Artificial Intelligence on Sunni Islam's Fatwa Issuance in Dubai and Egypt

Sofia Tsourlaki[1]

Abstract

The research examines the role of artificial intelligence (AI) in the issuance and dissemination of fatwas in Sunni Islam today. It offers an overview of the history of fatwas and the radical changes that the discipline has undergone throughout Islamic history. It then proceeds to examine two case studies of AI employment in issuing a fatwa by two important institutions of Sunni Islam: The Islamic Affairs and Charitable Activities Department in Dubai and Al-Azhar Fatwa Global Centre in Cairo. Media presentations and examination of the actual "Virtual Ifta" service are feeding the data for the former and an unstructured interview with two Al-Azhar Fatwa Global Centre employees in Cairo for the latter. The findings demonstrate the competition over religious authority that those two case studies underline and the limitations and dangers of using AI in fatwa issuance. Finally, a survey designed for this research offers insight into the understanding and attitudes of lay Muslims on the matter.

Keywords: Artificial intelligence, shariah, ijtihad, ijma, mufti, al-Azhar.

Introduction

In the late twentieth century, the internet, as a means of disseminating religious knowledge and doctrine, became the latest example of how technology infiltrates and inevitably affects religious experiences, learning and identity (Tsourlaki 2020). At the dawn of the second decade of the twenty-first century, a new technological advancement, that of artificial intelligence (AI), became a tool for authoritative entities in religion to aid them in serving their communities. Although Islam is generally perceived as a tradition-focused religion, where modernity and science are treated with apprehension, if not animosity, reality proves this perception wrong. Since October 2019, AI has been implemented in the issuance of legal opinions (*fatwas*), which constitute an intrinsic part of the Islamic faith. This decision has been announced by two institutions that belong to the Sunni sect of Islam: The Islamic Affairs and Charitable Activities Department in Dubai (IACAD) in October 2019 and Al-Azhar Fatwa Global Centre in Cairo in January 2020.

---

1. PhD Candidate, SOAS University of London. Email: tsourlaki@gmail.com

It should be clarified that there are structural and regulatory differences between Shia and Sunni Islam, in the way *fatwas* are being issued. Mentioning this detail is imperative in deconstructing the common misunderstanding that the practices of mainstream Sunni Islam are the only practices within Islam, which practically erases Shia Islam from many academic publications. However, a detailed analysis of the differences in the issuing fatwas would be a diversion from the main objective of this research and has therefore been consciously avoided. For this research, the topic has been approached as practiced in Sunni Islam solely because both institutions that constitute this research's case studies belong to Sunni Islam.

This paper is an original research article. The research took place between August 2020 and March 2022 and has been constructed with the use of various methodological tools, such as textual analyses, online research, interviews with employees of the Al-Azhar Fatwa Global Centre in Cairo and an online survey. The survey circulated on Facebook between August 2020 and February 2022. It contained six questions with multiple-choice answers and one question that required an answer in the form of an essay. All fifty-five participants answered the multiple-choice questions, and only thirty-nine answered the essay question. The participants' common characteristics were that they identified as Sunni Muslims, employed the English language in their daily communication and used Facebook. Therefore, they were familiar and comfortable with technology.

Artificial Intelligence (AI), *Fatwa*, and *Mufti*

Since the research combines multidisciplinary aspects of knowledge, a definition of the main terms, AI, *mufti* and *fatwa* (plural *fatawa*[2]), is necessary. Artificial intelligence (AI) is understood as "the ability of a digital computer […] to perform tasks commonly associated with intelligent beings […] endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience" (Copeland 2006). Whereas people often associate the term with humanoid robots capable of imitating human movement, speech, and actions, the reality is more straightforward. AI is already part of our everyday lives, as it is applied in our numerous mobile applications and smart devices. It is tacit knowledge that when AI is being mentioned, people tend to think of an advanced artificial entity that is capable of performing intelligent actions. Therefore, when religious institutions announce the involvement of AI in the issuing of *fatwas*, it is implied that they are involving the "intelligent" part of

---

2. The plural form of *fatwa* in the Arabic language is *fatawa*. However, for ease of understanding, the latinized *fatwas* will be employed in this research to refer to the plural of *fatwa*.

AI for this action, which contradicts the current idea that the relaying of *fatwas* requires no intelligence whatsoever. The following sections will analyze the extent to which this is the reality, or whether it is an intentional (or unintentional) misleading detail.

A *fatwa* is a nonbinding advisory legal opinion issued by a Muslim religious scholar called *mufti* on a personal initiative or in response to a question posed by a lay believer (*mustafti*) (Asni 2018). The issuing of a *fatwa* is the practical branch of *Sharia*,[3] with *fiqh*[4] being its theoretical aspect (Masud et al., 1996). Therefore, as being part of *Sharia*, there have been cases where *fatwas* have become binding. For instance, *fatwas* issued by Dar Al- Iftaʾ in Cairo have influenced policies regarding the laws of inheritance, marriage, etc. (Middle East Eye 2020). In other words, *fatwas* are instructions on how Muslims should proceed in their daily life, according to the personal opinion, understanding, and knowledge of a *mufti*, based on information and principles provided by the Qur'an, hadiths and, very often, *fatwas* issued by past scholars. A *fatwa*'s issuance aims primarily to address believers' concerns stemming from community circumstances, and secondarily, to contribute to the development of Islamic law (Dallal, n.d.). Consequently, *fatwas* are particularly useful to Muslims who reside in non-Muslim majority countries, as the societies within which they live present new challenges and require a harmonization of their religious identity with their identity as citizens. As such, a specialist's guidance is needed (Sisler 2011).

A *mufti* is a Muslim scholar trained as a jurist who has the power to issue *fatwas*. Historically, the first *muftis* were the companions of Prophet Muhammad, and they filled the void in the period after the Prophet's death and before hadiths would be recorded. It is estimated that 130 companions served as *muftis* (Al-Qasimi 1986). As the companions died out, the advisory role in the *ummah*[5] was passed to the hands of scholars, and an entire science called *Adab al-mufti* was developed. It set the requirements of character and scholarly knowledge for one to qualify and serve as a *mufti*, as well as the continuous assessment that these individuals were subject to throughout their lifetime by higher religious authorities, ensuring that their *fatwas* would be of the highest quality (Masud et al., 1996). However, such strict assessments have diminished in our days. Two essential elements that contributed to the change of *fatwa*

---

3. *Sharia* is the Islamic law. It differs from the Western notion of law in the sense that it is not limited to penal code but extends to many aspects of a Muslim's daily life, including matters of worship and behavior.
4. "*Fiqh*, (Arabic: 'understanding') Muslim jurisprudence—i.e., the science of ascertaining the precise terms of the *Sharīʿa*, or Islamic law. The collective sources of Muslim jurisprudence are known as *uṣūl al-fiqh*. While *Sharīʿa* is considered divine and immutable, *fiqh*, the human effort to know the *Sharīʿa*, is imperfect and changeable" (Britannica, "fiqh").
5. *Ummah* is the Arabic term describing the community of Muslims, regardless of geographical location or ethnic origin.

issuance are *ijtihad*[6] and *ijma*.[7] Many scholars set independent, informed legal reasoning (*ijtihad*) as a prerequisite for being a *mufti* between the eighth and eleventh centuries[8]. However, by the mid-thirteenth century, this prerequisite ceased to be of importance, and in the fourteenth century, it was even considered undesirable, as it could lead to "immense difficulties *(haraj 'azim)* as well as to a situation in which people will indulge themselves in their own pleasures" (Hallaq 1996). Today, *muftis* are trained in Islamic jurisprudence, and some of them are appointed by states in advisory positions. However, a significant proportion of people who completed the academic training are not officially qualified to be *muftis*.

Increase in the Number of Muslims and Means of *Fatwa* Dissemination

The gradual development of communication, starting from print in the nineteenth century and culminating in social media in the twentieth and twenty-first centuries, has diminished the authority of well-trained *ulama*[9] in various ways. One consequence of that situation is that an "unlimited number of individuals and entities […] claim the right to offer their own interpretations of Islamic sources" (Tsourlaki 2020, 311). This has allowed a dramatic increase in the number of self-proclaimed *muftis*, particularly on TV shows, YouTube channels, and Facebook pages. Most of those individuals take up this role without having undergone *mufti* training or acquired the necessary credentials. Beyond the media, another category of non-trained individuals that arbitrarily issue *fatwas* are *imams*,[10] the designated role in Sunni Islam[11] for leading mosque prayers and serving in worship services like marriage and funerals (Zeidan 2018). It is generally expected that an *imam* will offer spiritual guidance to the local community. However, many *imams* take this loose and abstract notion of "spiritual guidance" to the level of issuing *fatwas*, though they are unqualified for any type of Islamic jurisprudence. This is evident by ten percent of the survey's participants, who

6. "*Ijtihād*, (Arabic: 'effort') […] the independent or original interpretation of problems not precisely covered by the Qurʾān, *Hadith* (traditions concerning the Prophet Muhammad's life and utterances)" (Britannica, "ijtihad").

7. According to Britannica, "*Ijmāʿ*, (Arabic: 'consensus') in Islamic law, the universal and infallible agreement of either the Muslim community as a whole or Muslim scholars in particular" (Britannica, "ijma").

8. Centuries in this paper refer to Gregorian calendar.

9. "*ulamā*, singular *ʿālim, ʿulamāʾ* also spelled *ulema*, the learned of Islam, those who possess the quality of *ʿilm*, 'learning,' in its widest sense. From the *ulamā*, who are versed theoretically and practically in the Muslim sciences, come the religious teachers of the Islamic community—theologians, canon lawyers (*muftis*), judges (*qadis*), professors—and high state religious officials like the *shaykh al-Islām*. In a narrower sense, *ulamā* may refer to a council of learned men holding government appointments in a Muslim state" (Britannica, "ulama").

10. "Imam, Arabic imām ('leader,' 'model'), in a general sense, one who leads Muslim worshippers in prayer" (Britannica, "imam").

11. In Shia Islam, the role of an *imam* has a totally different connotation and value, and the title is usually written with capital "I."

stated that they obtain their *fatwas* from their local *imam*. There is a critical issue regarding the fluidity of Islam's hierarchical structure as it ensues confusion in terms of who is eligible for the performance of certain duties. Combined with the lack of monetarization regarding the issuing of fatwas, and the lack of control over the knowledge that one must have before being able to issue a fatwa, the result is the creation of oftentimes embarrassing or harmful fatwas, as the two examples that follow vividly demonstrate.

An example of a harmful fatwa is evident in the case of the beheading of a French teacher in October 2020. According to the French Minister of Interior, Gerald Darmanin, a *fatwa* against the teacher had been issued by "an activist" (Al Jazeera 2020) or, by other accounts, an "Islamic preacher" (Stickings and Allen 2020). This *fatwa* was circulated in the local community, reaching the eighteen-year-old man who committed the crime. The case mentioned above has not been the only incident of improper *fatwa* issuance. Many more have caused a stir in local communities, while the lay believers have demonstrated various responses, from laughter to social unrest and resistance. One of the most widely known cases is that of Dr. Izzat Atiyya, a lecturer at Al-Azhar University and head of the department of hadith, who in 2007 issued a *fatwa* suggesting that women should breastfeed, at least five times, their male colleagues in order to be able to stay alone with them in the workplace (BBC 2007). Atiya, when forced to retract his fatwa, justified his action by saying that he had "drawn on medieval scholarship" (Reuters 2007), which is a clear indication of blind imitation (*taqlid*), an absence of reasoning, and a detachment from societal circumstances. This incident proves that the lack of restrictions strips the process of reasoning, which is an essential element of jurisprudence. Reasoning is primarily restricted by a *mufti*'s obligation to abide by standardized practices, such as unanimous consensus (*ijma*ʿ). Explicit *ijma*ʿ (*ijma*ʿ *sarih*) becomes a binding teaching of Islam, and any deviation from or contradiction of it is considered an act of apostasy (Abdullah Bin Hamid Ali 2010). Unanimous consensus is inevitably subjective, as it is shaped by the societal context and needs of the time of the scholars that shaped it, which contradicts the notion of individual circumstances of the *mustafti* and the contemporarily of the need for a *fatwa*. The component of *ijma*ʿ solidifies past *fatwas* as absolute and restricts *muftis*' free reasoning.[12]

A prominent example of how *ijma*ʿ jeopardizes the *fatwa* process is that of Ibn Taymiyya (1263-1328). Taqi al-Din Ahmad ibn Taymiyya, one of the most renowned Muslim scholars, was attacked by other Sunni scholars in 1327 and imprisoned for almost a year, for his fatwa that three pronouncements of one-sided divorce (*talaq*) in one call should count as one pronouncement and therefore do not suffice to materialize a divorce (Baugh 2013). His opinion,

---

12. Imam Al-Shafiʿi clearly defines "the legal questions subject to consensus" as one of the elements that one should be familiar with in order to qualify as a *mufti*" (Hallaq 1996, 33).

which he denied retracting by stating that "I cannot conceal knowledge," was entirely based on Sunna and the Qur'an (Bori 2004, 346). It only deviated from the unanimous consensus (*ijma*ʿ), which considered three pronouncements for a divorce valid, irrespectively of whether it was in one sitting or more, and this deviation caused Ibn Taymiyya's imprisonment. *Ijma*ʿ practically forces muftis to rely on and imitate past fatwas and avoid critical thinking and reasoning in a significant volume of fatwas (Al-Harari 1996). This restriction of reasoning can safely be considered one of the elements that allow the infiltration of AI in Islamic jurisprudence.

Case Studies

Dubai's Virtual Iftaʾ

In October 2019, a three-day exhibition was created solely for the launching of "The world's first" AI fatwa service called "Virtual Iftaʾ," by The Islamic Affairs and Charitable Activities Department in Dubai (IACAD) (IACAD & The New Arab 2019). A video was presented at this event, showing the historical development of *fatwa* issuance and distribution throughout the centuries, from face-to-face consultation to *fatwas* distributed through printing, telephone, and the internet, concluding with AI as the latest method of a fatwa-issuance (Gulfnews 2019).

   The service was available in English and Arabic and introduced itself as "the virtual assistant of the Department of Islamic Affairs and Charitable Activities in Dubai" (IACAD 2019).[13] It restricted the range of topics one could request to prayer, *zakat*[14], purity, and worship. If a user chose a topic other than those four, a message informed them that "I'm currently not trained to answer questions related to […]" and automatically returned to the initial stage of the service, showing the four available topics. Before users typed their questions, an automated message informed them that "the answers to your questions are generated automatically using AI technology. Despite taking precautionary measures, errors are always possible. Please contact us in the event of any error." When the user started typing the question, multiple model questions that matched lexically with whatever was typed would pop up. The user should select the one that presented the greatest proximity to their intended question. Once one of the offered questions had been chosen, the system responded with the phrase "I understand you are asking for:" followed by the selected question and then "the *fatwa* for this question is…" followed by a pre-registered *fatwa*. As one can see, AI, in this case, did not reflect on the issue but instead identified

---

13. As of March 2022, the service has been deactivated; therefore, the original source of the quotes in this paragraph can no longer be accessed.

14. Under Islamic law, *zakat* is a compulsory annual payment. It is calculated on certain types of property and is meant to be used for charitable and religious purposes. *Zakat* is one of the Five Pillars of Islam.

and responded with a previously issued fatwa already recorded and stored in its database. The choice of responding fatwa was based on semantic proximity between the question and the chosen fatwa, which the AI calculates based on linguistic relevance (Elhalwany et al., 2015). By March 2022, IACAD's website deactivated *Virtual Ifta'* and the service was no longer available. Given that there is no explanation for this move, it can only be assumed that it happened due to the low number of users who opted for such a service.

Contextualizing the time and circumstances around *Virtual Ifta'*'s launching is crucial to understand the incentives behind it. In 2019, Dubai also announced the opening of Mohammed bin Zayed University of Artificial Intelligence (MBZUAI), which was the first graduate-level university of AI in the world (Fourtané 2019). In the university's announcement video, it was clearly stated that AI cannot replace human intelligence, and that the opposite idea is a misconception (MBZUAI Abu Dhabi 2019). In October 2017, exactly two years before announcing its *Virtual Ifta'* service, United Arab Emirates (UAE) began promoting the remaking of the state's character, focusing almost exclusively on technological advancements. It became the first state in the world to appoint a minister for AI as "a part of the UAE's mission to be at the forefront of the global technological revolution that, among other things, plans to build homes on Mars by 2117" (StartUp Scene 2017). The same year, UAE also launched its *Artificial Intelligence Strategy 2031*, emphasizing AI's financial benefits and its capacity to protect societies from a future crisis (UAEai 2031 2017). As part of this strategy, UAE plans to train five-hundred Emiratis in AI via internship programs and by organizing AI retreats with participants from all over the world (NPAI02 and NPAI03). The official motto of the government's National Program for Artificial Intelligence (NPAI) is "World Leaders in AI by 2031," and the focus of this website is on the financial benefits and improvement of governance via AI (NPAI 2020). An important detail that needs be mentioned is that *Virtual Ifta'* falls under the authority of the IACAD, which belongs to the Department of Endowments and is part of the broader governmental bureaucracy of the country's public services (IACAD and The New Arab 2019).

Therefore, it is evident that UAE's *Virtual Ifta'* service emphasized the *first in the world* aspect of the state's technological advancement. Moreover, a careful examination of the video presented during the launching of the service indicates that the UAE accentuated the element of the distribution of *fatwas*, rather than their issuance. Therefore, one can conclude that the UAE *Virtual Ifta'* scheme is a religious element of the broader range of public services the state aims to digitalize with the employment of AI, as religion falls into its government's wider public service sector. The governmental body responsible for the issuance of *fatwas*, the Emirates Fatwa Council, was approved by the cabinet in 2017 and established in 2018 (Al-Arabiya and The National 2018). Therefore, it is apparent that virtualizing religion is a fraction of UAE's plans to virtualize public services, part of a broader promotion of the state's

technological facelift that began in 2017 and has nothing to do with actual religiosity (Benedikter 2020).

Egypt's Al-Azhar Fatwa Global Centre

Moving on to Egypt's case, I drew information from the official announcement of the AI *fatwa* system and an unstructured private interview[15] with Al-Azhar Fatwa Global Centre employees. On January 1, 2020, less than three months after Dubai's announcement, Al-Azhar Fatwa Global Centre in Cairo launched its own AI Fatwa System (Badrawi 2020). The center emphasizes its global character by offering services in three languages and planning to add more soon (State Information Service 2020). According to the interviewees, the AI service is planned to be available in multiple languages, including but not restricted to Arabic, English, Urdu, and Spanish (Interview, 11:09-11:14). Although the project was announced in January 2019, it is not functioning yet,[16] as people who comprise the "team of special intelligence […] are still collecting data to support the system" (Interview, 19:50-20:50 and 23:50-24:13). Both sources regarding Egypt's case emphasized the purpose of "monitoring abnormal and extremist *fatwas*" while helping "the public to obtain a *fatwa* in an easily accessible manner" (Interview 32:10-32:14 and Badrawi 2020). Despite the delay in the actual application of the scheme, according to the first interviewee, AI is already being employed in Al-Azhar Fatwa Global Centre for many uses, such as collecting personal data (name, language, contact details, and previous *fatwa* requests) and other information extracted from users' previous requests (Interview, 09:16-10:23).

According to the second interviewee, the Egyptian plan is expected to function in three stages. The first stage consists in collecting and examining previously issued *fatwas*, as the approved and legitimate ones will be stored in a special database. Part of the assessment process will include identifying "deviating" *fatwas*. Those will be replaced by a *mufti* appointed by Al-Azhar Fatwa Global Centre, who will produce a "corrective *fatwa*," clarifying the inaccuracies of those that are not following Al-Azhar Fatwa Global Centre's line of thought. The "corrective *fatwa*" will then be stored in the database and made available to users (Interview, 00:15:00-00:19:06). This action aims to ensure that it will not be easy "for other ideas to get to the people and destroy or mislead them with misconceptions," as the established system will "leave no space for wrong ideology" (Interview, 27:15-27:44). In the second stage, those approved and stored *fatwas* will be available for the *mustaftis*, according to the lexical proximity of the users' questions. At this stage, a multiple-choice question such as "Do you mean […]" will be presented to ensure that the *fatwa*

---

15. The interview took place via telecommunication means on September 21, 2020. Due to the sensitivity of the information provided, interviewees requested anonymity.
16. As of March 2022.

fits the purpose. So far, the Egyptian model is designed to function in the exact same manner as the UAE's system did but without restrictions on the topics of a *fatwa*. The third step of the Egyptian model will be a "follow-up process." In this process, a *mufti* will be charged with the responsibility to contact the *mustafti* by employing each user's collected personal details and ensuring that the *fatwa* offered fulfils the needs and answers the questions that led to its request (Interview, 21:50-23:10). In a way, in the Egyptian system, the AI will offer a temporary quick solution until a *mufti* is available to adequately respond to the request (Interview, 26:00-27:14). This function of the *mufti* as a "follow-up" personnel changes the scholar's role and importance. Instead of someone who exercises independent reasoning to offer solutions to contemporary issues, the *mufti* will become a clerk who ensures that pre-approved and pre-stored *fatwas* issued under different circumstances and for a different purpose can act as standardized universal solutions. Many questions are being raised to this plan, such as how often the *fatwas* will be updated and with which societal context in mind.

Although the announcement of AI employment by the Egyptian institution followed that of Dubai, it preceded the idea behind the latter. In 2013, research on the topic was carried out in Egypt by technology experts, based on discussions with scholars in the field of *fatwa* issuance as a problem-solving suggestion for the immense volume of *fatwa* requests Al Azhar received daily (Elhalwany et al., 2015). According to the data provided by Al-Azhar Fatwa Global Centre, the number of *fatwas* requested by the public through telephone or electronic means in 2019 surpassed 677,000, which translates to an average of more than 1,850 *fatwas* per day (Badrawi 2020). The disproportionate volume of requests forced Dar al-Iftaʾ to offer *fatwas* issued by "non-qualified or non-specialized scholars" (Elhalwany et al., 2015, 504). This is a striking example of how demands for *fatwas* made the control of its issuance by an official institution impossible. For that reason, AI was proposed as a solution that would ease the workload and offer approved *fatwas*, the majority of which are older *mufti*-issued decisions that would be simply stored and provided by the system (Elhalwany et al., 2015). However, easing the demand for *fatwa* requests is not the priority of Egypt's employment of the AI system. Instead, the current priority is collecting *fatwas* already available on the internet. Although there would be no restriction on topics similar to Dubai's model, specific themes, such as *jihadism,* will be prioritized.

In Egypt's case, AI's role as a means of offering *fatwas* to the public is only mentioned as a secondary function. The primary function remains the monitoring and controlling of *fatwas* against extremism, terrorism, and any ideology that does not agree with Al-Azhar Fatwa Global Center's intellectual inclinations (Interview 2020 and Badrawi 2020). Regarding the aspect of counterterrorism, given the current political narrative in Egypt that prioritizes it as the number one domestic issue, the promotion of the Egyptian AI system as a form of protection

against extremism is understandable. After all, Al-Azhar Fatwa Global Centre is part of the Egyptian government. Accordingly, affiliation with the perspectives of the governmental ideology does not come as a surprise. However, the erasure of intellectual variety by replacing any *fatwa* that does not agree with the center's mindset, is a form of removing any ideological pluralism within Islam. This is worrying for the future of Muslims globally.

The Question of Religious Authority

At this stage, it is worth looking at the broader picture of competition over religious authority in the Arabic-speaking world. Sunni Islam is non-hierarchical, and as a consequence, there is no notion of authority in its institutions, contrary to the notion of Church in Christianity. Despite the principle of non-authority in Sunni Islam, individuals, institutions, and political entities have attempted to secure authority, or even control, throughout its history. In the mid-twentieth century, there was a competition between Saudi Arabia and Egypt over being the political authority of Muslims. The ideologies of pan-Arabism and pan-Islamism were employed by the Egyptian President Gamal Abdel Nasser and the Saudi King Faisal bin Abdulaziz Al Saud, respectively. This political "Saudi-Egyptian rivalry for the leadership of the Arab world ended with the demise of the Egyptian dream of Pan-Arabism" (Sindi 2018). In the religious forefront, however, the competition between the countries of the Gulf and Egypt continued in the late twentieth century, this time aiming at the spiritual leadership of Sunni Muslims in non-Muslim majority countries, otherwise known as "Muslims of diaspora." Statistics estimate that Muslims in Europe and the USA amount to approximately forty-nine million people (Besheer 2019 and Kettani 2010). The objective of this ongoing competition is who will have the most significant ideological influence on Muslims in the diaspora, and the tool employed in this effort is launching Islamic projects on the internet.

The first such project was IslamOnline.net, launched in 1997 and owned by an organization in Doha, Qatar but administered mainly by Egyptian religious scholars under the supervision of Yusuf Al-Qaradawi. The website offered a database of *fatwas* and online one-to-one video sessions with a *mufti*, both of which increased its popularity. In March 2010, the Qatari owners fired the Egyptian administrators with the justification that they were offering a more "moderate approach to Islamic law" (Sisler 2011, 1145). The administration was transferred to Doha-based personnel, which limited content in the Arabic language and simply maintained the existing content in the English language that was already created before the change (Sisler 2011). A few months before this change in 1999, Saudi Arabia launched its project Fatwa-Online offering fatwas issued by the "Permanent Committee for Islamic Research and Fatwa" of Saudi Arabia and prominent Saudi Arabian scholars solely in English,

apparently aiming at Muslims of the diaspora (Sisler 2011, 1142; Bunt 2003). This competition of authority is an element that should be considered in contextually understanding the power dynamics behind the current employment of AI in *fatwa* issuance by UAE and Egypt.

The facilitation of multiple languages by the Egyptian system, the speed at which the UAE/Dubai system was launched, and the emphasis on technological advancement are indicative of this battle for intellectual hegemony over the Muslims of diaspora and the eagerness of each party to demonstrate its technological advancement. Another detail that should not be overlooked is the 2013 research of Egyptian scientists regarding the employment of AI in the issuing of *fatwas*, during which they held multiple meetings with religious scholars from Al-Azhar. The existence of this research, coupled with the fact that nine years later, the Egyptian system is still in its planning stage, leads to the conclusion that the rushed announcement of Egypt's system only two months after UAE had launched its own, was part of the above-mentioned competition over religious authority in Sunni Islam.

The Position of the Believers

For Muslims of diaspora, online religious services are means of remaining connected with authoritative entities of their religion. Some of them are searching for an authority that will dictate the "real" faith, given the pluralism of theories, sects, and schools within Islam (Sisler 2011, 1141). A *fatwa* is the most direct way of reciprocal communication between a Muslim and a religious authority. Especially for believers living in non-Muslim majority countries, given the lack of institutionalized hierarchy in the Islamic faith, "muftis and their fatwas play a key role key role in the construction of Islamic knowledge [...] they constitute an Islamic discourse which Muslims living in Diaspora use to legitimize behaviours that have already been developed in new social contexts" (Sisler 2007, 206).

An online survey was conducted for this research between August 2020 and February 2021, directed toward English-speaking Muslims. The survey aimed to capture the importance lay believers give to *fatwas*, their means of acquiring a *fatwa* to fulfil their personal needs, and their position on the possibility of *fatwas* that are generated by AI to be readily available on the internet. Given the degree to which Muslims rely on the internet and social media for the construction of their religious identity and for maintaining their ties with authorities of the Islamic faith, it is important to understand the boundaries lay believers put in this interference of technology with their religion.

Based on the survey, 84.5 percent of the participants have used a *fatwa* to decide at some point in their lifetime. More analytically, 45.5 percent stated that they use *fatwas* on a daily, weekly, or monthly basis, 9.1 percent reported that they do so annually, 30.9 percent have only used them a few times in their

lifetime, whereas 14.5 percent have never employed a *fatwa* (Survey, August 2020 - February 2021). These numbers indicate the importance of requesting a *fatwa* as a religious practice in Islam in the life of lay believers. It is not therefore surprising that the concept of *fatwas* has been an essential aspect of Islamic institutions' competition to establish or maintain their religious authority. The attempts to introduce the latest technological advancement in the form of AI in the dominion of *fatwa* issuance can only be seen as a natural development in the long-existing competition between the countries of the Gulf and Egypt mentioned above.

A staggering 54.5 percent of the survey participants stated that they search for a suitable *fatwa* on Islamic websites that serve as repositories, and among them, 41.8 percent apply *fatwas* stored online to their life. This proves that seeking a *fatwa*, online or offline, does not necessarily lead to its actual application. Very often, lay believers simply want to explore the landscape of permissibility in Islam. They do so by reading *fatwas* and considering them as the most updated part of *Sharia*. Additionally, the fact that more than half of the participants use online repositories indicates that they are happy with the idea of AI interfering with *fatwas* in the form of search engines and repositories, and they are happy to follow a *fatwa* created for someone else's needs. This contradicts two main principles of *fatwa* issuance: the element of personalized advice based on a specific situation and the personal relationship between the *mufti* and the *mustafti*. Finally, more than sixteen percent stated that they obtain *fatwas* from their local *imam*. Given the unsuitability of *imams* to serve as *muftis*, this fact indicates that many lay believers do not have a deep knowledge of the exact requirements one should have to be able to produce *fatwas*. Another possible explanation would be that the elements of personal contact, and the subsequent trust built between a worshiper and the leader of the prayer, blur the lines that separate certain functions of the latter in Islam. Out of 29.1 percent of participants who stated that they contact large Islamic institutions to obtain *fatwas*, eleven percent do so by exchanging emails, 5.5 percent use online chats, 5.5 percent prefer text messages, and seven percent communicate via phone call. In the question regarding whom they believe issues the *fatwas* offered via messages/online chatting, 34.5 percent stated they believe it to be senior *muftis*, 41.8 percent indicated junior *muftis*, 12.7 percent pointed to people who lead mosque prayers, and only 10.9 percent believe that computers create the fatwas communicated in those channels.

When asked, "Is it important to know whether the fatwa has been created by a human or a computer?" 92.7 percent responded positively, while 7.3 percent stated that they are not concerned about it. On the aspect of *fatwa* issuance by a computer, 96.3 percent stated that they would not trust a *fatwa* that a computer had issued, with 61.8 percent of those users rejecting such a *fatwa* altogether, as compared to the remaining 34.5 percent which, although doubtful, would still apply it in their lives. As depicted in the survey, this staggering distrust of *fatwas*

generated by computers justifies the short period during which *Virtual Ifta'* remained active. It also explains why there has been no response or even serious attention to the launching of the UAE's service. Given the average person's understanding of the term AI as stated in the introduction of this research, the way the UAE launched its *Virtual Ifta'* project might have led to a misunderstanding of its function as a computer that would imitate human activity of reasoning and producing a *fatwa*. By March 2022, more than two years later, no academic publication has engaged with the project, and the only related media coverage is limited to a few announcements circulated during the launching week. It appears that Muslims either never noticed the service or refused to use it, which is why IACAD decided to end it.

The final question, "Why would you trust or reject a *fatwa* issued by a robot?" required an answer in the form of an essay. Most respondents either clearly stated or implied by the arguments they put forward that they would reject such a *fatwa*. Their arguments focused primarily on people's cognitive abilities such as reasoning, compassion, and thought process, as well as the ability to interpret the sources, comprehend the contextual sophistication, and perform comparative analysis. The need for cultural and societal context was also highlighted in those answers. These findings agree with the conclusion of the 2013 Egyptian research mentioned above, which is that a mistake made by a *mufti* is expected and excused by the lay believers, except if it is too disturbing for the public. However, a much milder mistake made by AI would not be tolerated (Elhalwany et al., 2015). Almost all the answers highlighted the complexity of a situation that entailed the need for a *fatwa*, and the fact that the personal circumstances of the *mustafti* are an intrinsic part of the *fatwa*; an element that, as shown above, does not appear to serve as an obstacle for the forty-two percent of the participants that already obtain *fatwas* from online repositories. This contradiction can be interpreted as a subconscious fear of the unknown of AI's interference with traditional practices within Islam and is reflected in one of the responses that stated, "I will simply reject a fatwa because I won't believe a computer when it comes to my faith" (Survey, August 2020 - February 2021). Knowledge of a *mustafti*'s personal circumstances was mentioned more as a justification for rejecting technology's interference in intrinsic parts of Islamic practice and less as a genuine concern. This exact sentence was put forward as an argument by the two interviewees explaining why AI would never be capable of producing *fatwas*. Accordingly, it is one of those standard clichés generated by scholars and widely employed by lay Muslims without much contemplation.

Some of the survey participants also mentioned the need for transparency in terms of ideological inclinations. As they stated, a *fatwa* issued by a scholar can be assessed and consequently followed or rejected based on the ideological background of that person. In the case of a computer, however, it would have been impossible to know what ideological content has been provided to the

server. One respondent referred to "Shaikh or organisation […] connected to politics and controlled by governments" (Survey, August 2020 - February 2021). This raises some serious questions about Egypt's intention to interfere with the existing body of *fatwas*, permitting or approving certain ones based on whether they comply with the ideas that Egyptian authorities deem as proper. Egypt's plan is designed on the assumption that lay believers will wholeheartedly and unquestionably trust Al-Azhar Fatwa Global Centre's ideological inclinations. The survey, however, shows that some respondents are conscious of this element, and they do consider it when assessing a *fatwa*. It is a matter of time to see whether, if Egypt's plan comes to practice, lay believers will support it or let it fall into oblivion, as it happened with UAE's *Virtual Ifta'*.

Almost thirteen percent of the survey participants that answered this final question stated that they would accept a *fatwa* issued by AI. The answers indicated certain conditions, such as that they could only see it happening in the future and that "revision" of such a *fatwa* by humans would be necessary. One answer stated the following: "It depends on the process behind the fatwa generated and the type of theology/jurisprudence used to train the robotic algorithms" (Survey, August 2020 - February 2021). In a similar tone, another answer stated, "I would have to know more about the formula, logic, and coding the computer/robot would be applying. This is certainly a very interesting idea. Perhaps data and predictive analytics can result in good *fiqh* and good *fatwa*" (Survey, August 2020 - February 2021). Yet another person reported that they *"would trust the robot if it was programmed by collective *fatwas* of an authorised *scholar/imam*"* (Survey, August 2020 - February 2021). Although constituting a minority, those responses should not be considered as insignificant, as they contain elements that deserve consideration.

To begin with, the language indicates that the respondents have an advanced level of knowledge in robotics/information technology. Such respondents, whose knowledge of AI permits them to overcome the instinctive fear the wider population has towards this concept, find the idea interesting and deem it possible for a machine to perform a human thought process. In other words, in the understanding of a technological expert, the possibility of AI adequately replacing humans is real. The contradictions other participants demonstrated when they would state theoretical arguments against AI, while declaring that in practice they were comfortable using *fatwas* found on the internet, strengthens the view of the element of fear of the unknown. In other words, most lay believers have "memorized" and are comfortable repeating the necessary preconditions required in the issuance of a fatwa in the form of cliché when they feel the need to defend the traditional means of *fatwa* issuance. Still, they are not particularly concerned about whether these preconditions are applied in practice. The idea of AI assuming an active role in the realm of religion inspires fear and resentment in people who are not fully familiar with this concept and cannot perceive a religious reality as different from the one they have learned

about and experienced so far.

The survey was designed to discover the importance of *fatwa* in the lives of lay believers, the channels through which *fatwas* are requested and the opinion of lay believers on the employment of AI in this process. Surprisingly, a majority appeared to feel very comfortable "shopping" *fatwas* online without directly interacting with a *mufti* and, therefore, without having the ability to validate the *fatwa* based on the criteria they stated as necessary in the essay question. Responses also demonstrate the gap between authoritative entities in Islam and lay believers. Whereas institutions such as the IACAD in Dubai and Al-Azhar Fatwa Global Centre in Cairo invest money and time into setting a high-tech version of Islam, the survey answers show that lay believers are not willing to receive or use *fatwas* generated by AI. The fact that IACAD ended the function of its *Virtual Iftaʾ* service less than two years after its launching confirms the validity of the surveys' data and conclusions. It would be very interesting to have data on the number of lay believers intending to use the two institutions' services. However, this was impossible. I contacted IACAD via email, requesting available data regarding the system's popularity and the number of users, but IACAD never responded. Similarly, Al-Azhar Fatwa Global Center's project is still, in March 2022, in the stage of designing the service; therefore, no data is available.

Conclusion

It is evident that the involvement of AI in *fatwas*, as the next step of technology's incorporation in the faith as experienced today, has neither an actual religious connotation, nor widespread acceptance among the lay believers. Contrary to the importance given to AI during the launching of the IACAD's system, the accurate description of its actual role is that it simply identified lexical proximity between a question typed by users and a set of models, each related to a pre-registered *fatwa*. Essentially, IACAD imitated what internet browsing machines have been doing since the late twentieth century. Given the fact that beyond the news-media coverage of the system's launching, there have been no other references on the matter in media or academic publications, and the short period for which it functioned, one can safely conclude that the system did not gain any significance, let alone popularity, among Muslims. Both case studies examined in this paper appear to promote their employment of AI in systems regarding *fatwas* as a propaganda tool in the broader framework of re-shaping the identity of competitive states and as one more element in their everlasting competition for religious authority. Additionally, technological advancement combined with religion is a means of the two countries to claim progress and development, enhancing their political establishments' credibility, at least domestically. It is therefore safe to conclude that currently, the employment

of AI in *fatwa* issuance is used as a marketing tool, having no role whatsoever to play in the actual issuance of *fatwas*.

Muslims should focus on the power that institutions secure by establishing themselves as the sources of "correct" *fatwas*. Beyond the UAE and Egypt's apparent competition for authority, there is a broader ideological competition of dogmas among Muslims. By employing AI to monitor and control the *fatwas* disseminated worldwide, religious institutions and the political powers behind them might be able to control religion to the utmost level, unprecedented in the history of the Islamic faith. The beliefs and reasoning of only one school of thought (*madhhab*) within Islamic jurisprudence (*fiqh*) and the societal circumstances of only one country may dictate the lifestyle and obligations of every Sunni Muslim worldwide. Standardization of *fatwas*, the logical development after the standardization of sermons (*khutbas*) delivered in Mosques, which is already implemented in many Muslim majority countries, will signify an absolute lack of independence, and will erase religious pluralism within Sunni Islam (Tsourlaki 2020). This is an alarming possibility that needs to be adequately understood and evaluated. Accordingly, it is safe to conclude that, although there is no sign of actual interference of the AI into the religion in terms of altering, enhancing, or damaging the spiritual or sociological aspect of Islam, the danger of these actions happening by authoritative institutions is evident. In other words, it is not that the machines will overtake religion, but that the people who program/control those machines will be able to eliminate any voices that differ from their ideological inclinations.

Finally, an essential element that surfaced during this research and should not be overlooked is that the use of AI in the issuance of *fatwas*, even for political purposes, exposes the weaknesses of the role of *muftis* today. As this article showed, the function of a *mufti* has changed throughout the history of Islam. From well-trained scholars who used a wide range of knowledge and skills like independent reasoning from the seventh to the third century they changed to individuals who imitate their past colleagues' rationale and decisions from the fourteenth to the twentieth century. Finally, they became clerks who administer a pool of stored *fatwas* in the twenty-first century's Sunni Islam, as the application of AI explicitly reveals. This is something both lay believers and Muslim scholars should consider and work to improve.

References

Al Arabiya. "UAE Launches Fatwa Council." *Al Arabiya*. May 13, 2017. https://english.alarabiya.net/en/News/middle-east/2017/05/31/UAE-fatwa-council-approved-during-Cabinet-meeting.html (accessed September 13, 2020).

Al Jazeera. 'France: Suspects behind beheading called for teacher's death." *Al Jazeera*. October 19, 2020. Available at: https://www.aljazeera.com/news/2020/10/19/fatwa-launched-against-beheaded-teacher-french-minister (accessed October 23, 2020).

Al-Harari, Abdullah. 1996. *Al-Maqalat al-saniya fi kashf dalalat Ahmad b. Taymiyya*. Beirut: Dar al-Mashari.

Al-Qasimi, Jamal al-Din. 1986. *Al-Fatwa fi l-Islam*. Beirut: Dar al-Kutub al-ʿIlmiyya.

Asni, Fathullah. 2018. "Analysis of the Concept of Fatwa Uniformity according Mura'ah Al-Khilaf Method." *International Journal of Academic Research in Business and Social Sciences* 8, no.7: 156-64.

Badrawi, Ahmad. "Al Azhar li-l-fatwa tastahdith wahda li-l-dhukaʾ al-sinaʿi wa-tasnifiha." *Shorouknews*. January 1, 2020. https://www.shorouknews.com/news/view.aspx?cdate=01012020&id=6b0b2d71-38df-4824-849a-b48fec051fe5 (accessed October 15, 2020).

Baugh, Carolyn. 2013. "Ibn Taymiyya's Feminism? Imprisonment and the Divorce Fatwā's." In *Muslima Theology: The Voices of Muslim Women Theologians*, edited by Ednan Aslan, Marcia Hermansen, and Elif Medeni, 181–96. Frankfurt: Peter Lang

BBC. "Breastfeeding fatwa causes stir." *BBC*. May 22, 2007. http://news.bbc.co.uk/1/hi/world/middle_east/6681511.stm (accessed September 1, 2020).

Benedikter, Roland. 2020. "The dawn of digitized religion: A new business model—or more?" *Challenge* 63, no. 3: 165-76. DOI: 10.1080/05775132.2020.1747727

Bin Hamid Ali, Abdullah. 2010. "Scholarly consensus: Ijmaʿ: between use and misuse." *Journal of Islamic Law and Culture* 12, no. 2: 92-113.

Bori, Caterina. 2004. "A New Source for the Biography of ibn Taymiyya." in *Bulletin of the School of Oriental and African Studies* 67, no. 3: 321-48.

Britannica. "Fiqh." 2020. https://www.britannica.com/topic/fiqh (accessed October 20, 2020).

Britannica. "Ijma." 2020. https://www.britannica.com/topic/ijma (accessed October 20, 2020).

Britannica. "Ijtihad." 2020. https://www.britannica.com/topic/ijtihad (accessed October 20, 2020).

Britannica. "Imam." 2020. https://www.britannica.com/topic/imam (accessed October 20, 2020).

Britannica. "Ulama." 2020. https://www.britannica.com/topic/ulama (accessed October 20, 2020).

Bunt, Gary. 2003. *Islam in the Digital Age: E-jihad, Online Fatwas and Cyber Islamic Environments*. London: Pluto.

Copeland, Jack. "Artificial Intelligence." *Britannica*. June 15, 2006. https://www.britannica.com/technology/artificial-intelligence (accessed September 28, 2020).

Cruz, Araceli. "The Vatican's $129 'Smart' Rosary Is a Fitness Tracker for Your Soul." *One Zero*. December 19, 2019. https://onezero.medium.com/the-vaticans-129-smart-rosary-is-a-fitness-tracker-for-your-soul-315cf48ab9a5 (accessed July 30, 2020).

Dallal, A. "Modern usage." *Oxford Islamic Studies*. n.d. http://www.oxfordislamicstudies.com/article/opr/t236/e0243#e0243-s2 (accessed July 28, 2020).

Elhalwany, Islam, Ammar Mohammed, Khaled Wassif, and Hesham Hefny. 2015. "Using textual case-based reasoning in intelligent fatawa QA system." *The International Arab Journal of Information Technology* 12. no. 5: 503-509.

Fourtané, Susan. "World's First University of Artificial Intelligence Opens in 2020." *Interesting Engineering*. October 23, 2019. https://interestingengineering.com/worlds-first-university-of-artificial-intelligence-opens-in-2020 (accessed September 13, 2020).

Gulfnews. "Dubai Launches 'World's First' Artificial Intelligence Fatwa Service." *Gulfnews*. October 29, 2019. Available at: https://gulfnews.com/uae/dubai-launches-worlds-first-artificial-intelligence-fatwa-service-1.67466584 (accessed September 13, 2020).

Hallaq, Wael. 1996. "Iftaʾ and Ijtihad." In *Islamic Legal Interpretation. Muftis and their Fatwas*, edited by Muhammad Khalid Masud, Brinkley Messick, and D. S. Powers, 33-43. Cambridge, Mass.: Harvard University Press.

IACAD. "About IACAD | Mission and Vision." *IACAD*. n.d. https://www.iacad.gov.ae/en/AboutUs/History/Pages/default.aspx (accessed September 12, 2020).

Jordan, David A. 2003. "The dark ages of Islam: Ijtihad, apostasy, and human rights in contemporary Islamic jurisprudence." *Washington and Lee Race and Ethnic Ancestry Law Journal*, no. 9: 55–72.

Kettani, Houssain. 2010. "|Muslim population in Europe: 1950–2020." *International Journal of Environmental Science and Development* 1, no. 2: 154-64.

Masud, Muhammad Khalid, Brinkley Messick, and D. S. Powers. 1996. *Islamic legal interpretation: Muftis and their fatwas*. Cambridge, Mass.: Harvard University Press.

MBZUAI Abu Dhabi. "The Launch of Mohamed bin Zayed University of Artificial Intelligence." October 16, 2019. https://www.youtube.com/watch?time_continue=98&v=ccrbvLG4JYw&feature=emb_logo (accessed September 13, 2020).

Middle East Eyes. "Is al-Azhar under attack?" *Facebook*. October 15, 2020. https://www.facebook.com/MiddleEastEye/videos/1363127544034576.

Mohamed, Besheer. "New estimates show U.S. Muslim population continues to grow." *Pew Research Centre*. January 3, 2018. https://www.pewresearch.org/fact-tank/2018/01/03/new-estimates-show-u-s-muslim-population-continues-to-grow. (accessed October 12, 2020).

NPAI01, National Program for Artificial Intelligence. "About Us." 2020. https://ai.gov.ae/about-us/ (accessed September 2, 2020).

NPAI02, National Program for Artificial Intelligence. "Mohammed bin Rashid attends A.I. Retreat." 2020. https://ai.gov.ae/mohammed-bin-rashid-attends-ai-retreat/ (accessed September 2, 2020).

NPAI03, National Program for Artificial Intelligence. "Strategic A.I. Initiatives." 2020. https://ai.gov.ae/uae-ai-initiatives/ (accessed September 2, 2020).

Reuters. "Lecturer suspended after breastfeeding fatwa." *Reuters*. May 21, 2007. https://uk.reuters.com/article/worldNews/idUKL2173061220070521 (accessed September 1, 2020).

Sindi, Abdullah. 2018. "King Faisal and Pan-Islamism." In *King Faisal and The Modernisation of Saudi Arabia*, edited by Willard Beling, 184-201. New York: Routledge.

Sisler, Vit. 2007. "The internet and the construction of Islamic knowledge in Europe." *Masaryk University Journal of Law and technology* 1, no. 2: 205-18.

Sisler, Vit. 2011. "Cyber counsellors." *Information, Communication & Society* 14, no. 8: 1136-59. DOI: 10.1080/1369118X.2011.579140

StartUp Scene. "The World's First Minister for Artificial Intelligence was Just Appointed- in the UAE." *StartUp Scene.* October 21, 2017. https://thestartupscene.me/FUTURE/The-World-s-first-Minister-for-Artificial-Intelligence-Was-Just-Appointed-In-the-UAE (accessed September 9, 2020).

State Information Service. "Al-Azhar Fatwa Global Centre to offer live service in 3 foreign languages." *State Information Service*. 2020. https://www.sis.gov.eg/Story/143253/Al-Azhar-Fatwa-Global-Center-to-offer-live-service-in-3-foreign-languages?lang=en-us (accessed March 17, 2021).

Stickings, Tim and Peter Allen. "Throw your gun! Get on the ground!' Footage shows fatal showdown between police and Paris Islamist after he beheaded a teacher "because fathers issued fatwa" for showing Mohammed cartoon to their children." *Daily Mail*. October 19, 2020. https://www.dailymail.co.uk/news/article-8854411/Beheaded-French-teacher-fatwa-launched-against-him.html (accessed October 21, 2020).

The National. "UAE Cabinet Forms Emirates Fatwa Council." *The National,* June 24, 2018. Available at: https://www.thenational.ae/uae/government/uae-cabinet-forms-emirates-fatwa-council-1.743799 (accessed October 2, 2020).

The New Arab. "Virtual Mufti: Dubai Launches "First Ever" Artificial Intelligence-Powered Fatwa Service." *The New Arab,* October 31, 2019. https://english.alaraby.co.uk/english/news/2019/10/31/dubai-launches-first-ever-artificial-intelligence-powered-fatwa-service (accessed October 12, 2020).

Tsourlaki, Sofia. "The importance of Fatwa in a believer's life." *Surveyplanet*. August 2020 -February 2021. https://s.surveyplanet.com/dlFI-cTwaS?fbclid=IwAR25FJFfv9NVcPI7QbDvZopxSyX6soHXVits4swmAfqZI_Oe QAaLqGkuwjo (accessed February 25, 2021).

Tsourlaki, Sofia. 2020. "How is A.I. employed in Al-Azhar Fatwa Global Centre." Private Interview.

Tsourlaki, Sofia. 2020. "Khaled Abou El Fadl and Amina Wadud's (re) politicization of the mosque and employment of social media as a means of shaping religious identity based on values of progressive Islam. *Contemporary Islam*, no. 14: 309-29. doi.org/10.1007/s11562-020-00453-z

Tsourlaki, Sofia. 2020. "The importance of Fatwa in a believer's life." Survey, August 2020 - February 2021.

UAEai 2031. "UAE Artificial Intelligence Strategy 2031." *YouTube*. October 16, 2017. https://www.youtube.com/watch?v=6P-5PkzC2ZI&feature=emb_title (accessed October 15, 2020).

Zeidan, Adam. "Imam." *Encyclopaedia Britannica*. 2018. https://www.britannica.com/topic/imam (accessed October 2, 2020).