mursalāt *(Meccan, 50 verses)*

PRIT: Those who deny the message, and the torments for them in the Hereafter; the pious; description of the human creation; the earth and mountains; the authority and greatness of the Creator.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Nabaʾ *(Meccan, 40 verses)*

PRIT: A commentary on the *basmala* of this *sūra* and the subsequent ones; the importance of resurrection; on rebuking the ignorant; on the resurrected one.
NIQA: The spectroscope; types of plants (couch grasses, bushes, and trees); leaves; flowers; botanical issues.
STH: ——
SENHL: ——

Sūrat al-Nāziʿāt *(Meccan, 46 verses)*

PRIT: The graces and greatness of the Creator.
NIQA: ——
STH: The life of an Egyptian farmer.
SENHL: Science was sent down from above to the hearts of the prophets and then reached the people through them.

Sūra ʿAbasa ***(Meccan, 42 verses)***

PRIT: The Prophet and Ibn Umm-Maktūm; the lives of humans from birth to resurrection; examples of divine grace and favour, such as plants and fruits; knowledge of God's mercies and the opinions of scholars.
NIQA: Plants and their various uses; the embryo and humans; plants and the sun; the health of the human body; artesian aquifers; root pressure; osmotic pressure; the science of ethics, politics, and plants; the wonders of plants; future progress in human ethics and politics; a comparison between humans and plants; the politics of people and nations in the future.
STH: A Persian expression from *Kalīla wa-Dimna.*
SENHL: Everything in the world is a sign of God's mercy.

Sūrat al-Takwīr ***(Meccan, 29 verses)***

PRIT: The Day of Judgement; plants, night, morning; proofs of prophethood.
NIQA: Mars.
STH: ——
SENHL: ——

Sūrat al-Infiṭār ***(Meccan, 19 verses)***

PRIT: The Day of Judgement; on the good and bad; the righteous and wicked.
NIQA: People and their God(s).
STH: ——
SENHL: ——

Sūrat al-Mutaffifīn ***(Meccan, 36 verses)***

PRIT: General relevant issues.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Inshiqāq ***(Meccan, 25 verses)***

PRIT: Results of humans understanding their deeds in the Hereafter; humans; the states of humans in this world and the Hereafter.
NIQA: The sky and universe; the world of humans.
STH: ——
SENHL: The religion of Islam will move the world towards science and bliss.

Sūrat al-Burūj ***(Meccan, 22 verses)***

PRIT: The greatness of God; the attributions of beauty; *Aṣḥāb al-ukhdūd*.
NIQA: ——

STH: On history (using philosophical-traditionist arguments).
SENHL: ——

Sūrat al-Ṭāriq *(Meccan, 17 verses)*

PRIT: General issues.
NIQA: ——
STH: ——
SENHL: The beauties of the upper world that are portrayed in this *sūra*.

Sūrat al-Aʿlā *(Meccan, 19 verses)*

PRIT: The prophetic mysteries (*asrār al-nubuwwa*) found in this *sūra*.
NIQA: Plants' minerals and elements; mines; the wonders of plants, trees, and animals; birds; vermin and insects; abscesses and furuncles.
STH: ——
SENHL: The world we are living in resembles the human body; understanding the universe and the spirit assists humans to understand bodily movements and feelings; God placed the physical beauty of the face into four parts: the mouth, the nose, and the two eyes; God also placed internal beauty in four parts: wisdom (*al-ḥikma*), chastity (*al-ʿiffa*), bravery (*al-shajāʿa*), and justice (*al-ʿadl*).

Sūrat al-Ghāshiya *(Meccan, 26 verses)*

PRIT: A description of the people of Paradise and Hell; wondrous divine craft.
NIQA: The wonders of mountains; how mountains are formed, from a modern perspective.
STH: ——
SENHL: ——

Sūrat al-Fajr *(Meccan, 30 verses)*

PRIT: The destruction of ʿĀd, Thamūd, and Pharaoh's people; divine grace and disaster.
NIQA: The numbers, their essence, quantity, and qualities.
STH: Two amusing anecdotes.
SENHL: ——

Sūrat al-Balad *(Meccan, 20 verses)*

PRIT: Humans and problems in this world, and the importance of ethics and of purifiying one's soul.
NIQA: A description of rich and poor.

STH: ——
SENHL: ——

Sūrat al-Shams *(Meccan, 15 verses)*

PRIT: Great creatures and the ones who purify their souls and set it with good morals; those who instil it [with corruption] like Thamūd, who was destroyed.
NIQA: Yearning; inclinations and likings; [a long discussion] on intelligence; rivers; plants and coalfields; the upper whole self and the lower partial self.
STH: From Plato; news from [the British Newspaper] *The Daily Express* about a marvellous invention pertaining to photographs of the dead.
SENHL: ——

Sūrat al-Layl *(Meccan, 21 verses)*

PRIT: People and their striving.
NIQA: General knowledge about the universe (*maʿlūmāt al-ʿāmma ʿan al-kawn*).
STH: ——
SENHL: ——

Sūrat al-Ḍuḥā *(Meccan, 11 verses)*

PRIT: The permanent relationship between God and His Prophet; the favour of God.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Sharḥ *(Meccan, 8 verses)*

PRIT: On God expanding (*sharḥ*) the breast of the Prophet
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Tīn *(Meccan, 8 verses)*

PRIT: Figs and olives; Ṭūr Sīnīn and Mecca; the creation of human in the best mould, figure and perfection.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-ʿAlaq[28] ***(Meccan, 19 verses)***

PRIT: On the creation of humans; *marātib al-wujūd*; divine blessings.
NIQA: Eggs and the ovum; two types of thinkers; general/universal education in the Muslim world; the ranks of creatures; handwriting (calligraphy) in different languages; humans and perfection; the relationship between the cotton industry (textile) and human progress; physical education; physical-rational education; rational education in schools; general literary education; practical education (*al-taʿlīm al-ʿamalīy*); instincts.
STH: Ṭanṭāwī Jawharī's letter to ʿAbd al-Azīz b. Saʿud, the king of Najd and Ḥijāz[29]; a letter to the Imām of Yemen.
SENHL: There is a resemblance between the beauty of writing (and calligraphy) and the beauty of trees and blossom; two types of education, the physical (*tarbiya jismiyya*) and the rational (*tarbiya ʿaqliyya*). The latter is divided into three parts: school education, civil/cultural education, and general literary education.

Sūrat al-Qadr ***(Meccan, 5 verses)***

PRIT: *Lawḥ Maḥfūẓ*; the meaning of *Layla al-Qadr*.
NIQA: ——
STH: ——
SENHL: Science has no value except through practice.

Sūrat al-Bayyina ***(Medinan, 8 verses).***

PRIT: The Prophet; idol worshippers; *Ahl al-Kitāb.*
NIQA: Different types of polytheists currently (e.g. in Abyssinia, and different types in China).
STH: ——
SENHL: ——

Sūrat al-Zalzala ***(Medinan, 8 verses)***

PRIT: The Day of Judgement and the astonished people; their deeds, good and bad; the joy of science in this *sūra.*
NIQA: The joy of science; that which is extracted from the earth (e.g. oil).
STH: The calamity of earthquakes in Italy (based on an Egyptian newspaper).
SENHL: ——

Sūrat al-ʿĀdiyāt ***(Meccan, 11 verses)***

PRIT: The human reception of God's favours, with other general relevant issues.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Qāriʿa *(Meccan, 11 verses)*

PRIT: General relevant issues.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Takāthur *(Meccan, 8 verses)*

PRIT: General relevant issues.
NIQA: ——
STH: Twenty instructive points.
SENHL: ——

Sūrat al-ʿAṣr *(Meccan, 3 verses)*

PRIT: [God's] swearing an oath over twenty things, such as *al-fajr* (the dawn), *al-falaq* (the daybreak), *al-ṣubḥ* (the Morning), and *al-shams* (the Sun).
NIQA: ——
STH: ——
SENHL: How God commanded his worshippers to behold the upper and lower worlds equally.

Sūrat al-Humaza *(Meccan, 9 verses)*

PRIT: On *al-humaza* and *al-lumaza* (the scorner and the mocker).
NIQA: ——
STH: ——
SENHL: The two types of torment in the Hereafter: the physical and the psychological/spiritual; Resurrection Day is only the result of this world and the outcome of our deeds.

Sūrat al-Fīl *(Meccan, 5 verses)*

PRIT: The secret of *Alif-Lām-Mīm* in the verse "*alam*" *tara kayfa* . . .
NIQA: Describing the elephant, based on the works of ʿAlī Pasha Mubārak.
STH: The elephant.
SENHL: ——

Sūra Quraysh *(Meccan, 4 verses)*

PRIT: A comparison of this *sūra* with *al-Takāthur*.
NIQA: The meaning of Quraysh.
STH: ——
SENHL: ——

Sūrat al-Māʿūn *(Meccan, 7 verses)*

PRIT: Condemnation of those who deny the Recompense and other points from these verses.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Kawthar *(Meccan, 3 verses)*

PRIT: The meaning and nature of *Kawthar*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Kāfirūn *(Meccan, 6 verses)*

PRIT: General relevant issues.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Naṣr *(al-tawdīʿ) (Medinan, 3 verses)*

PRIT: On *sūrat al-Kawthar* and *al-Naṣr*; the purpose of this *sūra*; description of *Kawthar*.
NIQA: ——
STH: ——
SENHL: ——

Sūrat al-Masad *(Meccan, 5 verses)*

PRIT: General relevant notes.
NIQA: ——
STH: On Muslims, their new state of ignorance, and Europeans.
SENHL: ——

Sūrat al-Ikhlāṣ *(Meccan, 4 verses)*

PRIT: General relevant notes.
NIQA: ——
STH: Americans, Islam, and *sūrat al-Ikhlāṣ*.
SENHL: ——

Sūrat al-Falaq *(Meccan, 5 verses)*

PRIT: Magic spells.
NIQA: Magic spells.

STH: ——
SENHL: ——

Sūrat al-Nās *(Meccan, 6 verses)*

PRIT: The wonders of *sūrat al-Falaq* and *al-Nās*, and modern spiritual science in Europe.
NIQA: The wonders of *sūrat al-Falaq* and *al-Nās*, and modern spiritual science in Europe.
STH: Treatment and psychotherapy (*ʿilāj al-nafs*).
SENHL: ——

Notes

1 Ṭanṭāwī Jawharī, *al-Jawhāhir fī Tafsīr al-Qurʾān*, 26 vols (Cairo, 1933).
2 The final chapters of the Qurʾān are introduced under the rubric "general relative issues," as they are short, or general interpretive notes previously mentioned by other commentators.
3 The classification of chapters based on their supposed place of revelation (Meccan or Medinan) is widely known by readers of the Qurʾān, and in what follows the places of revelation will be limited to these to two sites (or times), rather than going into any more details about which specific parts of verses were revealed in Mecca, Medina, or in between.
4 He connects autopsies to some exegetical discourses.
5 To interpret this verse, he contended that, unlike animals and birds, humans do not have enough hair to cover themselves. Instead, God bestowed humans with the ability to reason so they may produce cloth for themselves by using natural materials, to create electricity, grow cotton, collect wool, and use their own ideas and technology to make cloth (cf. Q 4:166).
6 Ṭanṭāwī Jawharī published an article referring to the Tatars in *al-Hilāl*, and a Persian translation of it was published in Iran.
7 Ṭanṭāwī Jawharī listed verses of science in every *sūra* in the appendix volume of his commentary. In this volume, he applied several illustrations and additional scientific and historical reports. See Ṭanṭāwī Jawharī, *al-Jawhāhir fī Tafsīr al-Qurʾān (mulḥaq)*, pp. 130–145.
8 Supposed to improve personal/social relationships.
9 This is why Ṭanṭāwī Jawharī was unhappy with Muslims' lack of knowledge about their own heritage, Islamic statements dealing with spirits, and so forth.
10 See also the translation of Ṭanṭawī Jawharī's article on Einstein in the Appendix.
11 This may be considered one of Shaykh Ṭanṭāwī Jawharī's most important messages.
12 It seems that Ṭanṭāwī Jawharī did not agree with those Egyptians (e.g. Shiblī Shumayyil) who followed Darwin's path, as he opined that such people move towards heresy and deny God; *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm* 11:125. It is thought Shumayyil was among the first Egyptians to familiarise Egyptians with Darwin's theory through his publications in *al-Muqtaṭaf*; see also Azzam Tamimi, "The Origins of Arab Secularism" in J. L. Esposito and A. Tamimi (eds), *Islam and Secularism in the Middle East* (London, 2002), p. 22.
13 He referred to this theory in vol. 13:38–40.
14 This point shows how Ṭanṭāwī Jawharī attempted to relate physical health to spiritual well-being, hoping to prove that a healthy body is important for a healthy mind.
15 According to Elshakry, Muḥammad ʿAbduh also made some notes on ants.
16 In one part of this volume, Ṭanṭāwī Jawharī attempts to adapt Q 18:88 to the latest modern discoveries and scientific influences in Europe (see *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 14:76)

17 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm,* 14:177. Ṭanṭāwī Jawharī also lists some anti-Islamic/Muḥammad acts (which, in the modern world, are labelled Islamophobia) by Europeans. For instance, he refers to a Christian newspaper in which it was mentioned that "Muḥammad received his revelation from *shayṭān*" and similar things about Muslims (*al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm,* 14:197–199).
18 On Q 30:20, Ṭanṭāwī Jawharī translated the term *turāb* as "soil" and interpreted "And of His signs is that He created you from dust . . . " as humans feeding plants and vegetables while they achieve their food from soil, air, and water . . . ; Ṭanṭāwī Jawharī; *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 25:24.
19 Ṭanṭāwī Jawharī; *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm*, 25:66
20 It can be said that Ṭanṭāwī Jawharī, along with ʿAbduh, was one of the first modern Arab thinkers to highlight the connection between human health and Islamic rituals. Today, the notion that *ṣalāt* (daily prayer), owing to physical benefits, has a direct relationship with healthy exercise is often discussed in contemporary Islamic contexts.
21 The importance of the family had already been expressed by Muḥammad ʿAbduh.
22 Here, Ṭanṭāwī Jawharī introduces the different methods used by physicians.
23 Occasionally, Ṭanṭāwī Jawharī defined the term *ʿilm* as awareness and understanding, which, as Guessoum says, is not restricted to a specific scientific discipline. "Awareness" means "science," according to Ṭanṭāwī Jawharī; he emphasised that learning about science increases the individual's level of awareness.
24 Many contemporary scholars have referred to scientific issues when interpreting *sūrat al-Dukhān*. However, Ṭanṭāwī Jawharī is the one who, despite his innovational ideas, merely focused on industrial smoke and its problems for humans and nature.
25 It is clear that Ṭanṭāwī Jawharī's main audience was Egyptian Arabs.
26 To interpret this chapter, Ṭanṭāwī Jawharī provided two sections: scientific and literal.
27 It may be said that Ṭanṭāwī Jawharī was one of the very first modern interpreters who was also concerned with people's health.
28 Here, Ṭanṭāwī Jawharī is referring to Malay-Indonesian people.
29 He was also in contact with two religious thinkers, in Qum and Tabriz, Iran.

Final thought

Reading these qurʾanic chapters with Ṭanṭāwī Jawharī reveals that he wanted not only to be a commentator or a Shaykh for individual Muslims, but also to reform and unite the Islamic nations. He tried to harmonise health, education, the family, and science with Islamic rituals and practices, a path that had been previously followed by Muḥammad ʿAbduh. However, Ṭanṭāwī Jawharī had a much greater ambition as to how European science could be employed. He was very keen to encourage himself, his peers, and other Muslims (particularly the young Arabs who had joined the associations founded or directed by him) to compete with Europeans in science and industry.

In contrast to several post-Jawharist discussions on science and the Qurʾān, Ṭanṭāwī Jawharī suggested explanations for some verses that had not been seen before. For instance, he related *al-dukhān* ("the smoke") to industrial haze and its disadvantages. The SENHL section clearly shows that Ṭanṭāwī Jawharī did not wish to prove the scientific inimitability of the Qurʾān nor did he want to write a scientific exegesis to gain popularity among Muslims. It is apparent that he, following Sayyid Jamāl al-Dīn and ʿAbduh, was concerned about Muslim identity, nationhood, and unity. Upon observing the statements of Sayyid Jamāl al-Dīn regarding Ernst Renan on the one hand, and feeling the political and cultural influence of Europeans over the East on the other, ʿAbduh and his Arab followers, including Ṭanṭāwī Jawharī, were interested in ending the established Ashʿarite understanding of Islam – of merely seeing Islam through the lens of tradition and imitation – and instead writing on Islam, the human intellect, and modern science.[1]

Some modern Arab Muslims, however, occasionally pursued an Ibn Taymiyya-esque method to critique [Christian] non-Muslims who questioned Islamic civilisation and Muḥammad's divinity. In this regard, some, such as Tawfīq Ṣidqī, whose main concern was to prove the originality of the Qurʾān and revelation, acted as apologists for Islam, while others like Ṭanṭāwī Jawharī, impressed by Arab politicians and intellectuals, tried to unite Muslims in general, and the Arabs in particular. Ṭanṭāwī Jawharī moved his people towards industrial progress and decolonisation using the vehicle of "scientific findings."

Alongside classical Muslim thinkers, Ṭanṭāwī Jawharī wanted to eradicate *fitna*, domestic conflict, and civil war among Muslims, especially those sharing a

common Arabic language. Despite a strong emphasis on "peace" in many of his publications, Ṭanṭāwī Jawharī never neglected the importance of holy war (*jihād*) against non-Muslims. He launched a "peaceful battle" that resembled a competition with non-Muslims; thus, in commenting on the verses of *sūrat al-Ḥajj*, he said "*jihād* in these periods is scientific and does not happen by warfare, attacks, swords, or guns but with science" (*jihād fī hādhih al-ʿuṣūr huwa al-jihād al-ʿilmī, fa-innah lā ḥarb, lā ḍarb wa-lā sayf wa-lā midfaʿ illā bi'l-ʿilm*).

The above points suggest that Ṭanṭāwī Jawharī's *tafsīr* can be described as a social/practical/day-to-day endeavour as it addresses the importance of science, industry, nature, and the cosmos in light of the Muslims' decline and backwardness. Ṭanṭāwī Jawharī's *tafsīr* is replete with references to natural and cosmological wonders yet does not attempt to establish the doctrine of "scientific inimitability" (*iʿjāz ʿilmī*); instead it was aimed at, as he himself said, awakening Muslims to re-claim the knowledge their ancestors had given to Europeans several centuries ago.

Many post-Jawharist works, however, were written with the aim of proving the scientific inimitability of the Qurʾān. It has been shown that Bucaille, unlike Ṭanṭāwī Jawharī, had a systematic, empirical view towards science in the Qurʾān, and as such it may be said that he is much better qualified to hold the title "founder of scientific exegesis."[2] This is because Bucaille's innovation led to the emergence of the new doctrine of *iʿjāz ʿilmī*, one promoted by al-Zindānī, who in turn highlighted the videos and writings of Western scholars such as Keith Moore that declared that the Qurʾān foretold the results of modern physiological/embryological research. The doctrine of *iʿjāz ʿilmī* enlarges the Muslim understanding of scientific interpretation so that it is now a complex socio-political doctrine, one whose authors not only argue that the Qurʾān and science are compatible but also that, by predicting empirical knowledge, the Qurʾān also confronts biblical literature that holds inaccurate information. In contrast, and despite referring to "superstitious" aspects of other religious scriptures, Ṭanṭāwī Jawharī's *tafsīr* does not revolve around the inimitability of the Qurʾān but the negligence of Muslims.

It is worth recalling the emergence of the term *iʿjāz* in Islamic literature. It is not too far-fetched to say that, just as early Muslim responses to the accusations of Christians such as al-Kindī regarding the miraculousness of the Qurʾān and the truth of Muḥammad's prophethood laid the foundations for the establishment the doctrine of inimitability by al-Rummānī (d. 996),[3] late twentieth-century Muslim scholars who sought to resist the West and remove Western influences from the Middle East, among other things, likewise founded the doctrine of scientific inimitability.[4]

This demonstrates that social and political contexts have always influenced human thought and approaches to the universe. Many sources suggest that various genres of qurʾanic interpretation were later incorporated into the corpus of Islamic literature due to particular historical circumstances (e.g. the emergence of theological interpretations of the Qurʾān in early Islam). As such, it should be clear that the majority of nineteenth- and early twentieth-century scholars were also influenced by the social and political context of their own time. Indeed, there has

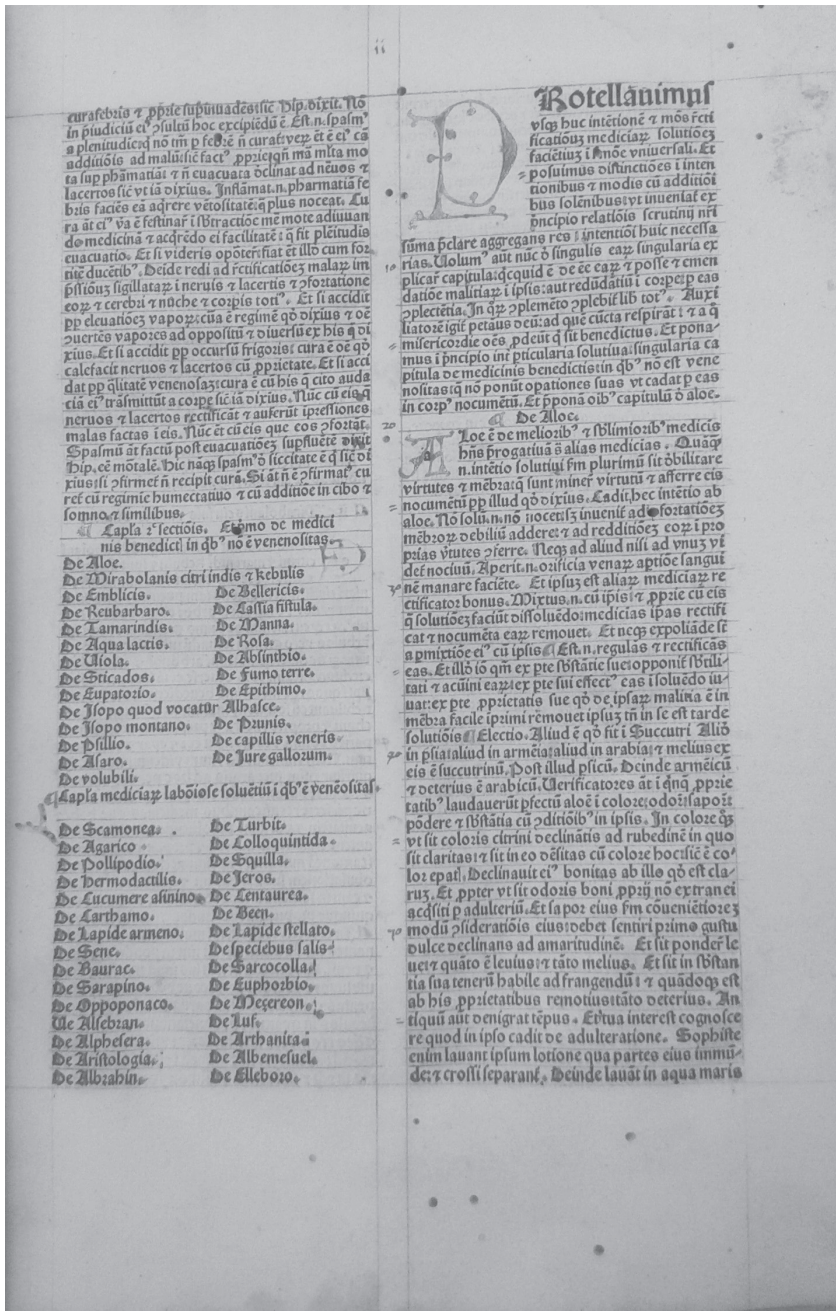


Figure 8.1 The translation of Mesue's (b. 777/161) work on pharmacy and *materia medica*
Canon Shoults Collection, University of Otago, Dunedin, New Zealand.

often been a mutual relationship between Eastern and Western literature; just as Khālid b. Yazīd, the Umayyad ruler, stimulated Greek scholars based in Egypt to "translate Greek-Egyptian medical literature into the Arabic,"[5] many Europeans translated the works of Near Eastern scholars into Latin and disseminated them throughout Europe, e.g. the translation of Yuhanna b. Masawayh or Mesue's (b. 777/161) work on pharmacy and *materia medica*. This mutual influence between Orientals and Occidentals influenced Ṭanṭāwī Jawharī and his predecessors and successors as scholars in both the East and the West.

It was not only colonialists who recognised the importance of Eygpt and other Eastern lands, but so did writers of European religio-academic literature, such as John William Dawsons (d. 1899), who wrote "Modern Science in Bible Lands," which helped stimulate Europeans to discover the lands of scripture. He says:

> Exodus is, in its opening, especially an Egyptian book, but it soon takes us out into the Arabian desert, and the aspects of desert life prevail, mixed with Egyptian ideas, till the settlement in Canaan. Henceforth the Old Testament is conversant with the geological structure, the climate, the animals and plants of Palestine. The New Testament opens with a later phase ot Palestinian life, and then launches forth into the wider area of the Eastern Mediterranean, from which much of its local colouring is taken.[6]

There were also philosophers, thinkers, and officers who had probably heard about the discourse on the connection between tradition, nature, and intellect discussed in early eighteeth-century sources. For instance, "how the same individual bodies are said to rise at the Last Day" is discussed on the basis of Acts 24:15 ("there shall be a Resurrection of the Dead, both of the Just and Unjust"), in 1713.[7] As such, it seems sensible to attempt to discover why Muslim visitors to Europe in the nineteenth century, upon returning to the Orient, attempted to shed some light on the importance of the intellect in Islam. Just as European Christians rejected or supported Darwinism in the late nineteenth and early twentieth century, so did different group of Orientals try to ascribe *The Origin of Species* to their school of thought or to refute its validity. It may thus be said that Ṭanṭāwī Jawharī, his mentors, and peers, as well as their works and thoughts, were the product of the history, literature, and arts exchanged between Orientals and Occidentals during his lifetime and earlier.

Although Ṭanṭāwī Jawharī is mainly known because of his lengthy commentary, his connections with the national party; excessive references to European discoveries; admiration of non-Muslims such as Kant, Lubbok, and Spencer; acceptance of the effectiveness of European thought; highlighting of the indolence of Muslim communities; references to spiritualism; and fierce criticism of al-Azhar's educational system, among others, caused his *tafsīr* to be both well-known (in terms of its methodology and content) and poorly-received by some influential Islamic thinkers, who themselves soon became the founder of other trends. Despite lauding his own *tafsīr*, most of his social-political thoughts were hidden behind his exegetical façade. His *tafsīr* was also unable to compete with those of his contemporaries.

However, it must be acknowledged that Ṭanṭāwī Jawharī frequently used translated news and the discoveries that were published in the mass media during his lifetime. His thoughts will doubtless be of some interest to readers, but it seems that the application of such data, even if it is used simply in order to stimulate Muslim communities to compete with Europeans, will be challenged in the future.[8] And such a challenge may be to either an interpretation (i.e. *tafsīr*) based on borrowing scientific findings or to works showing the scientific inimitability (*iʿjāzʿilmī)* of the Qurʾān; both – more so in future than today – will give Muslims a dilemma: whether to accept Islam or science.

An imaginary future: 2154 AD

"Past and present inform each other, each implies the other and, in the totally ideal sense . . ., each co-exists with the other . . . Neither past nor present, any more than any poet or artist, has a complete meaning alone." This statement by Edward W. Said is supported by his next comment, which states that "how we formulate or represent the past shapes our understanding and views of the present."[9] This means that if Ṭanṭāwī Jawharī was influenced by classical thinkers and earlier generations of Asiatics and Muslim activists to help improve the lot of his people by means of scientific data, it will not be unlikely that the next generation of Muslims, to preserve their Islamic identity, will continue to try to support the Qurʾān and their faith through science.

In the meantime, for the sake of clarifying this issue, we must imagine the future. Indeed, **assuming our knowledge of cognitive processes does not alter**, this section will explore the possible influences of future technology on qurʾanic exegetical works. The reader's attention is drawn to *Elysium*, a movie released in 2013. According to the Oxford dictionary, "Elysium" is "the supposed state or abode of the blessed after death in Greek mythology" or "a place or state of ideal or perfect happiness." The movie presents "Elysium" as a magnificent man-made residential habitat equipped with very advanced science in the year 2154. Humans can easily cure the deadliest diseases using technology and live very long lives because, for instance, technology can heal and regenerate various parts of the body. To some extent, it fulfils the perpetual dream of humanity of having eternal life. Although, following the movie's release, many rejected the possibility of Elysium and its technologies, such movies (including *The Martian* and the television series *Humans*) entertain the notion that science in the future will, like Darwinism in the nineteenth century, stand against the religious origins of humanity, death, the hereafter, resurrection, and related religious creational and eschatological beliefs. Here, *Elysium* contradicts qurʾanic verses such as "And Allāh created you; then He will take you in death. And among you is he who is reversed to the most decrepit [old] age so that he will not know, after [having had] knowledge, a thing. Indeed, Allāh is Knowing and Competent" (Q 16:70), and "Every soul will taste/experience death" (Q 3:185). Such verses are interpreted as "Although some people desire to forget their death [in this world], it is a fact that although we may forget death, it will never forget us."[10]

Meanwhile, aliens would probably also question Q 21:105, "My righteous slaves will inherit the earth." They would likely consider "the earth" (*al-arḍ*) as a single noun applied in the Qurʾān to a "mass" rather than heaven(s),[11] thus implying there is only one earth. And who are these righteous people? The possible answers to such questions are even greater when we hear that traces of water have been found on Mars.[12]

Human discoveries, for instance through endeavours at Alcor Life Extension Foundation[13] and MIT Media Lab,[14] will lead humanity to witness a biological revolution that will reveal the importance of radical atoms and various other things. This revolution could easily prove religious doctrines on human creation, death,[15] the hereafter, providence and destiny, *qaḍā* and *qadar*, human will, and others to be wrong.[16]

Even today, much earlier than 2154, scientists have suggested something that contrasts with some commentaries on Q 2:222, which state that menstrual blood is rotten and dirty, and must be expelled from the body,[17] while others have inferred that having sexual intercourse with a menstruating woman is harmful, causes a rise in sexually transmitted infections; it also contradicts the system of a woman's body and may hurt the uterus, [18] or the woman more generally. [19]

However, physiologists have found that not only is sexual intercourse during menstruation not harmful, but it even has positive aspects for both partners.[20] If this becomes widely accepted, qurʾanic exegetes will have three options: to cite and support the new fact against qurʾanic teachings and their interpretations; to reject this scientific fact with stronger evidence; or to follow a classical interpretation of the Qurʾān while ignoring the scientific evidence. [21]

Thus, Muslims will have three alternatives: to ignore scientific discoveries, as has been done by many creationists in the face of evolutionary theory; to ascribe the majority of scientific discoveries to Islam, as was pronounced by Ṭanṭāwī Jawharī; or to follow a metaphorical qurʾanic exegesis, one focusing on ethics and goodness and ignoring the physical world.[22]

In general, thanks to social media, humans will observe the increasing viability of the exchange between the East and the West on literature, arts, and culture, which will result in the emergence of new scientific, exegetical, and supernatural movements in the future.

Notes

1 Ṭanṭāwī Jawharī, *al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm* (Cairo, 1933). Ṭanṭāwī Jawharī's way of thinking is, however, still popular among Muslims, particularly Iranian *ʿulama*. For instance, officials of the *Islamic Propagation Organisation* asked *rūḥāniyūn* to try to use modern science to try to resist the "Western Cultural Invasion."
2 As Bigliardi referred to Guessoum, Bucaille's work is at the centre of scientific interpretation and the scientific inimitability of the Qurʾān.
3 Andrew Rippin, *Muslims: Their Religious Beliefs and Practices* (London, 2012), pp. 34–35.
4 Many important political and social events happened in the Middle East in the last decades of the twentieth century. This issue also seems closer to reality when audiences watch videos, recently uploaded to YouTube channels, of comments by scientists who participated in Jeddah conference(s).

5 Muhammad Salim Khan, *Islamic Medicine*, 2nd edition (New York, 2008), pp. 11–12.
6 J. W. Dawsons, *Modern Science in Bible Lands* (Montreal, 1888), p. 6.
7 J. Edwards, *Theologia Reformata: or the Body and Substance of the Christian Religion* (London, 1713), 2:1–13.
8 Majid Daneshgar, "Behind the Scenes: A Review of Western Figures' Supportive Comments Regarding the Qurʾān," *al-Bayān Journal of Qurʾān and Ḥadīth Studies* 11/2 (2013), pp. 131–153.
9 E. W. Said, *Culture and Imperialism*, p. 2.
10 N. M. Shīrāzī, *Tafsīr Nimūna* (Qum, 1995/1374), 3:200.
11 Rāghib al-Iṣfahānī, *al-Mufradāt fi Gharīb al-Qurʾān*, ed. S.A. Dāwūdī (Damascus and Beirut, 1991/1412), 1:73.
12 *NASA Confirms Evidence that Liquid Water Flows on Today's Mars* [Online source].
13 *Alcor Life Extension Foundation* [Online source].
14 "Radical Atoms," *MIT Media Lab* [Online source].
15 D. Robson, "The Ultimate Comeback: Bringing the Dead Back to Life" [Online source].
16 Pīsh-bīni-yi Fan Āvari-hā-yi Technologi-yi Sī Sāl baʿd" [Online resource].
17 al-Nisābūrī, *Gharāʾib al-Qurʾān*, 1:613.
18 M. Ḥ. Ṭabāṭabāʾī, *al-Mīzān fi Tafsīr al-Qurʾān* (Qum, 1996/1417), 2:312.
19 N. B. Amīn, *Makhzan al-ʿIrfān dar Tafsīr-i Qurʾān*, 2:308.
20 "Sex on Your Period," *Sex Info Online: A Website Devoted to Sex, Health, and Relationships* [Online source].
21 See, for example, Jalāl al-Dīn al-Mahallī and Jālāl al-Dīn al-Suyūṭī, *Tafsīr Jalālayn*, trans. Feras Hamza (Amman, 2007), p. 40.
22 This is similar to some Christian commentaries on the Gospels.

Appendix

This section presents the main literature and studies dealing with some of Ṭanṭāwī Jawharī's writings.

Ṭanṭāwī Jawharī's books and treatises

1 ***al-Jawāhir fī Tafsīr al-Qurʾān al-Karīm al-Mushtamil ʿalā ʿAjāʾib Badāʾiʿ al-Mukawwināt wa-Gharāʾib al-Āyāt al-Bāhirāt*** *("Jewels in the* Interpretation of the Holy Qurʾān, Containing the Marvel of the Beauties of the Creation and Wonderfully Luminous Divine Signs"), 26 vols. (Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1923–1935).

2 ***Aḥlām fīʾl Siyāsa*** ("Political Dreams"; Cairo: Muṣṭafā al-Bābī al-Ḥalābī, 1935).

3 ***al-Farāʾid al-Jawhariyya*** ("Jawharian Uniqueness"; Cairo: Jarīda al-Islām bi-Miṣr, 1897). Jomier stated that this book was written specifically for the students of *Dār al-ʿUlūm*.

4 ***Nahḍat al-Umma wa-Ḥayātuhā*** ("The Arising of the Islamic Nation and its Life"), 2nd edn Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1934). This is one of Ṭanṭāwī Jawharī's main works, in which he discusses issues for Muslims, their movements, and limitations.

5 ***Ayn al-Insān*** ("Where Is Man?"; Cairo: Dār al-Naḥdat al-ʿArabiyya, 1978).

6 ***al-Arwāḥ*** ("The Spirits"; Alexandria: Dār Ṣādiq lil Nashr, 1990).

7 ***al-Sirr al-ʿAjīb fī Taʿaddud Zawjāt al-Ḥabīb: Zawjāt al-Nabī*** ("The Amazing Secret behind the Multiple Wives [Polygamy] of the Prophet: The Wives of the Prophet"; Alexandria: Dār Ṣādiq lil Nashr, 1914).

8 ***Mizān al-Jawāhir fī ʿAjāʾib al-Kawn al-Bāhira*** ("The Balance of the Jewels in the Spectacular Wonders of the Universe"; Cairo: Maṭbaʿat al-Mutawassiṭa, 1899).

9 ***Jamāl al-ʿĀlam*** ("The Beauty of the Universe"), 1st edn (Cairo: Maṭbahʿat al-Jumhūr, c. 1902).

10 ***Jawhar al-Taqwaʾ fī l-Akhlāq waʾl-Tarbiyya*** ("The Essence of Virtue in Ethics and Education"; Alexandria: Maṭbaʿat Jurjī Gharzūzī, 1915).

11 ***Mudhakkirāt fī Adabiyyāt al-lughat al-ʿArabiyya*** ("Notes on the Literature of the Arabic Language"; Cairo: Maṭbaʿat al-Shaʿb, 1908). A textbook for secondary school students.

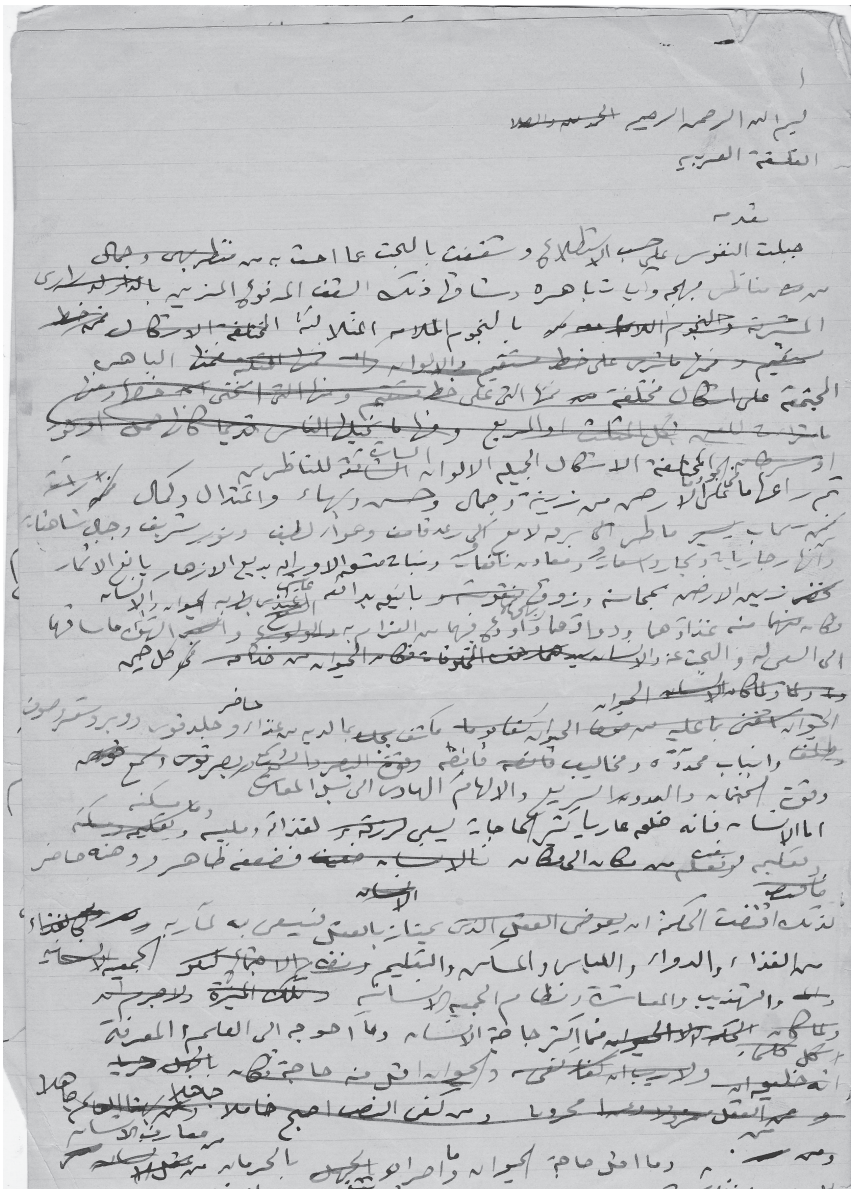


Figure 9.1 Ṭanṭāwī Jawharī's own draft on Arabic philosophy
Family archive from Fathi Saleh, Cairo, Egypt.

12 ***Jawāhir al-ʿUlūm*** ("The Jewels of Science"; Cairo: Maṭbaʿat al-Hindiyya, 1913). A book whose table of contents shows some similarities with that of Ṭanṭāwī Jawharī's exegesis.

13 ***Sawāniḥ al-Jawharī*** ("Les événements de l'essentiel/The Essential Events"; Cairo: Maktabat al-Taʾlīf, 1913).
14 ***al-Musīqa al-ʿArabiyya*** ("Arabian Music"; Alexandria: Maṭbaʿat Jurjī Gharzūzī, 1914).
15 ***al-Ḥikmah waʾl Ḥukamaʾ*** ("Wisdom and Wise Men"; Alexandria: Maṭbaʿat Jurjī Gharzūzī, 1915).
16 ***Risālah al-Hilāl*** ("A Treatise on the Crescent Moon"; Alexandria: Maṭbaʿat Jurjī Gharzūzī, 1915). An eighty-page booklet about the celestial, juristic, geographical, and social aspects of the crescent moon of Ramaḍān.
17 ***Aṣl al-ʿĀlam: Mabāḥith Falsafiyya fī l-Jughrāfiyya al-Ṭabiʿiyya*** ("The Origin of the World: Philosophical Study in Natural Geography"; Alexandria: al-Funūn al-Jamīla, 1916).
18 ***Jawāhir al-Inshāʾ*** ("The Jewels of Composition," or "The Gems of Texts"; Cairo: Maṭbahʿat al-Taraqī, 1934). A book for students.
19 ***Bahjat al-ʿUlūm fī l-Falsafa al-ʿArabiyya wa-Muwazanatuhā biʾl ʿUlūm al-ʿAṣriyya*** ("The Joy of Science in Arabic Philosophy and Its Comparison with Modern Sciences"; Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1936).
20 ***Barāʿa al-ʿAbbasa Ukht Rashīd*** ("The Innocence of ʿAbbasa, sister of Rashīd"; Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1936 or, according to the table 2.1, 1922).
21 ***Kitāb al-Tarbiyya lil Ḥakīm al-Almāniy Kānt*** ("The Book of Education written by German Thinker Kant"; Cairo: al-Maṭbaʿat al-Salafiyya, 1936–1937). This is an Arabic translation of Kant's main book, *Über Pädagogik* ("Education"), which was translated by Ṭanṭāwī Jawharī directly from the English version of Annette Churton in 1899.
22 ***al-Quʾrān waʾl-ʿUlūm al-ʿAṣriyya*** ("The Qurʾān and Modern Science"), 2nd edn (Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1951). This book urges all Muslims to seek knowledge and technology and says there are 377 million Muslims scattered throughout the world. There are chapters on *Ṭuruq al-Ittiḥād* ("The Ways of Unification") and *Fī Ṭuruq Nashr al-ʿilm waʾl-Ṣināʿāt bayn al-Muslimīn* ("Ways to Spread Science and Industry among Muslims"), in which Ṭanṭāwī Jawharī explains how Muslims can be united and advance.
23 ***Tafsīr Sūrat al-Fātiḥa*** ("The Interpretation of the First Chapter of the Qurʾān: The Opening"), 2nd edn (Cairo: Muṣṭafā al-Bābī al-Ḥalabī, 1952). Jomier said that this book by Ṭanṭāwī Jawharī was translated into Chinese by a Muslim Chinese named Wan Wen Kin.

Ṭanṭāwī Jawharī's essays

1 "Bāb al-Murāsilāt: Yājūj wa-Mājūj Hum al-Tatar waʾl-Mughūl," *al-Hilāl* 17 (Muḥarram 1317/May 1899), 521–526.
2 "al-Muktashifāt al-Ḥadītha," *al-Muqtaṭaf* 3 (Dhū l-Ḥijja 1340/July 1922), 242–247.
3 "Maʾkhadh al-Tarbiyya," *Ṣaḥīfa al-Muʿallimīn* 2 (1923), 135–145.

4 “Madhhab al-Sūfisṭāʾiyya,” *al-Maʿrifa* 2/1 (Muḥarram 1350/May 1931), 153–157.
5 “Fī Falsafa al-ʿArabiyya,” *al-Maʿrifa* 3 (Ṣafar 1350/June 1931), 361–364.
6 “Min al-Sharq ilā l-Gharb,” *al-Maʿrifa* 4/1 (Rabīʿ al-Awwal 1350/July 1931), 453–456.
7 “min al-Sharq ilā l-Gharb,” *al-Shihāb* 7/9 (Jumādā l-Awwal 1350/September 1931), 556–562.
8 “al-Qaḍā waʾl-Qadar,”*al-Maʿrifa* 7 (Jumādā al-Thāniyya 1350/October 1931), 873–875.
9 “Ārāʾ al-Khaṭīra fī l-Khilāfa al-Islāmīyya,” *al-Maʿrifa* 9 (Shaʿbān 1350/ December 1931), 1064–1066.
10 “al-ʿUlūm al-Riyāḍiyya ʿinda l-Qudamāʾ al-Miṣriyyin,” *al-Maʿrifa* 3 (Ṣafar 1351/June 1932), 259–262.
11 “Ijāba ʿalā suʾāl al-ʿallāma al-shaykh al-Ḥammāmī wa-iʿtirāḍ ʿalā Kitāb al-Jawāhir fī Tafsīr al-Qurʾān,” *al-Fatḥ* 370 (Rajab 1352/October 1933), 6–7.
12 “Lugha l-ʿArab wa-Lugha Qudamāʾ al-Miṣriyyin,” *al-Fatḥ* 369 (Rajab 1352/ October 1933), 17–18.
13 “Masʾala al-Ribā wa-Laḥm al-Khinzīr,” *al-Fatḥ* 368 (Rajab 1352/October 1933), 14–15.
14 “Masʾala Laḥm al-Khinzīr,” *al-Fatḥ* 369 (Rajab 1352/October 1933), 15.
15 “Shahāda al-Sīnamā fī l-Maḥākim,” *al-Fatḥ* 375 (Shaʿbān 1352/November 1933), 15.
16 “Yājūj va Mājūj hamān Tatar va Mughūl ast,” *Armaghān* 152 (Azar 1312/ November 1933), 625–634 [The Arabic version of this article was originally published by *al-Hilāl*].
17 “Naẓariyya Nisbiyya Anshtayn,” (Einstein’s Relativity Theory) *Humāyūn* 8 (Ordībehesht 1314/March–April 1934), 13–15. This article about Einstein’s theory of relativity was sent by Ṭanṭāwī Jawharī himself to a Persian language journal.
18 “Shahāda Khuṭūṭ al-Aydī waʾl-Arjul: Muʿjiza Qurʾaniyya,” *al-Fatḥ* 378 (Ramaḍān 1352/December 1933), 14–15.
19 “Fī Sūrat al-Anʿām,” *al-Taʿlīm al-Ilzāmī* 10 (Rabīʿ al-Awwal 1353/June 1934), 28–31.
20 “Fī l-Tarbiyya waʾl-Taʿlīm: Wujūb Intishār al-Taʿlīm fī Jamīʿ al-Bilād,” *al-Taʿlīm al-Ilzāmī* 1 (Jumādā l-Awwal 1353/August 1934), 9–11.
21 “Fī l-Dīn: Āya al-Dhikr al-Ḥakīm II,” *al-Taʿlīm al-Ilzāmī* 2/4 (Shaʿbān 1353/ November 1934), 21–26.
22 “Fī l-Dīn: Āyāt min Sūra Fāṭir,” *al-Taʿlīm al-Ilzāmī 5* (Ramaḍān 1353/ December 1934), 16–19.
23 “Fī l-Dīn: Āyāt min Sūra Fāṭir,” *al-Taʿlīm al-Ilzāmī* 6 (Shawwāl 1353/ January 1935), 25–28.
24 “Fī l-Dīn: Fī Sūrat al-Nūr,” *al-Taʿlīm al-Ilzāmī* 9 (Muḥarram 1354/April 1935), 12–16.

25 "Fī l-Dīn: Fī Sūrat al-Nūr II," *al-Taʿlīm al-Ilzāmī* 10 (Rabīʿ al-Awwal 1354/June 1935), 58–60.

26 "Ḥawl Fatwā al-Burnayṭa," *al-Fatḥ* 536 (Dhū l-Qaʿda 1355/January 1937), 10–13.

- Although its text is illegible and is not fully readable, it seems this essay shortly refers to different approaches of Ṭanṭāwī Jawharī and Rashīd Riḍā to qurʾanic eloquence.

27 "Niẓām al-ʿĀlam wa-Niẓām al-Duwal," *al-Risāla* 298 (Muḥarram 1358/February 1939), 582–587.

Einstein's theory of relativity

[Naẓariyya Nisbiyya Anshtayn][1]

[Journal's notification]: *This article has been sent for publication by the renowned philosopher, Ṭanṭāwī Jawharī. Although publishing works merely posing a scientific aspect contradicts the magazine's scope, as the topic of the article is interesting and remarkable we have published it. And we ask the respected author not to leave out the authors of this [news]letter from his valuable works.*

Modern-day thinkers believe that the whole universe, including the earth, objects in the sky, solid bodies, plants, and animals are all in motion.[2] Their motion exists in what is called the *athīr* (ether).[3] This ether can be understood through reasoning (*ʿaql*).

The difference between all objects is caused by their motion or oscillation. If these oscillations are up to 22 cycles per second, they are not felt. Once these oscillations reach this frequency they become sonic, and are felt by the ears. The increase in frequency of these oscillations increases the sound tonality until it reaches 22,000 cycles per second, after which no more sound is heard (because the ear cannot hear over 22,000 cycles per second).

When the rate of the oscillations reaches 400 million cycles per second, it transforms into light and is observable by the eyes, with the first being red and the last violet in colour. And after the vibration reaches 600 million[4] cycles per second, it is manifested as air, water, and other types of solid bodies, plants, and animals (depending on the number of oscillations).[5]

Therefore, what we see as creatures (beings) are nothing more than oscillations that depend on the frequency of vibrations and appear in various forms: "And you see the mountains, thinking them rigid, while they will pass as the passing of clouds. [It is] the work of Allah, who perfected all things" (Q 27:88). We comprehensively described this notion in the commentary of *al-Jawāhir* [*fī tafsīr al-Qurʾān al-Karīm*] on *sūrat al-Nūr* and *sūra Maryam*. This theory was not that of Einstein; in reality, he borrowed it from others and built other principles upon it.

Einstein himself said that every object can be identified by three dimensions, which are length, width, and depth, and whoever is aware of that will find another dimension that people neglect, which is time, within which no object is found. As time passes any one thing [e.g. an object], different states appear within or on it, and depending on the difference of time duration [passing over anything], the value, state, and feature of any one thing will change.

We should thus consider what time is. It is a number of vibrations. The most important motions for us are the motions of the Earth, the Sun, and the stars, whereby the Earth rotates around the Sun, the Sun rotates around another star, and that star rotates around others and so on [until the end]. The Earth, therefore, has its own independent and dependent motions, so that, if it stopped for just a moment, all its inhabitants would be destroyed.

When a human sleeps and wakes up, he assumes that he remains in the same place. In reality, by means of these motions he has passed through different locations; this motion in time and space is nothing without "time."

From these [aforementioned] statements, three things become clear:

1 Beings/objects are in relative positions and the main being/object is in "motion".
2 An object/body contains three dimensions, while the forth one is time.
3 What we call "place" is "time-dependent".

There are other issues to which Einstein has referred:

a He says it is impossible to understand the ether except by using precise mathematical calculations, which are only perceived by those who are firm in knowledge/science. And I say it is summed up as follows: each of these stars (is attracted) to another star, as the Earth gravitates around the Sun and the Sun gravitates around another star, and so on and so forth. Bigger bodies have more gravity and absorptive power, according to accurate calculations. Thus, for Einstein, the powers created by these gravitating stars are *very* ethereal [i.e. they *are* ether].

b In this theory, Einstein says that all motions are circular [following the curvature of the earth], which means that if we perceive the Earth to be a revolving planet, all its motions, along with everything around it, are, therefore, also circular.

Thus, the Earth and other planets make circles in their courses. And we, in our course, whether on land or at sea, revolve in the form of a circle. And it is the same for motions around the Earth and in the air (sky) because they are the same as [they follow] the Earth, and the Earth is [a] spherical[ly-shaped globe] from land to sea. It must be understood that the course of the light of both a lamp and the Sun is circular [following the curvature of the Earth], where as we turn on a lamp its light does not pass straight, but like the Earth, it draws a circle; and if it is powerful enough, it returns to the first point from where it started on the Earth, like a passenger (traveller) who travels from a somewhere – his motion is circular until he returns to his first place again.

c The size of this inhabitable world specifies the path based on the course of light; if we minimised the Earth until it became the size of the jewel of a person and minimised other universes like this, then all universes would be 100,000 times bigger than the Earth (in its initial state), and the theory

ends here. This last statement is what I worked out, and it will be possible to explain this theory in a better manner. Thus, the explanation of this theory is relative too.

Ṭanṭāwī Jawharī

Notes

1 Ṭanṭāwī Jawharī, "Naẓariyya Nisbiyya Anshtayn" *Humāyūn* 8 (1935/1314), pp. 13–15. My original translation was edited by Prof. Fathi Saleh. Ṭanṭāwī Jawharī dedicated a short part of the appendix volume to Einstein's account on space and heavens. See Ṭanṭāwī Jawharī, *al-Jawhāhir fī Tafsīr al-Qurʾān (mulḥaq)*, pp.81–82.
2 Einstein stated ""Everything is determined by forces over which we have no control. It is determined for the insect as well as for the star; human beings, vegetables, or cosmic dust . . ." [this note was added by Fathi Saleh].
3 The article includes Einstein's first ideas on when the "ether" was a common concept, which he later refuted [this note was added by Fathi Saleh].
4 This should be 800.
5 "As summarized by the American astronomer Professor Henry Norris Russell, of Princeton, in *Scientific American* on November 29, Einstein's contribution amounts to this: "The central fact which has been proven – and which is of great interest and importance – is that the natural phenomena involving gravitation and inertia (such as the motions of the planets) and the phenomena involving electricity and magnetism (including the motion of light) are not independent of one another"; Hendrik Antoon Lorentz, *The Einstein Theory of Relativity*, new edition [this note was added by Fathi Saleh].

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