EARLY MUSLIM PRINTING: A STUDY OF EARLY MUSLIM EXPERIENCE/S WITH THE PRINTING PRESS FROM 1700-1900

by

BRYAN S. AYERS

(Under the Direction of Alan Godlas)

ABSTRACT

The adoption of the typographic printing press in Arabic script by Muslims took place in Istanbul in 1725. While the Christian and Jewish communities in Istanbul were utilizing the typographic press to print religious texts for 200 years, the Ottoman Muslim community was not allowed to print religious texts in Arabic script until after 1800. Measuring the timing of early Muslim printing against the Protestant Reformation, Islam has been characterized as "a barrier to printing" by some scholars. Narratives of conservative "Islam" which stands against "progress" are often invoked. My research shows these previous characterizations to be erroneous oversimplifications. In fact, there were many concurrent forces that shaped the story of early Muslim printing: European colonial expeditions into Muslim countries, Islamic values and book aesthetics, and the invention of lithographic printing techniques in 1795. I argue that early Muslim printing was a uniquely Islamic "information revolution," one of many in the broader continuum of Islamic history.

INDEX WORDS: Islam, Printing Press, Colonialism, Lithography, Typography.

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PREFACE

The popular and scholarly opinion that Islam, because of its inherent conservatism, resists technological advancement is a modern myth based in part on another myth: that Islam monolithically resisted the revolution of printing technology.

In chapter one, I discuss the modern Western myths of conservative Islamic resistance to technology in general and to printing in particular, noting that the consequence of laboring under these monolithic myths will be a blindness to understanding the diversity of Islamic responses to other information revolutions such as the internet.

In chapter two, I define what I mean by an information revolution and how it applies to the subject of book printing. In surveying various information revolutions in Islamic history, I discuss the revolutionary move from oral tradition to writing of the ḥadīth, the revolution in moving from the purely consonantal Qur'ān to the voweled Qur'ān, as well as the Muslim contribution to the revolution of paper making. In taking account of these revolutions and other instances of Muslim printing that predated the revolution of the printing press, it is clear that information revolutions in the Islamic world have a long history and that Muslims have not simply resisted them but have evaluated their potential and embraced them, responding in distinctly "Islamic" ways. Consequently, information revolutions in the Muslim world must be studied not only as historical and technological concerns but also as religious matters.

Briefly looking back, I present the Muslim contribution to the process of paper making. Paper making was passed through Islamic lands in the mid-8th century from China. This early information revolution was quickly embraced by the Abassid Caliphate[1], seen as a "secure technology" for record keeping. Papyrus records could be scratched and modified with little trace--paper addressed this important problem. An historian of Islamic Art observed that without abundant paper the Gutenberg press would have been of little use. I use the case of paper to support my assertion that information revolutions have a long history and that Islamic societies quickly evaluated and embraced this revolution, contradicting the charge of an "inherent" conservatism in Islam. I will also present other instances of Muslim printing that pre-dated the press. Again, the point of this chapter is to lay some groundwork for my argument that the response to typographic print relies on modern historical factors as much as religious factors, while Orientalist narratives privilege religious explanations. There have been a number of information revolutions in the Islamic world to which Muslims have responded in distinctly "Islamic" ways. Identifying what factors can be called "Islamic" in the responses to technologies helps to re-write narratives. In short, we can evaluate the role of religion in the complex of political, economic, and technological factors.[2]

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1. The Abbasid Caliphate ruled the Islamic Empire from Baghdad, c. 750-1250.
2. By technological factors, I am referring to the different types of printing that were available to Muslim societies early in Muslim printing history: typographic printing and lithographic printing. [1] Typography: the design, or selection, of letter forms to be organized into words and sentences to be disposed in blocks of type as printing upon a page. [2] Lithography: planographic printing process that makes use of the immiscibility of grease and water. *Encyclopaedia Britanica*, Online premium service, 2004, s.v. 'typography' and 'lithography.'

In chapter three, I start by relating the experiences of Muslims with typography exported from Europe. Early versions of the Qur'ān were printed on the typographic press. What were these religious texts like? Did they impact the Ottoman perspective on typography and religious texts? In order to understand a typographic Qur'ān we must explore Muslim views of the Qur'ān. Relying heavily on the theory of William Graham, I introduce his analysis of the Muslim idea of "scripture." His analysis informs this work and identifies uniquely Muslim perspectives on scripture, which I argue contribute to the early Muslim experiences with printing--experiences that did not mirror those of Europe. This chapter identifies what "Islamic" values shaped early Muslim experiences with printing.

In chapter four, I examine the expressly modern factors that must be considered in the Muslim experiences with typographic printing and, later, lithography. Lithography reinforces the argument that cultural values surrounding "the book" factor heavily in early Muslim printing. With lithographic printing, printed books were more pleasing aesthetically and consistent with Muslim conceptions of religious books. After the invention of lithography, there was not a repeat of the Ottoman aversion to European Qur'āns in the 16th century. Muslim experiences with printing in this chapter include Ottoman Turkey, Morocco, Egypt, and Muslim India. And, I conclude this chapter with a study of Fawzi 'abd al Razzak's historiographical model of Muslim printing.

Ultimately in this thesis I illuminate little known aspects of the history of Muslim printing, which thus far has not received the scholarly attention they deserve. In so doing, I highlight the interplay of culture, religion, and technology, showing similarities between the different Muslim experiences in assimilating the typographic and lithographic presses into

religious life. Clearly identifying these forces and patterns will improve our understanding of how Islamic societies manage an information revolution and, although historical circumstances have changed, will shed light on the treatment of the Internet in contemporary Muslim societies.

CHAPTER 1

THE MYTH OF MONOLITHIC CONSERVATIVE ISLAMIC RESISTANCE TO TECHNOLOGY

Statement of the Problem

In September 1999, the Religion Newswriters Association compiled a "Top Ten Religion Stories of the Millennium" as part of the hype leading up to January 2000. Protestants pulled in the gold and silver as Martin Luther's 1517 Reformation won the number one slot and Gutenberg's invention of printing with moveable type won number two.[3] The Vatican may take issue with this poll, but the point is clear: the association of the printing press and the Protestant Reformation is not a forgotten issue.

In Protestant Christianity, the story of the printing press and the religious reformation is an interesting one. And, from the Protestant perspective, the ending was a happy one: Bibles were translated out of learned Latin and into vernacular languages understood popularly: a popular, early story of technology being incorporated into religious life and fueling profound religious change.

One may then ask, as I did at the beginning of this project, how did the moveable type printing press react with Islamic societies? What changes did this revolution-fueling technology facilitate within Islam?

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3. http://www.beliefnet.com/story/2/story_258_1.html -- American Religion reporters were polled to gather this list.

A cursory dip into non-specialist literature paints a much different picture than the Christian example. Islam was not turned upside down, an Empire ripped in two, institutions of authority flattened, and every good Muslim was not reading a "poor man's Qurʾān" after Gutenberg's technology first arrived in the Ottoman capital of Istanbul in 1495.[4] That was not what happened historically. And, one would do well, upon first glance, to find much of a story at all. It would appear--in the non-specialist literature--that Muslims saw this new technology, panicked after hearing what it did to the Catholic Church, and issued a religious-legal opinion (*fatwa*) denouncing the technology. There are just a few sentences explaining that "Islam is a barrier to printing" [5] or other, numerous, variations on that trope. The popular portrayal is that "Islam" somehow was antithetical to printing technology out of an inherent conservatism.

I have found this idea echoed in college Middle Eastern history classes,[6] web sites of varying levels of repute, and, most recently, in a *Wall Street Journal* article.[7] It is a "story" that is referenced unquestioningly. A good friend of mine, who majored in history, laughed when I described my project to him and said that Muslim printing received a sentence, maybe two. The message: Muslim printing was late and it was "Islam's" fault.

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4. This date is widely accepted. See Klaus Kreiser, *Beginnings of Printing in the Near and Middle East: Jews, Christians, and Muslims* (Wiesbaden: Harrassowitz Verlag, 2001), 9.
5. Thomas Carter devotes an entire chapter this portrayal in his *The Invention of Printing in China* (New York: Columbia University Press, 1925).
6. Much of this evidence is anecdotal but abundant, to my surprise even. While searching the web, I have seen this idea on syllabi and study sheets. Also, I have heard it from friends of mine who have studied history in college. See http://www.punsterproductions.com/~sciencehistory/hist401study3.htm; and, http://zindamagazine.com/html/arcives/2001/05.02.01/index.php
7. Waldman and Pope, "War on Terrorism is against Muslims," *The Wall Street Journal*, September 21, 2001.

There are a few historical moments to which people point when telling the story of early Muslim printing. There is the backstory of the Protestant Reformation: in 1455, Gutenberg's moveable type press allowed for the mass production of Latin Bibles and, later, vernacular translations of the Bible.[8] Martin Luther's 1517 posting of the 95 Theses often cited as a pivotal movement which made use of the moveable type press in the Protestant Reformation. After their expulsion from Spain in the Reconquista of Ferdinand and Isabella around 1492, Sephardic Jews brought moveable type printing presses for Hebrew printing to Istanbul. Around roughly the same time as the Jewish migration to the Ottoman Empire, Armenian Christians establish Armenian language print shops. The Shaykh al-Islam issued a fatwa in 1508 stating that moveable type printing was permissible for these non-Muslim communities, but not for Muslims of the Empire.[9] Years later, in 1708, a *fatwa* was obtained by an Ottoman Muslim Ibrahim Muteferrika to establish a moveable type printing press in Istanbul. The fatwa allowed the printing of non-religious texts, but upheld the prohibition against religious printing.[10]

Simply looking at these dates, in a sea of interpretive silence, one might logically conclude that, indeed, Islam is antithetical to printing. There is a fatwa from the Shaykh al-Islam himself that prohibits printing of religious texts. That appears quite antithetical to printing. However, that conclusion relies on the omission of a great deal of counter-evidence

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8. See Elizabeth Eisenstein, *The Printing Revolution in Early Modern Europe* (New York: Cambridge University Press, 1983).
9. Fawzi Abd al-Razzak, *The Kingdom of the Book: The History of Printing as an Ahent of Change in Morocco Between 1865 and 1912*, PhD Dissertation (Boston: Boston University, 1990), 224.
10. Ibid., 222.

from Islamic history and, I argue, referencing Orientalist narratives[11] about Islam that are born out of the modern, colonial relationship between the Ottoman Empire (and, later, many other Muslim countries) and Europe. In this thesis, I set out to overturn the oversimplified retelling of the early Muslim experience with printing and situate it within the context of Islamic history, rather than using the Protestant Reformation as a historical measuring stick.

The Question of Significance

What is the importance of gathering a complete picture of the early Muslim experience with printing? First, the story has been profoundly misunderstood both by contemporary Muslims and non-Muslim scholars. Interestingly, I have read contemporary accounts of Muslim community leaders[12] encouraging young Muslims to embrace technology and use it for good, unlike "our brothers from the Ottoman days" when they turned their backs on the printing press. For some Muslims, it is an embarrassing story. And, for Muslims like this English engineer, it is a historical moment to learn from.[13]

A number of European and American scholars have pointed to the early Muslim experience with printing as yet another historical incident of conservative Islam resisting change. The Ottoman *fatwas* are always invoked as "hard" historical evidence, while the genre

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11. Borrowing from Edward Said, *Orientalism* (New York: Vintage Books, 1978), 2. "Orientalist narratives" borrow from "a style of thought based upon an ontological and epistemological distinction made between 'the Orient' and (most of the time) 'the Occident.'"
12. See http://www.imam-alasr.com/conference/conf2002_Speech1.asp-- An article published online by an English engineer. The article was the text of a lecture given to a Muslim Student Organization.
13. Mustafa Kemal referred to "3 centuries of observation and hesitation" referencing the Ottoman decision not to print in a 1925 speech opening the Ankara Law School. Quoted from Bernard Lewis, 1968, 274.

of written *fatwas* is not a clear matter.[14] The rest is Orientalist narrative. Living as we are in a post-colonial world, in which 95% of all Muslim nations are former European colonies, many Muslims and non-Muslims accept these Orientalist narratives as a matter of fact. The network of power and history by which we inherited these narratives is a subject of another study. My concern here is to illustrate that these narratives are not merely anti-Muslim polemic; rather, they affect and are invoked by Muslims and non-Muslims alike with good and bad intentions. Because the narrative is being invoked by different parties and for different reasons, it is important to dig deeper and understand what exactly the early Muslim experience with printing was.

The question itself: 'What was the early Muslim experience with the printing press?' is one born out of the Protestant Reformation in Europe and early Orientalist observations. When we approach Muslim societies asking this question, it is because the technology so profoundly changed Christian Europe that we want to know what Islam made of it. We bring to the question a degree of political baggage-- as students reliant on Orientalist translations and educated in an economically powerful country. For example: the question "What was a Theravadan Buddhist experience with the printing press?" has a much different ring. There is both a political charge to the question when directed at Islam and there are a number of myths from which one may extrapolate a response to the question. Many more Americans and Europeans, anecdotally, feel they could wager a guess about the Muslim press, invoking

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14. See Brinkley Messick, *The Calligraphic State* (Los Angeles: University of California Press, 1993). Messick discusses that these collections often capture a snap-shot of inter-Mufti debate and politics not an a-political picture of normative Islam.

Orientalist narratives, with the more sophisticated citing the hadith (Saying of the Prophet Muhammad) regarding "innovation" and images of Wahhabi[15] media spectacles of the past two or three decades.

The idea or narrative of Western superiority speaks directly to this question. I do not condemn the fact that the question is born out of the Protestant experience with the printing press. Comparative religious analysis is a fruitful starting point to exploring how religious traditions and communities are similar and different. Given the power relations between Muslim countries, European countries, and America, I think this comparative analysis requires more training and honesty. Privileging the external, the visible, one may assume that culturally all things are equal--Europe embraced the press, the Ottomans did not... end of discussion. Two alternatives exist, I have found, regarding this question: accept the narratives or invest significant time researching. Technologies are interpretted socially and are not universally useful. If the technology does not solve a perceived problem, then it will not be embraced. Technology and religion are two "black boxes" that I want to deconstruct and nuance.

Because the question itself arises out of Protestant history, I think it is important to look beyond these commonly accepted but dubious narratives in order to answer the question and to counter-act the colonial narrative of Western superiority. There are external facts that support the argument that Islam is conservative or against technological innovation. I am

15. I am using the term loosely here to refer to Islamic reform movements based on or inspired by the teachings of the 18th century Islamic scholar Muhammad ibn ʿabd al-Wahhab.

open to the idea that the Shaykh al Islam felt the press was *kafir* (Ar. denier)[16] technology. But, I think when a more thorough historical, religious, and technological analysis is brought to bear on the problem, we can move past the pre-packaged narratives. To sum up, because the the question invites Orientalist explanation, it is important to research a thorough and balanced response to the question in order to understand this historical moment for the sake of re-writing our narratives.

Re-examing and re-writing these narratives is a worthwhile project. A by-product of answering this question thoroughly is to increase our understanding of "Islam."[17] I have looked at the question drawing from several Muslim communities--Morocco, Egypt, Ottoman Turkey, and Muslim India. Using this comparative method calls into question the idea of one "Muslim response" to print technology. It is not surprising to scholars that there are different Islamic implementations of printing technology which are dictated by a number of cultural and historical factors. So, it is useful to see that there is no one "Islamic" response. However, there are some Islamic values that can be extracted from looking at these histories comparatively. Uncovering these aesthetic and religious values helps to illustrate the point that technology is adopted in order to solve a perceived problem and early print technology in the Ottoman Empire (from which the popularly accepted narrative is extracted) did not solve such a problem.

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16. I have provided the literal Arabic translation. The word is often politicized in contemporary usage, translated as "infidel," "non-believer." In contemporary polemics, it often takes on the meaning "non-Muslim."
17. I use quotation marks for a few important reasons. Calling into question the idea of a monolithic Islam involves asking the question: What is Islam and Islamic? It is an important starting point as "Islam," as a category, is invoked to justify competing political agendas in contemporary politics.

A final matter of significance relates to the Infomation Revolution that a number of countries find themselves in: the adoption of Internet technologies. Understanding how Islam has embraced technologies in the past will help us to understand and analyze how Islamic values might embrace Internet technologies. Granted, the issues and historical circumstances are much different, as are the technological issues. But, if we cannot see the history of early Muslim printing clearly, then how are we to make sense of Islam and its representation on the Internet? This analysis of early Muslim printing is a part of this larger project to understand Islam and its information revolutions.

CHAPTER 2

BOOK PRINTING IN ISLAMIC LANDS: ONE OF MANY INFORMATION REVOLUTIONS IN HISTORY

The printing of books in Islamic lands started very early within non-Muslim communities of the Ottoman Empire.[18] Jewish exiles from Spain arriving in the Ottoman Empire were embraced and quickly set up Hebrew language print shops in Istanbul and throughout the Empire. Armenian Christians also received permission from the Sultan to print books, religious and secular. Earlier in Europe, Gutenberg's typographic (i.e., moveable type) printing press[19] facilitated an information revolution as well as a religious revolution. In Islamic lands, book printing also represented an information revolution, but took on a very different form.

Many people today are familiar with the term "information revolution." The term is tossed around to describe the changes in information consumption associated with the Internet. People are able to read versions of the day's *New York Times* in Hawaii-- either in print or online. Reporters for Reuters and the Associated Press can instantaneously share stories with consumers and other new agencies. And, readers can compare accounts of the same event from the BBC, *New York Times*, and *Washington Post* without leaving their desks.

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18. Klaus Kreiser, ed, *The Beginnings of Printing in the Near and Middle East: Jews, Christians, and Muslims (Wiesbaden:Harrassowitz Verlag, 2001),* 9-12.
19. *Encyclopaedia Britanica,* Online premium service, 2004, s.v. "typography."

Without formulating any clear definition, pundits and so-called computer "gurus" assert that the Internet has ushered in "The" Information Revolution.

Historians of technology, and historians in general, however, are more inclined to argue that the Internet has ushered in "an" Information Revolution--that is, a revolution that has a precedent. Seeing a historical precedent cuts through some of the smoke and mirrors of the marketing and hype. In spite of this consensus, scholarly agreement about information revolutions ends there. Where did these revolutions begin? Some argue that the transistor signified the first information revolution, while others point to Gutenberg's typogrpahic printing press in Mainz, Germany as the first agent of an information revolution.[20]

"Information Revolution" defined as a historical concept

Daniel Headrick, a historian of technology, argues that information revolutions are nothing new and have been around since the beginning of human history. Building on his thinking about information systems and information revolutions, I argue for the interpretation of book printing in Islamic lands as one of many information revolutions in Islamic history. Broadly defined, an information revolution is a period of accelerated change in technologies of knowledge. There are five broadly defined technologies of knowledge. They are methods of gathering information, systems of naming, methods of transformation and display, systems of storage and retrieval, and systems of communicating information.[21] A few

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20. Eisenstein, xiv.
21. Daniel Headrick, *When Information Came of Age: Technologies of Knowledge in the Age of Reason and Revolution, 1700-1805* (New York: Oxford University Press, 2000), 4.

examples help to clarify these categories. A book can be a storage system and communicating system, while a map is a storage, communication, and display system. The categories help to approach a familiar technology with new, critical eyes.

What is accomplished by positing this general definition of information systems and information revolution? For one, it is simply more accurate to view this phenomenon with a wide lense. Information is not new, nor is change, video, text--all of the components that make up the Internet information revolution. There is a tendency toward technological myopia, being amazed by current gadgetry obscuring the deeper motivations for adopting or developing a technology--most commonly, that a technology needs to solve a perceived problem or set of problems. The primary benefit of this broad definition of information systems and information revolution is that it offers a set of generalized, analytical criteria with which to approach any technology, from a map to the Internet. By seeing information revolutions as events or processes that have occured throughout human history, comparisons between instances of information revolutions can be made over time. Scholars and journalists who follow the Internet industry often write about the similarities between the internet revolution and the print revolution in 15/16th century Europe.[22] This study is a step towards being able to draw meaningful comparisons between the adoption of printing in Islamic lands with the introduciton of the Internet in Muslim nations around the world today.

Taking this broad view of technology, we can understand language itself as an information system of sorts. Defined broadly, the invention of writing also was an information

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22. For example, the popular media theorist (and, Walter Ong's teacher) Marshall McCluhan in his groundbreaking book *The Gutenberg Galaxy* (Toronto: University of Toronto Press, 1962).

revolution.[23] As it applies to Islam, we will analyze major information revolutions throughout Islamic History. This analysis will help to identify patterns and try to ascertain "Islamic responses" to new information systems throughout history-- to the extent that it is possible to identify such patterns. Addressing the issue of book printing in Islamic lands and broadly defining "information systems" illuminates the often overlooked point that Muslims and Islamic governments have embraced information systems (most notably, paper-making techniques in the 8th century) that brought revolutions in communication and knowledge. Most importantly, applying this general definition across history helps to identify the novelty of modern rhetoric surrounding technology. For example, denunciations of the telegraph or the printing press as a "Western" or *kāfir* (unbeliever) technology are part of a larger modern movement that seizes upon religious "symbolic capital"[24] to respond to colonial pressures.

Previous scholarship addressing Muslim Printing

Early scholarship that dealt with the "late adoption" of typographic printing by Muslims often took one of two trajectories. The first: Islam was presented as a "barrier to printing"[25] and viewed as dogmatically conservative. The second trajectory overemphasized the economic and political concerns of the calligraphers in Istanbul-- an issue to examine, certainly, but it does not deserve to be placed on center-stage. The implication of "Islam" being a "barrier to

23. See Walter Ong, *Orality & Literacy* (London: Routledge, 1982).
24. Borrowing the term from French sociologist Pierre Bourdieu, it helps to organize and make sense of modern Islamic movements as they invoke "Islam" differently and to serve different agendas.
25. See chapter entitled "Islam as a Barrier to Printing" in Thomas Carter, *The Invention of Printing in China: And Its Spread Westward* (New York: Columbia University Press, 1925).

printing" is that there is a monolithic "Islamic" response to the printing press. By the 15th century, there was a highly developed Islamic legal system that could be maligned as "conservative." Similar to parliamentary systems of government, decisions are analyzed and weighed deliberately. Indeed, Muslims engaged printing within this framework of the Islamic Legal System.[26] There was not a unified "Islamic" response to printing,[27] and it is these diverse responses of Muslims, as they wrestled with the questions that printing presented, that I will highlight throughout this study. In contrast to the diverse reality, the mythical idea of a unified Islamic response to printing gives the impression that there is a pat religious answer to the problem of printing in the Qur'ān or traditions of the Prophet (*ḥadīth*). Some will cite the *ḥadīth* regarding religious innovation, as evidence of an Islamic tendency towards conservatism.[28] Examining early Muslim printing with a broad view of information systems helps to locate the role of Islam in the story without overemphasizing or oversimplifying its role.

Hebrew, Armenian, and Greek printing presses opened in Istanbul, making a formal ruling from the Ottoman Sultan Bayezid II necessary. In 1485, his decision to allow printing presses to operate within the non-Muslim communities of Istanbul and the Ottoman Empire showed openness. However, the case of the typographic press was not the first time Muslims

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26. There is unfortunately very little documentation explaining the reasoning of the Ulema that spoke to the issue.
27. A side discussion can originate from this point about the reification of "religion" in the modern age.
28. See Imam Nawawi, *40 Hadith*, http://islamworld.net/nawawi.html#hadith6. See also William Graham, "Traditionalism in Islam: An Essay in Interpretation" *Journal of Interdisciplinary History 23, (1993): 500.*

were faced with a new information system. Using Headrick's model, information revolutions have been present throughout human history. There have been a number of important revolutions in Islamic history dating all the way back to the lifetime of the Prophet Muḥammad. Seeing the succession of Islamic information revolutions is an important step to unseating the idea that Islam is antithetical to any particular technology as such. And, highlighting this thread in Islamic history helps to identify patterns in Muslims engagement with technology. Are there common problems that motivate Muslim communities to seek out a technological solution? Are there core values against which these solutions are evaluated? Are these values all religious, per se? In the end, Islamic book printing accounts for a few points along this continuum. By viewing Islamic information revolutions, a sense of how Islamic values (religious and aesthetic) interact with technology will arise. At the same time, the novelty of the past 200 years becomes evident. By novelty, I mean both the technological assumptions we make as well as the post-colonial lens through which we understand Islamic history.

Other Islamic Information Revolutions

There are several moments in early Islamic history that can be interpreted as information revolutions. I will discuss: (1) the Prophet Muḥammad's statement allowing the writing of his sayings and deeds after first reprimanding his Companions for doing so, (2) the writing of the Qurʾān, (3) the pointing of Qurʾān manuscripts, and then (4) the adoption and development of paper making techniques.

Recording the Ḥadīth

Documentation of this first information revolution comes from the Prophetic traditions themselves.[29] On the one hand we find traditions forbidding the writing down of anything but the Qurʾān, such as:

> Abu Sa'id Khudri reported that Allah's Messenger (may peace be upon him) said: Do not take down [i.e. write] anything from me, and he who took down anything from me except the Qur'an, he should efface that and narrate from me, for there is no harm in it and he who attributed any falsehood to me-and Hammam said: I think he also said:" deliberately"--he should in fact find his abode in the Hell-Fire.[30]

During the early period of the revelation of the Qurʾān, the Companions (those who saw Muhammad and believed in his prophethood) of Muhammad were forbidden to write his sayings and actions. When it was no longer feared that Qurʾān and the Prophet's own words would be confused, Muhammad is reported to have said: "Seek assistance with your right hand and he indicated towards writing with his hand."[31] The Prophet was addressing a Companion with poor memory, granting him permission to write the sayings and actions of the Prophet. There is another hadith in which the Prophet granted permission to write hadith, from the collection of Abu Dawud:

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29. Naturally, there is debate about the historical value of the Hadith collections. It is not my intention to get into this expansive discussion. See, however, scholars such as Motzki, Goldziher, Schact, and Burton for a variety of opinions regarding the Hadith collections.
30. From Sahih Muslim Book 042, Number 7147 (Sahih Muslim, translated by Abdul Hamid Siddiqi, [Lahore: Sh. Muhammad Ashraf, 1987] vol. 4, p. 1543): http://www.usc.edu/dept/MSA/fundamentals/hadithsunnah/muslim/042.smt.html#042.7147
31. Hadith Collection of Tirmdhi, vol. 2, p.107.

> I used to write everything which I heard from the Apostle of Allah. I intended (by it) to memorise it. The Quraysh prohibited me saying: Do you write everything that you hear from him while the Apostle of Allah (peace_be_upon_him) is a human being: he speaks in anger and pleasure? So I stopped writing, and mentioned it to the Apostle of Allah (peace_be_upon_him). He signalled with his finger to him mouth and said: Write, by Him in Whose hand my soul lies, only right comes out from it.[32]

After Muhammad told his Companions that they could write his sayings and actions, a new epistemological source was made possible and its importance implied. Moving hadith from oral tradition to writing enabled the practice of Islamic Law for those who could not memorize large numbers of hadith; in other words, realistically, it set the stage for the practice of Islamic law as a major factor in Islamic society. Islamic legal scholars look to both the Qurʾān and ḥadīth, reflecting on and reasoning from them deeply, which is possible when the texts are written. In fact, each of the four major Sunnī Schools of Law (madhāhib) were built around ḥadīth scholars who accumulated vast collections of Muhammad's sayings and deeds to build their legal arguments.

The written Qurʾān

The second major "information systems" decision that the early Muslim community was faced with was to write and collect the revelation given to Muhammad into a single text.

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32. See Sunan of Abu Dawud Book 25, Number 3639: http://www.usc.edu/dept/MSA/fundamentals/hadithsunnah/abudawud/025.sat.html#025.3639

According to the accounts in the hadith, the problem that needed to be addressed was one of information storage. The revelation was given and preserved orally by Companions of the Prophet Muḥammad. The early Muslim community lost many who had memorized the Qurʾān in the Battle of Yamāmah, on the eastern edge of the Najd province of Arabia. Thus, the community needed to ensure that the Qurʾān was preserved and, so, it was decreed that it be written and collected into one text under the leadership of ʿUthman b. ʿAffan (r. 644-656 CE), the third Caliph (leader, successor) of the Muslim community.[33]

The initial writing of the Qurʾān was a skeletal representation of the Arabic "text." In Arabic, the consonants are regarded as being given "movement" (*ḥaraka*) by the short vowels (which themselves are known as "movements" (*ḥarakat*), which make words pronouncable. The ʿUthmanī recension of the Qurʾān, however, was written with the consonants only, illustrating that the text was intended as an aid for someone who had not yet memorized the text by heart but could recall it with a visual cue.[34] So, the written Qurʾān was a subtle break from the purely oral tradition that existed in Arabia at the time, but this move solved a real problem. There was a need to secure the revelation for posterity.

Pointing and Calligraphy

The initial writing of the Qurʾān safe guarded the revelation from corruption and from being forever lost if those who had memorized the Qurʾān, known in Arabic as a *hafiẓ*, were

33. Richard Martin, *Islamic Studies: A History of Religious Approach (*Upper Saddle River, NJ: Prentice Hall, 1996), 62.
34. See Ahmed von Denfer *ʿUlūm al-Qurʾān: An Introduction to the Sciences of the Qurʾān* (Delhi: Oxford University Press, 1985).

killed, as in the aforementioned Battle of Yamāmah. That initial plunge led further to the "pointing" of the Qurʾān and the development of the calligraphic arts. Pointing means to add the short vowels to the written text.[35] By pointing the text of the written Qurʾān, people who read Arabic could now pronounce the Qurʾān accurately without having it committed to memory. It is a subtle change, but it makes possible the reading of Qurʾān by non-Arabic speakers who do not know the meaning of the words which is the case for many in non-Arabic speaking, predominantly Muslim countries today.[36]

Writing (and incidentally "pointing" in turn) was obviously the basis for the calligraphic revolution. Art historians and even the casual visitor to the Muslim world attest to the fact that the calligraphic tradition is the center piece of Islamic art and architecture. Appreciation of calligraphy informs the book arts, naturally, especially one's expectations of a Qurʾān. Calligraphy developed into "the major medium of Islamic art" by the 15th century and is arguably the case today.[37]

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35. Originally the diacritical markings of short dashes and then later dots were used to distinguish similar consonants from one another. Then, short vowels (ḥarakt and tashkl), came to be indicated by angled dashes and other point-like markings in the system of "pointing." (See Ahmed von Denfer, 57-59); a recent treatment of this is Mustafa Shah, "Exploring the Genesis of Early Arabic Linguistic Thought: Qurʾānic Readers and Grammarians of the Baṣran Traditioin (part II)" *Journal of Qur'ānic Studies*, 5(2, 2003): 4-7.
36. William Graham, *Beyond the Written Word:Oral Aspects of Scripture in the History of Religion* (New York: Cambridge University Press, 1987), 111.
37. Jonathan Bloom and Shelia Blair, *Islamic Arts* (London: Phaidon Press, 1997), 220.

Paper making in Islamic Lands

The most visible and far-reaching information revolution in Islamic Lands was the adoption of paper by the Abbasid Caliphate in Baghdad. Paper-making techniques were learned by Arabs in Central Asia after they had conquered the territory in 750 C.E. Buddhist pilgrims traveling the Silk Road from India to China brought the knowledge of paper-making to Central Asia. Paper quickly became a tool for thinking, designing, and recording information.

The paper-making revolution did not take place alongside the printing revolution in Islamic lands, whereas in China[38] and Europe the two revolutions were almost parallel. Paper making techniques were learned by Muslim Arabs in Central Asia. The popular account of this transfer is told by the 11th century historian Thaalibi, who focused on Chinese prisoners captured by the Arab commander Ziyad b. Salih. Paper-making was introduced to Samarqand by the prisoners in 751 C.E. and after that paper became an important export and was widely used and recognized.[39]

The Abbasid Caliphate ruled the Islamic Empire from Baghdad in the 8th century and was expanding. Paper making techniques were brought back to the Abbasid capital and met with great enthusiasm. The Abbasids made quick use of paper in administration and record keeping. Paper solved the problem of information security. Records on parchment and papyrus could be

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38. In China, after the advent of paper typographic printing methods developed but were not widespread due to the expense of fonts of Chinese language type. Wood-block printing was much more popular and practical.
39. Jonathan Bloom, *Paper Before Print: The History and Impact of Paper in the Islamic World* (New Haven, CT: Yale University Press, 2001), 8-9.

scratched away and then altered. Paper could not be modified without leaving a visible trace. Paper also sped up trade by allowing for financial records to be faithfully recorded-- creating a medieval checking system. Traders no longer needed to barter for goods, making it easier to travel longer distances for commerce.

Once Muslim Arabs had learned paper making techniques from their campaigns in Central Asia, they began to perfect their techniques.[40] Islamic paper developed a unique character and started to differentiate. For example, Chinese paper was predominantly made from raw fibers, whereas Islamic paper reused waste fibers.[41] Techniques of paper coloring and "marbling" also developed in the Islamic centers of paper-making after 750: Damascus, Baghdad, and Iran. After the Arab encounter with paper in Central Asia, paper spread rapidly across the vast Islamic Empire. It had taken five centuries for paper to reach Samarqand[42] from China. In contrast, it took only two centuries for paper to reach Muslim Spain from Central Asia.[43] This rapid spread gives us an idea of the mobility and movement throughout the Islamic Empire, as well as an idea of the utility found in paper.

The famous historian Ibn Khaldun provides support for thinking the Abbasid Caliphate's motives were driven by information security. Two realms exist in which it is important to have reliable information: matters of government and education. People want to know that their financial dealings are faithfully recorded and that their teachers have the credentials that they claim to have. Ibn Khaldun writes: "paper was used for government documents and diplomas.

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40. Ibid., 45.
41. Ibid., 72.
42. An old city in eastern Uzbekistan rich in Islamic history.
43. Bloom, *Paper Before Print,* 89.

Then, people used it for government and scholarly writings. Manufacturers of paper reached excellence."[44] Ibn Khaldun could very well have been referring to Baghdadī or Damascene paper, which was known throughout the world (at least, along the trade routes) for its fine texture and variety of colors. Islamic paper was worthy of gifting to princes, Sultans, and all manners of people in power.

Another major consideration that makes the Muslim use and production of paper a significant revolution is that paper unseated the 4000 year-old medium papyrus. Papyrus continued to be used in Egypt until the tenth century. The shift to paper is confirmed by a 1980 archeological discovery, a geniza (vault for storing texts in Jewish tradition) found in Fustāt (Old Cairo). Of 441 documents dated between 950 and 1050, 399 of the documents were written on paper with only 7 on papyrus and the remaining 35 on parchment.[45] By 1216, a travel writer wrote that papyrus was forgotten in Egypt.

The implementation of paper usage by the Abbasid Caliphate in their administration was key to the quick and lasting success of paper. The Caliphate was unmatched in the expanse of their territory and their cultural influence, thus their endorsement of paper led to its rapid spread from Central Asia to Spain. Baghdad's first paper mill was established in 794-95 C.E. under the reign of Caliph Harun al-Rashid. Utility drove the government's quick investment. The new medium was used to record land holdings, army service, and taxes. For these important administrative records, paper was viewed as more secure than papyrus and

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44. Ibn Khaldūn, *The Muqaddimah*, translated by Franz Rosenthal (New York: Princeton University Press, 1958) vol. 2, p. 392.
45. Bloom, *Paper Before Print,* 75.

parchment.[46] The relationship to the Caliphate/government and technology will repeat itself in the case of Muslim printing in Ottoman Turkey in the 18th century. However, in the Ottoman case, the government's reticence rippled throughout the Empire making it an uphill climb for those Muslims wanting to overturn the print ruling.

In addition to its utility in government administration and financial record-keeping, paper was also used in a religious context-- most notably, paper was used for Qurʾān manuscripts. There is a surviving Qur'ān from circa 1000 C.E. that is *written* on the best paper available-- that is, Baghdadī paper.[47] By 1000 CE, Baghdad had established itself as the premier paper producer from Europe to Asia. Al-Nadim (d. 990 C.E.) mentions numerous colors and sizes of paper.[48] There are also Byzantine references to Baghdad paper.

While the Qur'ān was written on paper, it is important to note that this shift in media did not extend to all religious communities. As late as the mid-10th century, Jews continued to write scriptures on parchment.[49] For whatever reasons, not all religious communities chose to move their scriptures from one type of media to another. Thus, it is fair to see the adoption of paper as an Islamic Information Revolution. Breaking with convention, Muslims moved their most sacred scripture to paper and thought through the theological implications, addressed religious concerns and, then, made the change. It solved a problem for Muslims that was not universally perceived.

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46. Ibid., 49.
47. Ibid., 214.
48. Bayard Dodge, ed. and trans, *The Fihrist of Al-Nadīm*, (New York: Columbia University Press, 1970), vol. 1, 39-40.
49. Bloom, *Paper Before Print,* 98.

After the Mongol invasion of Baghdad in 1258 C.E., Baghdadī paper production declined sharply. A factory was soon established in Damascus to fill the void. In Baghdad, there were attempts at revival. But this was cut short in 1401 by Tamurlane's (r. 1370-1405) sack of Baghdad and the massacre of its population, which delivered a devastating blow to the culture in the heartland of the Middle East. Short lived revivals under the Jalayrids and Turkmens in the 15th century failed to reestablish Baghdad's former prestige. Iraqī paper-making had effectively ended.

Syria became the majority producer of paper by the 12th century and continued through the Mamluk fall of the 13th and 14th centuries. When Tamurlane sacked Damascus in 1401, he sent back the best artisans to his capital at Samarqand. In Samarqand and Herat (in Western Afghanistan), Islamic arts flourished, but could not meet the Mediterranean demand for paper as Baghdad and Damascus had. With increased demand and technical development, Europeans began exporting their own paper to the Middle East in earnest. The Middle Eastern paper industry never regained its prominence. Illustrating the shift in paper production, the first known copy of the Qur'ān written on European paper is dated around 1340.[50]

Paper-making techniques continued to develop in Islamic lands, although the volume of production had been crippled first by the Mongols (when they destroyed Baghdad and Damascus) and later by Tamurlane. In Iran, paper making reached the most advanced levels. Iranian papermakers produced fine, smaller sheets.[51] Iranian papermakers developed marbling techniques that spread to Europe, the Ottoman Empire, and India. Paper-making in Iran

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50. Ibid., 76.
51. Ibid., 64.

reached the highest levels of refinement, operating uninterrupted from 800 to 1600-- the longest of any Islamic lands.[52]

Many Muslims were forced to use European produced paper after the decline of the Baghdadī and Damascene facilities. There is a 1409 *fatwa* illustrating how this change was being dealt with by one North African jurisconsult, Abdallah ibn Marzūq. He wrote a lengthy *fatwa* entitled "Decision concerning the permissibility of writing on paper made by Christians."[53] He analyzed the problem in terms of ritual purity. What does it mean for Arabic to be written on paper produced by Christians or with watermarks that grated against Muslim sensibilities (e.g. images of a cross or living being)? In his long response to that quesiton, he indicated that paper had once been made in his city, Tlemcen, Fez, and in Muslim Spain. Ibn Marzuq reasoned that writing Arabic over an idolotrous image made it invisible; writing the name of God on this paper replaced falsehood with truth. Reasoning by analogy (*qiyas*), he argued that the situation was analogous to transforming a church into a mosque--an image familiar to Muslims in Andalusia.[54] And like such a transformation, writing Arabic on the paper of unbelievers would be permissible.

With fine paper, the Islamic Empire developed a rich bookmaking tradition and became known as an empire of books, although some regions were slower to embrace the new technology, like Morocco.[55] Islamic bookmaking reached the level of high art. Culturally, the printing press would enter this tradition of refined bookmaking and a developed aesthetic

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52. Ibid., 73.
53. Ibid., 87
54. Ibid., 86-87.
55. Ibid., 89.

sensibility regarding books. Evidence of beautiful book making exists from as early as 900 C.E. The availability of paper encouraged the leap from a culture based "on gesture and memory to one based on books."[56]

What this paper revolution meant for religious and literary life is not evident. Oral culture and the orality of the Qurʾān was deeply ingrained in the traditional Islamic educational system, predicated on memorization of Qurʾān. Higher education required memorization of Qurʾān and a significant number of *Ḥadīth*, the very epistemological sources from which a scholar reasoned. So, although paper was available, it did not overturn the traditional Islamic educational system. Islamic legal scholars hesitated to rely on written agreements.[57] Legal decisions and lessons were far more often transmitted from the teacher to the students orally. Books and written matter in general, were a supplement to the oral transmission of knowledge. This relationship was the keystone of the Islamic education system.

Paper was a ubiquitous commodity in the Islamic Empire. With its availability, there was an explosion in book production. There was an established culture and tradition into which this technology was incorporated. With access to abundant paper, in the 800's Islamic legal scholarship flourished. Major scholars, for whom Legal Schools would later be named, like Abu Hanifa, Ibn Hanbal, Malik ibn Anas, and Shafi'i worked during paper's infancy in Islamic lands. Mosques served as publishing centers. This makes sense given that the mosque is a place of

56. Ibid., 94.
57. Ibid., 99.

prayer (literally, Ar. masjid), but it also a social and education center.[58] Education and religion were intimately intertwined, both physically and philosophically.

What makes this into a revolution?

Paper was used to facilitate a profound cultural change: the move from a predominantly oral culture to a scribal one. [59] With the accessiblity of paper, writing developed into much more than a representation of speech. Paper did not simply allow for the recording of existing patterns of thought within these oral cultures. Instead, new information systems and cultural products developed. New ways of thinking were made possible. There were changes in mathematics, geography, commerce, and the arts.

As paper made its way out of Baghdad in the late 8th and early 9th centuries systems of notation[60] were expanded and elaborated, allowing for two-dimensional thought to develop as never before. In Spain, the Hindu-Arabic numeral system caught on quickly. [61] Arabic translations of Euclid, Archimedes, and Ptolemy were available and circulating throughout the Islamic Empire.[62] Commerce also changed as a result of paper's inexpensive availability. Trade was facilitated by a Medieval credit economy, which was made possible because of one language--a single monetary system.[63] An Empire wide system of currency could be produced.

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58. Ibid., 112.
59. Ibid., 122
60. Using Headrick's language, it's a form of information system. See Headrick, *When Information Came of Age, 24.* Also see a similar analysis applied to the Islamic context in Bloom, *Paper Before Print,* 125.
61. Bloom, *Paper Before Print*, 133.
62. Ibid., 130.
63. Ibid., 136.

And, financial transactions could be recorded without fear of alteration. Indeed, the English word “check” has its roots in Persian (*sakk*), born out of this period of development.[64] In 1294, Mongols attempted to introduce block-printed paper currency. Thus, paper was adopted into commercial and intellectual life opening avenues for development that were not previously possible.

The Paper information revolution was the catalyst for many intellectual developments of the Islamic Middle Ages.[65] Design was made possible by paper. That is, design and production of arts could be separated. And, designs could be duplicated and shared. Visual artists developed a new vocabulary, transforming the visual world of Islam.[66] Architecture changed. The Dome of the Rock mosque completed in 692 CE was constructed with graphical plans, a break with previous, more improvisational methods of construction. During the first five centuries, graphical plans were not used and buildings were "overbuilt." [67] Architectural designs survive, which map the Topkapi Palace in Istanbul. Consistency in architectural vocabulary suggests a class of professional architects.[68] In addition to architecture, the separation of design and production can be seen in ceramics. Specifically, in Iranian lusterware, complex designs were communicated from the master designer to the artisan.[69] The paper revolution led to greater professional specialization in the arts.

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64. See American Heritage Dictionary, s.v. "check", Bartleby.com , http://www.bartleby.com/61/37/C0263700.html .
65. Bloom, *Paper Before Print*, 159. See also Donald Hill, *Studies in Medieval Islamic Technology (Brookfield, VT: Ashgate, 1998), 58.*
66. Bloom, *Paper Before Print*, 161.
67. Ibid., 172.
68. Ibid., 195.
69. Ibid., 188.

Authors were thinking in new visual ways. Cartography in Medieval Islamic lands was affected by paper. Geographical knowledge was of central religious importance. Churches were oriented to the East, and Muslims needed to know the direction of Mecca and Jews of Jerusalem. The idea of climes developed-- that is, a system elaborated by Ibn Khaldun which partitions the world into 3 parts and attributes physical and intellectual characteristics according to the 'clime' in which one lives.-- that is, the world was being perceived graphically in new ways. The level of visual sophistication of the literate public was elevated.[70] With increased travel to Iran, a Chinese grid system was adapted.[71] These new developments-- new systems of information representation and storage, specifically maps and paper currency-- made possible by paper-- constitute an information revolution.

Wood block printing

While wood block printing did not have the profound impact necessary to justify calling it an information revolution, it was a development that counters the myth of conservative Islam. It also serves as an example of printing in Islamic lands preceding the typographic and lithographic printing. It was a development leading up to book printing and hence is worthy of note.

There is some evidence of wood block printing in Islamic lands. Wood block printing was used in leather design and textiles, but not applied to books. Richard Bulliett writes of an interesting episode in medieval Islamic history that directly relates to religious life. Sufi

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70. Ibid., 141.
71. Ibid., 148 &153.

masters (*shaykhs*) wrote talismanic verses of Qurʾān or names of God intended to be applied to one's religious reflection or prayer. Wood block printing was used to mass produce some of these slips of paper and passed out to a number of largely illiterate people. Bulliett argues that these were sold by unscrupulous merchants as hand written prayers by a Sufi shaykh. The illiterate buyers could not tell that the slips were not handwritten, not having an educated, discerning eye. Rather, the real value to the buyer was the *baraka* (blessing) possessed by the "handwritten" prayer.[72] In other words, wood block printing was used for religious purposes long before the invention of Gutenberg's typographic press. It is a stretch to call this a revolution, but it is an early example of Islam and printing.[73]

Muslim Book Printing as an Information Revolution

All of the preceding information revolutions and developments constitute the historical context into which book printing was introduced. After the introduciton of paper to Islamic lands in 750 C.E., paper's wide usage influenced intellectual and religious life, beyond the initial administrative applications that the Abbasid Caliphate anticipated.

Even before the advent of the Gutenberg Press, it is already (c. 1350 C.E.) clear that there have been significant developments in Islamic intellectual and religious tradition as Muslims embraced and incorporated technological developments into religious practice. I will address

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72. See Richard Bulliet, "Medieval Arabic Tarsh: A Forgotten Chapter in the History of Printing," *Journal of the American Oriental Society*, 107 (1987): 427-438.

73. Another application of wood block printing was for the production of playing cards. It is said that these were some of the first printed materials to be passed from Islamic lands into Europe. Carter refers to this briefly in his text.

the details of Muslim book printing in the coming chapters as well as elaborate a set of "Islamic values" against which these technologies were evaluated. But, to conclude this discussion of Muslim book printing as one information revolution within a rich history of information revolutions, I will sketch out some of the important cultural and intellectual developments made possible through print that help qualify it as an information revolution.

By the end of the 19th century, the widespread adoption of printing facilitated several important cultural and intellectual developments that affect religious knowledge and communication. These developments, the rise of literalism and its consequences, were not unique to Muslim societies, but took on uniquely Muslim forms. First, the most visible and influential development was the rise of the literal readings of religious texts. Literalism is associated with religious fundamentalism, which posits one single interpretation of the text. Second, as a consequence of literalism's positing one right interpretation, literalists privile the written word above all; and, religious literalists in the Islamic tradition defied (and even today defy) over a thousand years of oral tradition in which a teacher clarifies the text orally.[74] Third, literal interpretation enables the reader to claim authority, defying traditionally trained authorities, collectively the *ulema* (religious scholars). But, literalism is more than a political claim to interpretive authority. A fourth characteristic is that literalism rests upon and reinforces a distinctly modern, individualistic view of the written word and reading. The easy, inexpensive access to books enabled by mass printing supports textual literalism.

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74. See Sayyid Nasr in George Atiyeh, ed, *The Book in the Islamic World: The Written Word and Communication in the Middle East* (Albany, NY: State University of New York Press, 1995) p. 78-9.

Literalism is part of a larger modernistic world view that presupposes an individualistic reader (or when you have a literalist institution, it presupposes a group of individualists). Borrowing from work in a field known as "History of the Book,"[75] one finds that silent, individual reading is a fairly modern phenomenon and a cultural "decision" in and of itself. In Bengal, a former English colony where oral tradition was highly developed, when printed newspapers were introduced, gauging the readership of a given publication was problematic. Newspapers were often purchased by one person and then read to a room of approximately 10 to 15 people who listened to the daily news. When studying the history of early Muslim printing, it is necessary to remember both the novelty of silent reading, literalism, and the modernistic world view.

In literalism, the word has become an object through print, frozen speech or thought, meant to communicate a single intention of the author.[76] Hence, we encounter a fifth consequence of book printing: when applied to religious texts, the literalistic perspective restricts the old Islamic tradition of Qurʾānic commentary (*tafsīr*) in which a reading is given serious consideration so long as it can be argued grammatically.[77] Consistent with Islamic

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75. The History of the Book is a relatively new field that explores the "social and cultural history of communication by print." See Jared Jensich, "The History of the Book: Introduction, Overview, Apologia," *Libraries and the Academy*, 3 (2003): 229-239.
76. I am thinking specifically of Walter Ong's assertion that "print more than anything made the word appear to be a thing." *Orality and Literacy* (London: Routledge, 1982).
77. Carl Ernst, *Following Muhammad: Rethinking Islam in the Contemporary World* (Chapel Hill, NC: Universtiy of North Carolina Press, 2003): 29.

tradition, a "hermeneutic niche"[78] exists in a single passage of Qurʾān highlighting the "bio-diversity" of meaning . Textual literalism does not encourage such diverse readings.

A sixth and final consequence of book printing, is that with the wide-scale adoption of printing, books have become cheap and available to most economic classes. Inexpensive books and the pervasive idea of reading as a silent, individual practice encourages one to take a book as one's shaykh, namely as one's teacher and guide.[79] Without a teacher versed in the diversity of interpretations of a passage, the literalist then becomes hermetically sealed within the container of the sole truth of his own interpretation (far from hermeneutic openness), a state of mind that in turn reinforces his disinterestedness of the interpretations of others.

These changes in the concept of the "reader" and the "text" are profound cultural and intellectual developments. Literalism grew out of a print culture and redefined the relationship of teacher and student. These profound, far-reaching changes qualify book publishing as an information revolution. It is a revolution with wide-ranging implications for religious thought and community. And, it is but one information revolution in Islamic history.

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78. This metaphor is used by Alan Godlas to explain the multiple planes of interpretation within a single passage of the Qurʾān.
79. This is a hadith from Bukhari's *Sahih*.

CHAPTER 3

LOOKS LIKE A BOOK, SOUNDS LIKE A BOOK: CULTURAL CONSIDERATIONS IN THE STUDY OF PRINTING IN ISLAMIC LANDS

> *scripture*: Etymology: Middle English, from Late Latin scriptura, from Latin, act or product of writing, from scriptus
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> 1 a (1) capitalized : the books of the Bible -- often used in plural (2) often capitalized : a passage from the Bible; b : a body of writings considered sacred or authoritative
>
> 2 : something written[80]

As I argued in the preceding chapter, the typographic printing press was not the first information technology for Muslims and Islamic legal scholars to evaluate. On the contrary, Muslims and Islamic legal scholars have adapted established tradition several times when a technology, broadly conceived, was deemed useful or necessary--for example, the documentation of *Ḥadīth*, the writing of the Qurʾān, and the use of paper (both Islamic and European). Book printing falls in this long tradition of evaluation of new technologies and adaptation of the existing tradition. Paper was the farthest reaching of these technologies. Its production and use was quickly adopted and disseminated throughout Islamic lands. The

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80. *Merriam-Webster Dictionary*, online version, 2004, "scripture."

Islamic values against which information technologies, specifically book printing, have been evaluated are as follows: Muslim views of religious texts (specifically, the Qurʾān), the cultural value of calligraphy, the traditional Islamic educational system, and the technical limitations of printing Arabic script.

Before examining these Islamic values, it is important to understand a few details about the arrival of print technology in Islamic lands. The story of paper's introduction gives a sense of the extent to which the Islamic book arts had been developed when the printing press came from Europe into the Ottoman Empire. Whereas paper was met by Arab Muslims in Central Asia during a period of expansion, print technology came to the Ottomans via Armenian Christians and Sephardic Jews when the Ottoman Empire was at the peak of it power and as Europe was gaining momentum.[81] Yet although print technology was available to the Ottomans, its use by Muslims was prohibited by the chief Ottoman legal authority, the Shaykh al-Islam. It is important to understand some of the early experiences of the Ottoman Empire with typographic printing. Doing so helps one to imagine clearly the circumstances surrounding the decision of the Ottoman Shaykh al-Islam to ignore typographic printing for Muslim texts. The ruling disallowed Muslim printing while allowing Christian and Jewish communities to set up print shops in Istanbul.[82] The *fatwa* issued against Muslim printing in 1485 set a precedent for Islamic lands that took a long time to overturn. An Arabic script printing press did not operate in Istanbul until 1725 and, then, it printed only secular books.

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81. Kreiser, *The Beginnings of Printing in the Near and Middle East* (Wiesbaden: Harrassowitz Verlag, 2001), 9-11 and Abdulrazzak, *The Kingdom of the Book*, Ph.D. Dissertation (Boston: Boston University, 1990).
82. Kreiser, *The Beginnings of Printing in the Near and Middle East,* 25.

Following the fatwa of the Shaykh al-Islam, the Ottoman Sultan Bayezid II ruled on the issue of typographic printing very soon after it was invented by Gutenburg in Mainz. The ruling issued in 1485 was not a flat prohibition against typographic printing in the Empire. Rather, permission was granted to the millet (non-Muslim minority) communities to print in their own languages (Hebrew and Armenian) with complete freedom in the Ottoman capital of Istanbul. The Muslim community was not extended this same opportunity. Printing in Arabic script was forbidden.[83] This prohibition is most frequently cited and emphasized by Western scholars. Further complicating the picture, the Ottoman sultan permitted, in contrast, the importation of texts printed typographically in Arabic script from Europe. If there was indeed a categoric fear or disdain of typography in the Arabic script (particularly religious texts), as previous scholars have suggested, then why did the sultan allow the importation of European produced Arabic script texts?

What I present in this chapter is historical evidence that will allow us to see the nuances in the relationship between Europe and the Ottoman Empire regarding printing. When typographic printing was developed by Gutenberg in Europe in 1450, the Ottoman leadership were unconcerned by European advances. The decision not to embrace typographic printing was not a reflexive comment on Europe. From the European perspective, the typographic press was not a neutral cultural product devoid of values--although it was presented as such. The process of printing's establishment in Islamic lands involved a bidirectional cultural interaction. Seeing the process as a complex exchange of values will help us to avoid judging

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83. Pre-Ataturk Ottoman Turkish was written in the Arabic script, so Sultan Bayazid II's edict forbade both Turkish and Arabic language printing.

the Ottomans as defensive or conservative. Examining the many facets of this exchange, I argue that previous Orientalist explanations, while incomplete and inaccurate in their blaming Islam for monolithic and conservative resistance to printing, are not completely without merit. Looking comparatively at the histories of the printing press[84] in Islamic lands, there is indeed something "Islamic," an apparent set of Islamic values, in each of these unique histories.

In this chapter, I construct this set of Islamic values[85] out of which Muslims evaluate a given technology and subsequently adapt cultural and religious tradition. That is, I say that a common thread through all of these Islamic histories has to do with the Muslim view of the Qurʾān (and, to an extent, all religious texts) and its function in society and transmission. The issue of book printing on the typographic press cuts to the heart of Qurʾānic transmission, traditional Muslim education, and the art of book production. As such, in contrast to what both Muslims and scholars who are ignorant of the details of the decision might think, I will argue that the Ottoman decision (and subsequent ignoring of the press between 1749 and 1785) not to adopt the typographic printing press for the production of Arabic script texts (specifically religious ones) had more to do with both general and religious aesthetics/values.[86]

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84. That is, both the typographic press and, later, the lithographic press.

85. A philosophical point that I will briefly mention: the idea of "essentializing" a religious tradition has, at times, been negatively portrayed as a precursor to colonization. There is nothing intrinsically wrong with "essentializing." It becomes a problem when it is used as a means of mobilizing sentiment of one group against the "essentialized" and different "other" group, religion, culture, race, or nation. What I aim to do, however, is to use this technique in order to refute prior narratives of Islam and printing.

86. See Ian Proudfoot, "Mass producing Houri's Moles: or aesthetics and choice of technology in early Muslim book printing," in P. Riddell and T. Street, ed, *Islam: Essays on Scripture, Thought, and Society* (New York: Brill, 1997), 56. Proudfoot, I think rightly, makes much of the aesthetics of the choice to print.

Applying the scholarship of Qurʾānic scholar and Islamicist William Graham to this problem of printing, I argue for a set of Islamic "scriptural" and aesthetic values that made early typographic printing unattractive. These aesthetic and scriptural values are the traditional value of memorization, an intimate teacher-student relationship, book copying within this educational context, and the art of calligraphy. In short, there was a traditional world-view, and associated aesthetics, that functioned well independent of print technologies.

Traditional Muslim Book Arts and Values

Traditional Muslim book arts had developed over the 1000 year history of paper in the Muslim world. Paper was in wide use in Muslim lands since the Abbasid Caliphate adopted it for administration *circa* 750 C.E., contrasted with its adoption in Europe *circa* 1300. In Europe, the typographic press followed 150 years later. Unlike the nearly parallel introduction of paper and the press in Europe, Muslims developed a 1000 year old manuscript tradition after the discovery of paper-making techniques in Central Asia by Arab Muslims. Manuscripts were developed in the context of a traditional education system which prized the teacher-student relationship and memorization. Books were created in this instructional environment and were to be studied in the shadow of a teacher, not alone. Calligraphy developed into a high art and continues to be highly regarded in Muslim societies. Religious texts, the Qurʾān most importantly, are ornamented with care out of respect for the written word and the text. Over time, calligraphic scripts diverged and regional scripts (e.g. Maghrebī) evolved distinct characters.

Given these traditional Muslim book arts and values, the issue of Islamic scripture and the importance of its oral dimension raises important issues in this debate about the early Muslim experiences with the typograpic press. And, as Graham argues, this unique view of scripture provides fertile ground for European misunderstandings of Islam.

Graham's work considers the nature of the category of scripture comparatively. His analysis provides a wealth of observations which relate to the issue of printing. That is, the question (i.e. How and when did 'Islam' embrace the printing press?) arises out a comparison to the Protestant Reformation and the Muslim response to the printing press. Considering the differences between Muslim scripture and Christian scripture gets to some of the fundamental issues in early Muslim printing. Graham addresses these difference in "scripture" thoroughly.

To even talk about Islam or religious texts at all, there must be some discussion of the Qurʾān-- the most important epistemological source in Islam. Looking at misunderstandings and misrepresentations of Islam by Western scholars (an important point to this study), Graham focuses on the understanding of the category of "scripture." This fundamental category needs to be understood in order to discuss religious printing and evaluating the Muslim experiences with the typographic press.[87] The Qurʾān is not the Muslim Bible. There is

87. Carl Ernst, *Following Muhammad,* 34. This idea is key. Carl Ernst points to the very category of "religion" as a source of misunderstanding between European colonisers and Muslims of the colonized countries. He briefly presents the geneology of the category 'religion' in *Following Muhammad*.

a uniquely Islamic theology into which the Qurʾān fits, and Muslim methodologies of prayer and practice incorporate Qurʾān in a way not analogous to the Bible.[88]

The Muslim view of the Qurʾān, the arts surrounding it, and its function in Muslim piety and society is critical to this discussion. The press is an information technology and raises fundamental questions regarding the transmission of religious knowledge. How Muslims evaluated the technology cannot be understood without also understanding the theological frame of reference. The typographic press, in its early stages, was not capable of meeting the high aesthetic standards that Muslims held for books, much less for the Qurʾān. Early European attempts to print the Qurʾān illustrate not only an ignorance of the existing standards of book arts that existed amongst the book buying Muslims, but also a fundamental misunderstanding of the Qurʾān and the nature of Muslim scripture. These early experiences with the typographic press could not have helped those Muslims who favored typography.

Historians of printing argue that the success of typography in Europe was due to a host of social conditions which created needs that the printed book fulfilled.[89] There were economic and political conditions, as well as an education system to support the typographic press. In Islamic lands, however, similar conditions to those in Europe were not present; and hence there was no context in which there was a perceived need for the printed book. While not

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88. William Graham, *Beyond the Written Word: Oral Aspects of Scripture in the History Religion* (New York: Cambridge University Press, 1987), 67 argues that if there is an analogous set of "scriptures," it would be the Vedas before anything else.

89. See Eisenstein, 92-147. Eisenstein writes of the "rise of a lettered class," Catholic/ Protestant politics in Germany and elsewhere in Europe, the rise of science, and a classical (and very textual) Renaissance. All of these movements were aided and catalyzed by the printing press. They were not, Eisenstein makes clear, created by the press, however.

inherently hostile to printing, the unique Muslim concept of scripture, the traditional Muslim education system, and the established manuscript tradition simply did not give rise to needs that could be fulfilled by typographic printing. That is, there was no glaring problem that the typographic press could solve.

Muslim views of the Qur'ān

Establishing a normative concept of how Muslims view the Qurʾān is instructive for two reasons.[90] First, it illustrates how early typographic printings of the Qurʾān produced in Europe did not conform to Muslim conceptions of scripture and the Qurʾān. And, secondly, it equips us to explore what social and religious tensions separated typographically produced texts and Muslim books and religious texts. I want to contemplate this without considering technological problems associated with printing Arabic texts. It is conceivable that if the Sultan was attracted by the technology, then his considerable resources could have solved such problems.

Juxtaposing the case of Paganini's failed "poor man's Qurʾān" and William Graham's observations about the written word in Islam highlight the uniquely oral dimension of Islamic scripture which sets it apart from Judaism and Christianity. In traditional Islam, there is value in the written and the spoken word-- reciting and writing *scripture* yields blessing. William Graham thought deeply about the role of the oral and written word in Islam. The product of

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90. In discussing in this thesis the importance of the normative Muslim view of the Qurʾān and scripture, we are assuming that there were no significant differences between such a normative view and the Ottoman view of the Qurʾān and scripture. In fact, this assumption deserves to be problematized, but such a project is beyond the scope of this study.

his thought yields a complex and dynamic interplay between the oral and written. Applying his thought to the issue of early Muslim printing brings us closer to understanding why typography was not used for Arabic-script/Muslim texts in the Ottoman Empire and why the Paganini Qurʾān failed. Graham lays out Islam's duality of scripture:

> The major importance of the written text of scripture in Islam is apparent even to the casual observer in any Islamic society. The centrality of the sacred book in Islam represents, as we have seen, in many respects the culmination of the long Near Eastern tradition of the divinely revealed, authoritative written book. The importance of the book of scripture in Muslim faith and practice is especially close to, and in significant part derived from, the emphasis on holy writ in Islam's older sibling traditions of Judaic and Christian piety. Because Islam is not just one of the three major "book religions," but in many ways even the most radical of the three in the exalted place that it assigns to its book, both ritually and theologically, it is not amiss to speak of the Qurʾān as the prototypical "book of scripture."[91]

The complex nature of scripture in Islam suggests several reasons why Paganini's business venture failed. Given the European narratives about Islam, Paganini was destined to miss the finer points of Islamic book arts and aesthetics. And, he missed the theological significance of these aesthetics. When Islam is considered the penultimate "book religion," who would have thought that the poor man's Qurʾān would flop?

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91. Graham, *Beyond the Written Word*, 79.

Qurʾān as the Revealed Word

Above all, one of the Islamic religio-aesthetic values is the belief that the Qurʾān is God's revealed speech. First of all, as literally the speech of God (*kalām allah*), Muslims believe God revealed the Qurʾān to the Prophet Muhammad. "Qurʾān" is an Arabic word meaning "recitation" from the triliteral root [Q-R-ʾ] which carries the meaning to recite/to read. Ever since the initial revelation of the Qurʾān, Muslims have viewed it as an oral phenomenon first and something to be written down second. The beginning of the revelation to Muhammad began with the command to recite:

> Recite! Recite! in the name of your Lord and Cherisher who created
>
> Created man, out of a mere clot of congealed blood
>
> Recite! And your Lord/Sustainer is Most Bountiful
>
> He who taught the use of the pen
>
> Taught man that which he knew not[92]

In addition to being regarded as the speech of God, a second main religio-aesthtic value that factored into the relatively delayed adoption of printing is that Muslims see that Qurʾān as being revealed in history to the Prophet Muhammad and then being transmitted by the Prophet to the community. These roots in oral tradition serve as a starting point for understanding the failure of the Paganini Qurʾān. In general and certainly from a traditional perspective, the Qurʾān is "essentially a book to be heard, not read:"[93]

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92. Sura 96:1-5, based on the English translation of Yusuf Ali.
93. Graham, *Beyond the Written Word*, 79.

> Truly it is a clear Recitation in a written (fixed) Book, which none may touch except the purified-- a revelation from the Lord of all Worlds. (S. 56.77-80)
>
> Had we sent down to you a writing on parchment so that they might touch it with their hands, those who do not have faith would say, "Truly, this is nothing but obvious magic." (S. 6.7)[94]

As mentioned in the earlier chapter, the Qurʾān was written only as an aid to memory during the life of the Prophet Muhammad. The Prophet transmitted the Qurʾān to his followers (i.e. the Companions) who memorized it. Then, the Companions transmitted it to others. After the death of the Prophet Muhammad in 632 C.E., the traditional account is that the third caliph of the Muslim community, ʿUthman b. ʿAffan (r. 644-656 C.E.) called for the collection of the written Qurʾān to be compiled as a book.[95] This action was ordered to insure that the community did not lose God's revelation as many Qurʾānic reciters were killed in the Battle of Yamāmah. Importantly, the decision was one to preserve the revelation, not to elevate the writtten word or to implement any educational change. Indeed, the written musḥāf of ʿUthman reenforced the supremecy of the oral revelation over the written. The first written recension of the Qurʾān is incomprehensible to any one who does not already know the text by heart. As a memory aid to one who is nearly a *Hafiz*, the Arabic pointing (short voweling) is omitted.[96]

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94. Translation taken from Graham, 81.
95. This is based on the traditional account. See Ahmed von Denfer.
96. Another interesting fact about the ʿUthmanī recension of the Qurʾān is that there are variant "readings" of this text. The existence of variant readings is a simple fact of Islamic tradition and all of these variants are said to have been from the Prophet himself. See Graham, *Beyond the Written Word*, and von Denfer, *ʿUlūm al-Qurʾān*, 3.

The Value of the Qurʾān in Continued Lived Tradition

It is important to recognize that the values of oral transmission of the Qurʾān, memorization, and recitation continued long after the life of Muhammad. While the values have been adapted over history, these same values continue, to some degree, to inform Islamic values today. One of the most striking impressions of travel to Muslim countries is hearing recited Qurʾān in the marketplace, taxicabs, and on television. Qurʾān reciters are widely respected and some achieve regional fame for their skill. And, the "living Qurʾān" in the form of the living tradition of Islamic institutions such as the Caliph was another Islamic value that delayed the adoption of printing. The Muslim tradition that existed during the Ottoman Empire was conceived as the continuation of this strand of Islamic history. The Ottoman Sultan was the Caliph, the successor to the Prophet Muhammad in the Sunnī view. And, the Ottoman tradition of recitation and Islamic education (as well as the normative tradition of recitation and education throughout Islamic history) was shaped in the image of this foundational period of sacred Islamic history--that is, traditions and values that are both rooted in and that reference the sacred period of the Prophet's life and early Muslim community.

Western scholars often look to the Qurʾān to find the source of Islamic institutions. The assumption is that if one looks to the text and combs through it carefully, one will find a reflection of Muslim social institutions or at least a justification for them. This is, in part, due to our scholarly bias towards written scripture. The ultimate illustration of this is Max Muller's collection of "Sacred Books of the East." Such a method of categorization is predicated on a particular view of scripture. Rightly, scholars recognize the epistemological importance of the Qurʾān, from this perspective. However, it is more fruitful and more closely aligned with

traditional Muslim epistemological beliefs to, instead, "look around" and situate the Qurʾān in this period of sacred history and beyond, to find the roots of Islamic institutions.[97] To put it another way, step away from the physical, written Qurʾān and ask what the function of the Qurʾān is in Muslim religious practice and society, rather than privileging the content of the text to the exclusion of all else. This approach is what Paganini apparently did-- hoping the success of the Gutenberg Bible in Europe would be repeated when he shipped his Qurʾāns to the Ottoman Empire. Orientalists would, hundreds of years later, take this same view looking to the text of the Qurʾān for explanations for all Muslim behavior and institutions.[98]

The Value of Oral Tradition

The orality of the Qurʾān, as one of the crucial Islamic aesthetic values, played a role in the relatively late adoption of printing in the Muslim world. The basic questions concerning the "nature" of the Qurʾān are: what is the Qurʾān and how is it oral? how does the nature of the Qurʾān impact printing? These questions, treated by Graham, are important in understanding the initial gap between Islamic values and print values.

In general and certainly from a traditional perspective, the Qurʾān is "essentially a book to be heard, not read."[99] Qurʾān literally means recitation. And, numerous times the Qurʾān describes itself as both a qurʾān and The Qurʾān or the scripture (*al kitāb*).[100] This sense of

97. As opposed to "looking to" the Qurʾān. Seeking to find its ritual role within Islamic Tradition.
98. This idea will be explored in the next chapter looking at the work of English Orientalist Edward Lane.
99. Graham, *Beyond the Written Word,* 79.
100. Ibid., 129.

orality remains in the Islamic world today. Qurʾān permeates daily life in formal prayer (*ṣalat*) and in its constant reference in talismanic phrases: al-hamdu lillah (Praise God), subhan allah (God is exalted), and bismillah (In the name of God).

The written Qurʾān may "fix" visibly (and with supreme calligraphic artistry) the authoritative text of divine word in a way unknown in the history of the Vedic texts among Hindus; but like the Veda, the authoritativeness of the qurʾānic text is only realized in its fullness and perfection when it is correctly recited aloud. In other words, the book of holy writ (kitāb) in Islam is ultimately not a written or printed document, but a holy "reciting," or "recitation," which is precisely what the Arabic word qurʾān means.[101] The thrust of Graham's argument is that the oral funciton of the Qurʾān is underestimated by scholars of religion.[102] This focus on the written by Westerners approaching Islam accounts for much of Europeans shock at the "late" adoption of printing in the Muslim world.

In traditional Islamic society, the spoken Qurʾān contributes to the meaning of the "text." That is, the orality of the Qurʾān contributes to the experienced meaning of the scripture. Non-Arabic speaking Muslims recite Qurʾān to an extent, even if the basic phrases required for ṣalat are just memorized as sounds. For these Muslims, still there is merit in hearing the Qurʾān, in the sound of the Qurʾān there is blessing (*baraka*).[103] Regarding the category of "scripture," Graham concludes that the Muslim conception of scripture is unique in the interplay of the oral and textual, and the idea of the textual being epistemologically

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101. Ibid., 80.
102. Ibid., 79-89. He makes a very detailed argument that I will not map out here.
103. Graham, *Beyond the Written Word*, 55. Michael Sells, *Approaching the Qurʾān: The Early Revelations* (Ashland, Oregon: White Cloud Press, 1999), 230. Make note of Sells and Graham on this point.

preferred is called into question. Indeed, if we want to be more precise we must distinguish clearly between the "written Qurʾān" and the oral Qurʾān.

Scholars and non-Muslims who privilege the written text over the oral in meaning are missing a significant part of the tradition. The consequences of overemphasizing the written Qurʾān is to miss the importance of recitation and learning the Qurʾān from direct oral transmission. In other words, it is to move away from the shared, "living" Qurʾān and move towards the silent, individualistic study and reading of the modern world. With this uniquely Muslim view of scripture (nearly analogous to the Vedas, Graham observes), Europeans first evaluating the Muslim experience with typography were at a disadvantage. They missed a crucial aspect of Islamic culture and the arts of Islamic books. The oral tradition is not simply the written text read aloud. Instead, the written and the oral coexist equally. Paganini's "Venetian Qurʾān" serves as an example of an early instance of this misunderstanding.

The Value of Calligraphy

The beauty of Islamic calligraphy, one of the Islamic religio-aesthetic values characterized by respect for the written word and elaborate artistry should be given more credit for the delayed adoption of printing in the Muslim world. Aesthetic expectations were high given the centuries of tradition of decorating books, particularly the Qurʾān, with the finest calligraphy. Growing out of the aforementioned Muslim view of the Qurʾān as the speech of God (*kalam allah*), as the oral became written a tradition of adorning the written speech of God developed. The religious art of calligraphy developed early in Islamic history and spread throughout Islamic lands. As the art developed, different styles of script developed, one of the

most unique being the Maghrebi script found in Morocco. A great deal of regional pride and identity was and is associated with these different scripts. To illustrate the point, the Maghrebi script has developed such a unique form over time, that it poses a scholarly challenge today. Reading Maghrebi script from different periods of history requires a fair amount of technical expertise.

This rich visual tradition started with adorning the Qurʾān and has become a hallmark of Islamic architecture and public spaces.[104] Books were meticulously copied and decorated. The art of the book was highly developed for many texts, most of all the Qurʾān. So, the art of the book being what it was, expectations of the reading public were high. When contrasted with the inability of the early typographers to replicate this style, it is easy to imagine how the Ottomans would have been unimpressed and unthreatened by this new technology. Additionally, for those who were trainied in calligraphy, the very practice of adorning the word of God was, and continues to be, a form of religious practice.

In the 1500's, the typographic press could not deliver an aesthetically pleasing product in Arabic script. In fact, it was not until the mid-1800's that the Arabic typographic press in England could deliver a quality product.[105] Those literate in the Arabic script had expectations of calligraphy for many texts, most of all the Qurʾān. An element of regional pride and identity factored into the scripts, as we will see in Moroccan print history later around the 1800s.

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104. Bloom and Blair, *Islamic Arts*, 220. Bloom and Blair underscore the importance of calligraphy by citing it as the penultimate explanation for the delayed adoption of the printing press in Islamic lands.
105. Roper, "Arabic Printing and Publishing in England before 1820" *Bulletin-British Society for Middle Eastern Studies* 12 (1985): 25.

Consequently, the importance of calligraphy as a religio-aesthetic Islamic value, should be considered among the most important factors in the slow adoption of the printed media of the Muslim world.

Education as a religio-aesthetic value

In addition to the other values discussed so far, the traditional Muslim education system can be seen as an important religio-aesthetic value that played a role in the delayed adoption of printing in the Muslim world for the following reasons: memorization was a prized skill and texts were taught in the context of a formalized teacher-student relationship. Printing did not reenforce these values.

First, memorization was a value that pervaded many layers of the education system. It was a crucial skill for efficient copyists of manuscripts. Hand copied manuscripts, especially Qurʾāns, had a place in the larger scheme of Muslim education. Copyists typically had the manuscript memorized or had mneumonic ways of remembering chunks of information correctly. They were the first line of defense in the correct transmission of a text. Texts were checked against the knowledge of a master, usually orally.[106]

Memorization was taught at a very young age in the traditional Islamic education system. Regarding the text of the Qurʾān, many children had memorized Qurʾān to an extent, depending upon one's access to education, in a school designed for reciting Qurʾān (kuttub). These schools gave children a feel for the Qurʾān. From an early age, memorization was taught

106. See Sayyid Nasr, "Oral transmission and the book in Islamic education" in Atiyeh, ed, *The Book in the Islamic World,* 55.

and was a valued skill among the educated. The system of the ʾijāza (diploma) illustrates the importance of studying with a recognized master--the connective tissue of the traditional education system. One would travel to learn a text with a respected shaykh (lit. elder, spiritual teacher) who then, in turn, certified the student to teach the text when proficiency had been reached. There is a *hadith* attributed to the Prophet: "it is dangerous to take the printed word as your shaykh." Memorization with the guidance of a qualified teacher was and continues to be a prized skill among traditionally educated Muslims.[107]

The values of the traditional Muslim education system are important to the argument, because one of the major markets for religious texts would be the education system. Ottoman fatwas do not explain in depth the decision to prohibit religious printing, so it is important to ask how might the education system have been affected by typographic texts. Was the government protecting the system? Was the authority of the ulema being protected? The evidence suggests that the typographic printed text simply did not fit the system--given the traditional Islamic values, visual expectations of the reading public, and the institutional importance of personal, oral instruction. There were plenty of religio-aesthetic reasons not to adopt the printing press, without entering power politics into the equation.

Secondly, the centrality of the teacher-student relationship in the traditional Islamic education system contributed to the delayed adoption of the printing press. Central to the traditional Islamic education system was the teacher- student relationship. A hadith alludes to the necessity of learning from a living teacher in order to augment/ bring to life the written

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107. In the next chapter we will explore how colonialism has changed traditional education, etc.

text. This value is also vital in the Islamic mystical tradition known as Sufism (*tassawuf*). Lengthy treatises exist in the Sufi tradition about the importance of learning one's Islam and spiritual practice from a living shaykh, there is an elaborate set of manners (*adab*) governing the nuances of this relationship. Ultimately, a written text is more an aid to memory or a guide for one's preparation before spending time with the master. The main event is the lecture delivered to the student.[108] In a system so thoroughly vested in oral tradition, lecture, and the blessing (*baraka)* of the shaykh, I think it is misguided to see the Ottoman delay in adopting printing as a way of preserving the ulema's power. The ulema wielded a level of interpretive power in this system. That is true. But, ignoring the aesthetic mismatch between tradition Islamic books, educational values, and early typographic printing in order to reduce the matter to a power play by the ulema is to miss the major religio-cultural issues.

What I am highlighting are normative, traditional Islamic values: traditional book aesthetics, Muslim views of the Qurʾān, the value of oral tradition, the value of calligraphy, and Islamic educational values. These values important to traditional Islamic society illustrate solid religio-cultural objections that could be levied against the printing press. And, these reasons are often overlooked in explaining Muslims delayed adoption of printing. In the next chapter, common Orientalist explanations will be seen and analyzed. Defining this "normative" tradition illustrates how Europeans--Paganini, in particular--misunderstood Islam and its book arts. Early typographic attempts and later critiques of the Ottoman edict against the technology provide evidence of a cultural misunderstanding. Looking comparatively at early

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108. See Sayyid Nasr, "Oral transmission and the book in Islamic education" in Atiyeh, ed, *The Book in the Islamic World,* 98.

Muslim experiences with the printing press, the patterns of adoption of the press show an acknowledgment of these "normative" Islamic values, and it took the pressure of European colonialism and the invention of a new printing technology (lithography) to consider modifying these values in the 18/19th centuries.[109] But, this pattern is only apparent when viewing the histories of several Muslim countries.

The typographic press was eventually embraced in Muslim countries. Viewing these experiences in several Muslim countries, it appears that the pace of adoption involved a weighing of the costs and benefits. The traditional religio-aesthetic values of Islamic education, oral tradition, recitation, traditional views of the Qurʾān, calligraphy, and book art were present. However, Muslims were motivated to adopt the printing press when external pressure was great. For example, rising European power motivated Ottoman emissaries to look to France and consider using the press in Ottoman Turkey as a way of bolstering Ottoman power through mass education in "useful sciences" like geography. Thus, the typographic press was adopted when there was a significant political motivation. In the case of lithography, there was a means of mass producing texts while maintaining fidelity to the traditional book arts, so there were not always intense political motivations involved. This theory is based out of reflection on and analysis of the case study of several Muslim encounters with print technologies- specifically, I have looked at Morocco, Egypt, Ottoman Turkey, Muslim India, and, to a lesser extent: Sudan, Central Asia, Yemen, and Iran. In the next chapter, I will argue

109. Thank you to Alan Godlas for suggesting this comparative approach-- given my access to secondary literature and primary literature, mostly in translation.

that colonialism provided the "problem" to solve, catalyzing the adoption of printing in Muslim countries.

Technical Problems in Printing Arabic-script

The cultural conditions in traditional Islamic countries did not encourage typographic printing, due to the religio-aesthetic values I have outlined: traditional book arts, Muslim views of the Qurʾān, the value of oral tradition, the value of calligraphy, and Islamic educational values (e.g. memorization and intimate teacher-student relationship). Even if all other cultural and religious conditions supported typographic printing, there were, as I have mentioned, significant technical hurdles to leap. While I do not want to suggest that the Ottoman Empire was simply reactive to early European type-products, I will argue that it could only hurt matters that the initial experience with typographic printed Qurʾāns (of all texts) fell so short of one's typical expectations of a manuscript Qurʾān. The Ottoman Empire, at that point, was at the height of its powers and likely looked down on these early typeset printings condescendingly--not really threatened or compelled to suppress it. Rather, aestheticaly it appears that the Empire simply had no use for these renditions.

The ambivalence towards the printing press indicates a lack of perceived need on the part of the Ottoman elite. There are debates amongst historians regarding the cause for the ban on Arabic script printing (and, thus, Ottoman Turkish). Some suggest that the Sultan and his advisors had the jobs of calligraphers in mind. If protecting the jobs of calligraphers was so important, then why allow the importation of Arabic script texts from Italy and the rest of

Europe? And, Muslim travelers documenting their observations on the utility of the press scarcely mentioned the application of the press to religious texts.

Arabic was difficult to print. By the time of Paganini's "Venetian Qurʾān" printing in the Arabic script was still not very sophisticated-- and, certainly not as ornate as the rich calligraphy expected by the literate population. I have mentioned earlier that the notion of a "poor man's Qurʾān," Paganini's goal for his Venetian Qurʾān, grates against the Muslim view of the Qurʾān. This poorly produced text was aesthetically dissatisfying. Theologically, it does not make sense to treat the Qurʾān to such poor production standards, nor to expect that every Muslim needed a printed copy of the Qurʾān given the high importance placed on memorization and the oral tradition. Paganini's Qurʾān illustrates technical limitations in printing the Arabic script. It also illustrates a misunderstanding of several important points about the Muslim view of the Qurʾān and observations about the nature of the Qurʾān in Muslim piety.

Misunderstanding Muslim scripture and typography

Very early after Gutenburg's invention of the typographic press (c. 1450), there were attempts to transfer the technology into new languages. Jewish communities were printing in Istanbul in the early 1500s and, some say, in Fez, Morocco around the same time. The Sephardic Jews in Istanbul brought knowledge of the technology from Andalusia where they had recently been expelled. Armenian Christian communities applied the technology to Armenian language texts under Ottoman rule. In Europe, Italy established a number of print shops with varying levels of success. Italy had become a leader in paper production after the fall of Baghdad and Damascus. A number of Muslim markets relied on Italian paper for their

manuscripts. As mentioned, it was in Italy, that the first typographically printed Qurʾān was produced.[110]

The Qurʾān was printed in the shop of Antonio Paganini, a Venetian printer.[111] In the Qurʾān, he was looking for a best-seller to help pick his print shop up out of financial trouble. It was not the success he had hoped for. The Venetian Qurʾān was printed in a crude script and, unfortunately for Paganini's business, illustrated some of the technological problems and religio-cultural misunderstanding that caused his run of Qurʾāns to flop.[112] No matter which language one is printing in, typographic presses required a great deal of technical expertise and a significant capital investment, neither of which Paganini possessed in Venice's competitive printing market.[113]

Type sets were not cheap in European languages, which had a different style of character, a non-cursive script; while Arabic had as many letters but was a cursive script with intitial, medial, final, and independent forms.[114] Practically speaking, this meant there were over 600 characters in an Arabic type fount as opposed to 275 in a European language fount. So, by virtue of printing typographically, there was a great deal of expense and there were multiple technical hurdles to overcome,[115] in addition to the linguistic expertise in Arabic

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110. See E. Hanebutt-Benz, D. Glass, and G. Roper, *Middle Eastern Languages and the Print Revolution: A Cross-cultural Encounter* (Westhofen:WVA-Verlag Skulima, 2002), 151-176. Also see Kreiser, *The Beginnings of Printing in the Near and Middle East*, 11-12.
111. E. Hanebutt-Benz, D. Glass, and G. Roper, *Middle Eastern Languages and the Print Revolution: A Cross-cultural Encounter* (Westhofen:WVA-Verlag Skulima, 2002),51.
112. Kreiser, *The Beginnings of Printing in the Near and Middle East*, 39. Look here for an explanation of his choice ot print the Quran
113. Many scholars of print history make this point.
114. In addition to the four forms, there are ligatures and other vowelling.
115. Geoffrey Roper, "Arabic Printing and Publishing in England before 1820" *Bulletin-British Society for*

required to assemble, edit, and proof the text. The challenges were too great. The Venetian Qurʾān was unattractive. The type print was simple compared to the calligraphic scripts that had developed in the Islamic tradition since the 9th century. The number of misspellings throughout this edition of the Qurʾān suggests that the typographer, indeed, was not proficient in the Arabic language.[116] The text was flawed certainly. The religio-cultural misunderstandings that made this edition possible are almost as grave as the typographical errors.

First, the primary religio-cultural misunderstanding was based on Paganini's flawed conjecture that because the printed Gutenburg Bible was a success, so would a printed Qurʾān. To begin with, the inspiration to print a Qurʾān in typography was based on the huge success of the Gutenburg Bible, said by many to be the first "best seller" in typographical print. Who can blame Paganini for looking for the next "best seller?" He wanted to turn to the east and profit from the Muslim market, rich in books already, before someone else got to it. In terms of marketplace, it seemed like a great move. By 1525, one might imagine, Paganini would be selling Qurʾāns to Muslims from Morocco to India. This Christian model was described as the "poor man's Bible"[117] meaning those who could not own a lavishly decorated Bible could, at least, own a Bible. A familiarity with Muslim book arts, Qurʾānic arts, in particular, would

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Middle Eastern Studies 12, (1985): 7. To place this in perspective (the hurdles), with the considerable resources of 19th century England, scholars at Oxford and Cambridge often were frustrated by the inability to publish their research and translations because of type limitation. This started to turn around in 1820, see Geoffrey Roper, "Arabic Printing in England before 1820."

116. That's not to immediately discount their work. Some of the typographers were able to memorize the texts they were type-setting accurately without any understanding its meaning.

117. Abd al Razzak, *Kingdom of the Book*.

suggest that the poor man's Qurʾān exists not as a cheaply produced volume but in the air--that is, an oral one.

Conclusion

In this chapter I have argued that we can explain the relatively slow adoption of printing in the Muslim world by the importance of a set normative Islamic values: those concerning revelation, transmission, living institutional tradition, orality, calligraphy, and education. Regarding the case of the Ottoman Empire, the decision to disallow religious printing was one based on an Islamic aesthetic and an Islamic tradition with educational and theological values. Printing did not support the advancement of these religio-aesthetic values and, thus, was not perceived as a useful technology, per se. There is evidence beyond the Ottoman case that supports this view. Islamic communities welcomed lithography and embraced print particularly when political circumstances seem to force the issue. What is absent from the evidence, however, is a dogmatic avoidance of new technologies.

The early history of the typographic press in the Ottoman Empire shows, first, a European misunderstanding of Islamic book culture and the nature of the Qurʾān and, second, an Ottoman openess allowing the technology to be used in its capital by non-Muslims. When typography entered Ottoman borders, the Empire was at its zenith. The technology could have been kept from entering Istanbul if the technology itself was viewed as objectionable. The Ottoman Sultan wielded that power. But, it was allowed into Istanbul for the millet communities to use. Alternately, Muslim printing could have been established initially under

the authority of the Sultan,[118] that is, a printing shop set up under the sultan, and developed for religious use, if extraordinary value was seen in the printing press. However, the sultan did not see such value and this could not have been helped by the fact that the "poor man's Qurʾān" inadequately reflected the expectations of the reading public-- in essence, providing an example of this technology's shortcomings when evaluated against existing Islamic religio-aesthetic values.

118. Several scholars of Muslim printing history have made this point.

CHAPTER 4

TAKING THE PLUNGE: MODERN CONSIDERATIONS SURROUNDING THE LARGE SCALE ADOPTION OF PRINTING IN ISLAMIC LANDS

> Our alphabetic "book culture," like our "book religion," is not even the same as the "book culture" (or "book religion") of sixteenth- or seventeenth- century Europe, let alone that of classical antiquity, the Medieval or Renaissance West, or the great literary civilizations of Asia past and present. It is essential to be aware of this if we are to escape falling into provincialism or anachronism in our understanding of other cultures and eras.[119]

The passage above serves as an instructive starting point for this essay on printing in predominantly Muslim countries. William Graham's *Beyond the Written Word* explores the meaning of one the most deceptively simple religious categories: scripture. Examining the sacred "texts" of Judaism, Christianity, Islam, and Hindu tradition, he concludes that "texts" are not always written and even those that are written do not function the same across religious traditions. To put it plainly, a "book" is not always a "book." Religious or not, the meaning and function of a "book" changes through time and within its cultural environment.

The misrepresentation of early Muslim printing can be understood by this lack of awareness of dynamic "book culture" articulated by Graham. Orientalist scholars judged Islam,

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119. Graham, *Beyond the Written Word*, 29.

Muslims, and the absence of book printing[120] and private presses harshly. The technology of the printing press, like a book or "scripture," appeared to be an obviously positive cultural technology, understood by Orientalists with reference to the European history and the Gutenberg typographic press. As with the "book," technologies must be understood within a cultural, historical, and religious context.

Existing narratives of Muslim printing are traced back to observations of Orientalist scholars whose accounts provided an image of Muslim society to Europe, and now "the West." Scholars accompanied Napoleon during the French occupation of Egypt starting in 1798. Colonial administrators in Egypt, India, and Ottoman Turkey recorded their observations for the reading public, at least for government officials back in Europe. Our understanding of Muslim printing can be traced back to these Orientalists (like Edward Lane) and colonial administrators who held power. We now have, in English, the observations of Muslim scholars, administrators, and travelers against which we can check these Orientalist narratives about Muslim printing. European narratives about Muslim printing emphasize the role of Islam. With these Muslim sources, I argue that the adoption of printing by Muslims in modern times cannot be understood outside of the context of European colonialism and its complex power relationships. Nor can it be understood without considering the cultural significance of the invention of lithographic printing in 1795. European colonialism and lithography must be entered into the discussion, because the timing of early Muslim printing coincides with these important events, yet they are often omitted from narratives about the history of Muslim

120. Here I am referring to both typographic printing and lithographic printing.

printing. These factors explain the trajectory of Muslim printing as much as traditional Islamic religio-aesthetic values regarding the book.

"*Islam is a Barrier to Printing*"

In contrast to the commonly held oversimplification that Islam was "a barrier to printing," I argue that Muslim experiences with the printing press are much more nuanced than that; furthermore, any discussion of Muslim printing must involve European colonialism and lithography. To exclude these topics from the discussion of early Muslim printing does an injustice to the complexity of the story and privileges the category of "Islam" to the exclusion of other strong, relevant historical forces. In Thomas Carter's *The Invention of Printing in China: And its spread Westward* there is a chapter entitled "Islam is a Barrier to Printing." Carter's characterization of Islam and his use of Islam as an explanation for Muslim print history echoes a narrative tradition born out of the period of European colonialism. On the surface, readers of Carter's chapter[121] may get the impression that there is a Qurʾānic mandate against the typographic printing press. An Orientalist trope that he is implicitly perpetuating is that *religion* is privileged above all other categories of identity for the Other, but not for the modern, civilized European. Similarly, Edward Lane, the British Orientalist, included vivid descriptions of Muslim "superstitions" in two full chapters of his *An Account of the Manners and*

121. Carter is, indeed, articulating a widely held view expressed by Edward Lane and countless historians. Interestingly, Celebi argued for the Ottoman press invoking similar ideas of progress, needing to "modernize," etc.

Customs of the Modern Egyptians. He points to religious belief as a primary factor in the dearth of books and printing in Egypt at the time.

These representations are not fabricated. Rather, the Orientalist interpretation of evidence and subsequent communication back to the colonizers is the significant object of analysis. If we shift our attention from the content of Orientalistic accounts of printing back to colonizers we find that Orientalist accounts originate from a position of power-- one that includes the ability to travel, to document, and to impose one's own questions and frame of reference on the colonized. The fact that we can identify such elements that formed the complex of power that was the ground of Orientalistic viewpoints, however, does not necessarily completely negate their perceptions of Islam in general and printing in the Muslim world, in particular. In other words, the pendulum of representation must not swing so far as to say that religion (i.e. Islam) is not a factor in the relatively delayed adoption of printing by Muslims. That would be, I think, to appeal to another trope, that the Other is modern and civilized because they do not value religion. Instead, many Muslim sources suggest that Islam was a vibrant cultural force *and* the printing press could prove useful in the immediate problems presented by growing European military power and colonialism.

Muslim printing as a Response to European Power

The history of Muslim printing in Arabic script is compressed into roughly 250 years. This fact highlights a profound difference between the history of printing in Europe (which spanned over 550 years) and its history in Islamic lands. Printing looms large in European history due to its role in the Protestant Reformation. While Arabic presses were not operating

in Muslim lands until 1727. Orientalist scholars emphasize this time lag between European and Muslim printing, citing it as evidence of a Muslim "objection" to printing.[122]

The story of printing in Islamic lands is colored by these European views of themselves and the Modern World. However, the problem is not simply one of Westerners who are hyper-critical of Islam. In addition, the problem is being able to deconstruct the complex network of religious, cultural, political, and technological factors involved in Muslim responses to printing.[123] Such a deconstruction is rare when one is living in the historical moment. In order to accomplish this deconstruction, I will comparatively look at the adoption of the printing press in Ottoman Turkey, Egypt, Morocco, and India.

The Early Ottoman Press

As mentioned, the history of Muslim printing, both typographic and lithographic processes, is a short one relative to the history of printing in Europe. Muslim presses in Arabic script did not gain widespread acceptance until European colonial powers had firmly established themselves from Africa to India (c. 1830). There is an important, albeit brief, moment in Muslim printing that preceded Napoleon's invasion of Alexandria in 1798. The Ottoman typographic press operated under the leadership of a Hungarian convert to Islam, Ibrahim Muteferrika, from 1727 until his death in 1745. Print shops had operated in Istanbul, the Ottoman capital, since Jewish exiles and Armenians established their own Hebrew and Armenian presses in the 16th century. Millet (non-Muslim Ottoman subjects) communities

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122. "... Muslims object to printing their books." See Edward Lane, *An Account of the Manners and Customs of Modern Egyptians* (New York: Ward, Lock, and Co., 1890), 260.
123. See Edward Said, *Orientalism* (New York: Vintage Books, 1978). He describes a 2 way misunderstanding

subject to Ottoman law were permitted to print religious and secular texts in their respective languages-- Hebrew, Armenian, and Greek.[124]

As for the various reasons advanced for the adoption of the press, Muteferrika touted the political reason, above all, by arguing that the printing press would help the Ottoman Empire to counter Europe's advances in technology, military sciences, and practical sciences like geography and linguistics. Muteferrika wrote his treatise *The Usefulness of Printing* in 1726 submitting it to the Ottoman government. In the essay, he urged that Muslim printing be allowed and supported by the Ottoman state. As might be expected from the title, Muteferrika argued that printing would help to build Ottoman power:

> Books are also a tool for perfecting the nation and the state, a method of increasing the majesty of the empire, and of becoming the protector and preserver, until the last day, of arts and sciences and recorded events from the miscalculations of man.[125]

Muteferrika's goal had practical appeal. European military and technological advances were known to the Ottoman élite by this time. In fact, Muteferrika benefitted from several years of work conducted by Chelebi Mehmed and his son Said looking to Europe for government and military techniques which could benefit the Ottoman Empire. The Ottoman Grand Wazir had sent Chelebi Mehmed as a special envoy to the court of Louis XV to forge a political alliance with France, with knowledge and technology transfer in mind.[126] Moving away from the basics

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124. Thus, the first Arabic script typographic press in a Muslim country was founded in Aleppo, Syria in 1706 by Arabic speaking Christians.
125. Cited in Atiyeh, *The Book in the Islamic World*, 287.
126. Fawzi Abdulrazak, *The Kingdom of the Book: The History of Printing as an Agency of change in Morocco*

of "factories and fortresses,"[127] Said pushed to establish an Arabic-script (Ottoman Turkish using the Arabic script before 1925) printing press in Istanbul.

In their appeals to establish a government printing press, both Said and Muteferrika invoked the spectre of an imposing foreign force. Said, son of Chelebi Mehmed and later named Grand Wazir, was more secure in his social position and thus more direct in articulating the rising tide of European power in his letter to the Sultan:

> Why do Christian nations, which were so weak in the past compared with Muslim nations, begin to dominate so many lands in modern times and even defeat the once victorious Ottoman armies? ... Muslims should awaken from the slumber of heedlessness... Let them be informed of the conditions of their enemies. Let them act with foresight and become intimately acquainted with new European methods, organization, strategy tactics, the study of geography: also the sciences of navigation by naval charts such as led the Christians to the discovery of the New World and to the conquest of Muslim land.[128]

In addition to the political reasons for adopting the press, Muteferrika also focused on the educational benefits that book printing would bring to the Empire, although to a degree, he saw printing's educational benefit to be in the service of their political benefit. First, concerning the purely educational benefits, he wrote: "If there are numerous books on history, astronomy, logic, the affairs of the state and nation, and geography, this altogether will create

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Between 1865-1912 (Boston: Boston University Press, 1990), 85.

127. Abdulrazak, *The Kingdom of the Book*, 85.

128. Quoted in Lord Kinross, *The Ottoman Centuries, the Rise and the Fall of the Turkish Empire* (New York: Morrow Quill Paperbacks, 1977), 380-381.

tremendous educational benefit."[129] Here, clearly, Muteferrika saw the press as a vehicle for broadening Ottoman educational scope. Yet, second, he did see their educational benefits as a handmaiden to their political importance, invoking their importance in creating greater preparedness for catastrophes. He asserted that abundant, printed books are a good "way of creating safety from sudden catastrophes and the changes arising in the poor memory of men."[130] With this cultural reserve, knowledge and the laws of the state can be preserved for posterity. Explicitly citing fear of a foreign power, Muteferrika recalls when the Mongols conquered "the Abbasids, the books and compositions of the scholars and writers were dumped into the Tigris and their writings washed away."[131] So, both Muteferrika and Said couched their arguments against the rising tide of European power. And, each saw the printing press as a tool to match European power and to preserve culture and laws in the event of invasion. The image of the 1258 Mongol invasion of Baghdad is a powerful illustration of how European power was perceived and experienced by the Muslim population-- at very least, the Ottoman élite. So, although Muteferrika argued for the educational virtues of the press, its political need was strongly invoked as an antidote to the fear of societal destruction.

In addition to the virtue of the press in broadening educational scope, Muteferrika saw the press as a technical improvement over traditional methods of manuscript duplication, the press is capable of making the transmission of knowledge more accurate and less time consuming. Muteferrika stirred opposition from the ʿUlemāʾ and calligraphers by asking for

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129. Muteferrika cited in Atiyeh, ed., *The Book in the Islamic World*, 289.
130. Ibid., 286.
131. Ibid., 288.

formal authorization to print from the Sultan and the Shaykh al Islam, in the form of a firman (political ruling) and fatwa (religious decision) respectively.[132] Criticism of books printed in Arabic script revolved around the aesthetics of the printed script and that mass production increased the ease with which falsehoods could be spread. Muteferrika tried to address these criticisms suggesting that a printed edition produced with a good editor facilitated learning by eliminating the tedious comparison of manuscripts.[133] When the firman was issued in 1727, Muteferrika's request was granted by the Sultan and the Grand Mufti, ʿAbd Allah Efendi. However, the permission to print was not extended to religious texts. The popular explanation among scholars, is that the Sultan was appeasing the calligraphers and ʿulemā, who feared being marginalized by this new technology.[134] So, it is argued that in spite of the technical advantages of printing, the economic and professional interests of a special group delayed printing's adoption.

Muslim printing was not a one-dimensional response to European colonialism and military power. There were many levels of exchange of knowledge and skills. European traders came to the Ottoman Empire. Muslim traders and envoys visited and formed professional relationships with Europeans. Forces met each other in battle. What I am arguing for is not a "Europe acts-Muslims react" model, but rather to highlight a dynamic and complicated relationship in which, to some degree, European colonialism influenced and provided the impetus for the Muslim adoption of the typographic press and later the lithograph. Europe

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132. William Watson, "Ibrahim Muteferrika and Turkish Incunabula," *Journal of the American Oriental Society* 88 (1968): 436.
133. Muteferrika cited in Atiyeh, ed., *The Book in the Islamic World*, 289.
134. This is widely accepted but not universally.

possessed political power and, by extension, was able to control the narrative of the relationship and had the power to represent and shape the "Orient."[135] Nevertheless, Muslim travelers and the Ottoman documents presented above provide a counter-narrative that showed no mention of superstition, but an emphasis on political concerns of European colonialism and technical amazement with lithographic print processes.

Europeans were not the only ones to fuel the stereotype of "Muslim societies as backward/ in need of 'progress'." In Efendi Said's proposal to the Ottoman Sultan, he writes of some familiar Orientalist tropes: the conquering, modern, victorious "Christian nations," contrasted with "slumbering" Muslims who should "awaken" from their social decline. Indeed, the issue of rising European power was being debated and being interpreted in a number of ways in the Ottoman Empire during the 18th century. This period of Ottoman-European interaction[136] would be drawn upon, acting as a framework almost, by the Orientalists who arrived in Muslim countries with and after Napoleon's invasion of Egypt. Although Orientalists would use the trope of the backward Muslims for their own purposes; Said used the trope of the backward Muslims to motivate them to adopt printing![137] Contrary to the concerns that conservative technology-fearing Muslims might have, discussion surrounding the first Arabic press in Istanbul, while addressing Islamic concerns, put political concerns in the foreground as Ottomans felt the rising military and political power of Europe.

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135. Edward Said, *Orientalism* (New York: Vintage Books, 1978).
136. This point supported by Katib Chelebi and the legal concept of *maslahah* (common good).
137. Said's reversal of this particular narrative foreshadowed a common modernist Muslim narrative.

Printing and Colonial Experience

By emphasizing the press' political and educational efficacy, the Ottoman Empire introduced the Arabic script press as a response to European power, but not formal colonialism since the Ottoman Empire (at its core) was not actually colonized but pressured by Europe. The colonizing of Egypt was the next major event in printing history in Muslim countries.At this stage in the history of Muslim printing, the key factor was the need on the part of Muslim, first, to respond to the colonizers printed communiques, and more specifically to control and coordinate government, even while Muslim scholars were concerned about the epistemo-methodological potential of the press to misinform. While Napoleon's "civilizing mission" to Egypt was short lived, it had far reaching implications since it served as, for many, the first significant printing press in the Arab world and it provided a model of printing for later administrations in Egypt and Islamic lands to adopt and modify. South Asian historian Francis Robinson puts it succinctly:

> Over the past two hundred years the Islamic world system has been overwhelmed by forces from the West, forces driven by capitalism, powered by the Industrial Revolution and civilised, after a fashion, by the Enlightenment. The symbolic movement, when the leader's standard overtly passed to the West, was Napoleon's invasion of Egypt in 1798. From this moment Western armies and Western capital overran the lands of the Muslims ...[138]

138. Francis Robinson, "Islam and the West: Clash of Civilisations?" Anniversary Lecture, p. 2.

Napoleon brought Egypt's first Arabic typographic press along with a French printing press. The French language press was used to coordinate troops and to disseminate information from the scientific group that was cataloguing Egypt (culminating in *Description d'Egypte*) along with military forces. The Arabic press was used predominantly for communiques to the Egyptians--defining and explaining the French policies and intentions.

A Muslim response to one such communiqué exists in English. ʿAbd al Raḥman al Jabarṭī was a Shaykh educated at al Azhār, the preeminent Islamic university in Cairo. He wrote an account of Egyptian history including the French occupation from 1798 to 1801.[139] In this chronicle, al Jabarṭī documents some of the shock that Egyptians felt. Writing with a sharp intellectual's curiosity, he weaves amazement and interest in French culture and innovation with scathing critique. One of the most amusing portions of the manuscript is al Jabarṭī's dismantling of Napoleon's first communiqué to Egyptians, unleashing his grammatical skills on Napoleon's first effort to communicate with the colonized population in Arabic. al Jabarṭī responded negatively to the first statement, writing: "... they printed a large proclamation in Arabic, calling on the people to obey them and raise their 'Bandiera.' In this proclamation were inducements, warnings, all manner of wiliness and stipulations. Some copies were sent to Cairo ..."[140]

al Jabarṭī was impressed, he wrote, by the learning of the French scholars. He was not impressed at all with the first Arabic proclamation released by Napoleon. Roughly four pages

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139. Abd al-Rahman al-Jabarti, *Chronicle of Napoleon in Egypt* (Princeton: Markus Wiener Publishers, 1993).
140. Ibid., 4.

are dedicated to picking apart the Arabic grammar, inappropriate use of the colloquial register, and Napoleon's forced use of Muslim idioms. Specifically, the proclamation opens with the traditional Muslim opening: "In the name of God, the Merciful, the Compassionate. There is no god but God. He has no son, nor has He an associate in His Dominion."[141]

al Jabarṭī exhibits the refined grammatical skills of one educated in a traditional Muslim education system. Having read line-by-line Qurʾānic commentaries (tafsīr), he patiently and methodically dissects Napoleon's grammar, usage, and representation of his mission:

> His statement 'I revere His Prophet' is conjoined to what goes before, as one lie joined to another, because if he respected him he would believe in him, accept his truth, and repect his nation. His statement al-Qurʾān al-ʿaẓīm (the glorious Qurʾān) is joined to 'His Prophet,' that is, 'I respect the glorious Qurʾān,' and this too is a lie, because to respect the Qurʾān means to glorify it, and one glorifies it by believing in what it contains. The Qurʾān is one of the miracles of the Prophet which proves his truth, and that he is the Prophet to the end of time, and that his nation is the most noble of nations. These people deny all that and lie in every thing they enumerate.[142]

One thing that amazes me about al Jabarṭī's account is the collectedness of his tone. French troops have hit the shores of Alexandria, war ships are visible on the horizon, and he cooly analyzes the Arabic grammar, usage, and the Muslim idioms. With historical awareness, he compares Napoleon's words with what al Jabarṭī knows about the recent French revolution,

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141. Ibid., 24.
142. Ibid., 31.

looking for incongruities. That's not to say he does not take some entertaining jabs at the French mission. It does indicate, though, that this man was exceedingly well trained as a member of the ʿulema.

His sharp response to the printed French proclamation, in light of what we know of the ʿulema in Istanbul earlier, exhibits the ʾulema's anxiety over the printing press's negative capability. Recall Muteferrika's attempt to quell the fears of the ulema: traditional Islamic scholars did not like the potential of the press to spread misinformation. In the absence of a reliable editor, of good character, the press could disseminate misleading documents.

As we read earlier, traditional techniques of manuscript reproduction in the Islamic world were effective and refined. There were a number of libraries in Muslim capitals, usually associated with a mosque. It was a 1000-year-old system, dating back to the adoption of paper in the Islamic Empire. In many cases, books were copied in the context of a student-teacher relationship. This was crucial. When the teacher had checked the student's work and felt confident in his ability to teach the book, he was given an *ijāza* (diploma). Reputations of teachers were well known, given the traditional art of biography.[143] In this context, the checks and balances severely limited the ability of one bad teacher or editor to infect the sea of Islamic knowledge, or knowledge in general. The printing press, traditional ʾulema thought, had the potential of circumventing this important system that insured the reliability of knowledge. It is not that the manuscript system was viewed as flawless, as copies were

143. One's reputation in piety and memory were currency in the traditional system of education. Biographies were written of early religious figures (e.g. Companions of the Prophet Muhammad) and contemporary figures who possessed "saintly" qualities.

compared by scholars and students for accuracy. The printing press opened the potential for unchecked and widely circulated texts.

al Jabarṭī's scathing and thorough critique also comments on the ʾulema's beliefs about the press. Without saying it explicitly, he exhibited characteristics of the traditional ʾulema's view of printing. On one hand, his analysis makes a fool of Napoleon exposing his misuse of colloquial (uniquely spoken, in Arabic) register, incorrect Arabic grammar, and lies. It is as if al-Jabarṭī is saying: "Look, the Emperor has no clothes" in front of a wide Egyptian audience. On the other hand, he is highlighting the dangers of a machine that facilitates the wide circulation of misinformation. al Jabarṭī was a man of distinguished learning and the average Egyptian would not have the training to conduct the same informed analysis. In the traditional Islamic education system of al Jabarṭī, the opportunity for correction was always in a forum between the teacher and student, the chances for the proliferation of misinformation are, in theory, greatly reduced.

When the French colonial mission ended in 1801, Egyptians had seen the press operate as an instrument of coordination for the government and military. Having seen its effectiveness in this role, Muhammad Ali, Pasha (r. 1805-1849) and founder of the modern Egyptian state, appropriated the printing press for this purpose when he established a government-owned Arabic press in the Cairo suburb of Būlāq in 1821. This began a new chapter in the history of Muslim printing, because the government press was based on the colonial experiences twenty

years earlier. To use the language of Fawzī ʿAbd al Razzak, the "colonial model" of printing (i.e., administered by a colonial power) shifted to and blossomed into the "official model" (i.e., administered by a domestic government) of the press.[144]

Beyond the "official" and "colonial" distinction, it is important to keep in mind that the first typographic presses were operated by Arabic speakers who were sent to Europe for training. The operators of the Būlāq print shop were largely trained in Italy.[145] Italy was long established as a printing force and as a paper supplier, since the fall of the Damascene and Baghdadī paper mills in the 13/14th centuries. As with the Muteferrika's Istanbul print shop, the inspiration came from Europe although Muteferrika's shop was staffed largely by non-Muslims. Early Muslim printing was, also, a site of inter-religious collaboration.[146] Printing was a topic of interest for Muslim travelers to Europe, who sought to bring back useful ideas for governmental and military institutions-- to learn from the European "fortresses and factories," as Chelebi Mehmed was instructed.[147] So, even after the colonial forces withdrew, their influence was felt in the realm of Arabic printing for many years.

An Orientalist Reading of Muslim Printing

The history of early Muslim printing is one of collaboration and exchange. In Istanbul, Chelebi Mehmed and his son Said looked to the Court of Louis XV for inspiration and to the millet communities of Sephardic Jews and Armenian Christians for technical expertise. This

144. Abdulrazak, *The Kingdom of the Book*, 99. Abdulrazak argues that there are 3 models of printing in Muslim history: the official (i.e. government sponsored), the colonial, and the private presses. In any one country/region, he argues, there may be instantiations of these fundamental models.
145. This two-way exchange of technical expertise, personnel, and culture is described by Tim Michell.
146. Kreiser, *The Beginnings of Printing in the Near and Middle East,* 65.
147. Abdulrazak, *The Kingdom of the Book*, 85.

dialogue and adaptation is absent from our existing narrative of early Muslim printing, which appears to be rooted in Orientalist observations like those of Edward Lane.

What Lane and others colonial administrators did was exoticise Islam. As I mentioned above, Edward Lane devotes two chapters to "Superstitions" in his *An Account of the Manners and Customs of the Modern Egyptians.* He interpreted Islam and Muslim piety disrespectfully by writing that the "respect which most modern Muslims pay to their Prophet is almost idolatrous."[148] Such a statement highlights the manner with which Lane and other Orientalists tended to interpret Islam and is the subject of another study.[149] However, it is crucial to understand that our narratives about Muslim printing are shaped by men whose vision was clouded, here, by a mix of Euro-Christian world-view, the colonial imbalance of power,[150] and misunderstanding of technical limitations of early typography. Accounts of Edward Lane's life in Cairo, his friendships with Egyptians sound like he, in particular, was very genuine. Power and historical circumstances framed these early accounts--not necessarily malicious intent. Returning to William Graham's descriptive analysis of "our book culture" and "that of classical antiquity," one's own modes of thinking affect one's perceptions and the questions one asks. In the Orientalist accounts of Muslim printing, both the technological blindness that Graham describes and a cultural blindness (influenced by colonial power, theories of racial and cultural superiority) shaped descriptions of early Muslim printing.

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148. Lane, 259.
149. See Edward Said's *Orientalism*. "Orientalism is a style of thought based upon an ontological and epistemological distinction made between 'the Orient' and 'the Occident' (most of the time)," 2.
150. While I'm trying to focus on the religious, included in this "imbalance of power" are theories of racial and cultural superiority which cannot be included here but cannot be ignored. Some accounts of Edward Lane that I read alluded to these beliefs that made his observations possible.

Building on Lane's account of Muhammad's role in Muslim piety, he is equally quick to explain the timing of Muslim printing as an irrational religious "hang-up:"

> .... and they fear some impurity might be contracted by the ink that is applied to the name of the Deity, in the process of printing, or by the paper to be impressed with that sacred name, and perhaps with words taken from the Koran. They fear, also, that their books, becoming very cheap by being printed, would fall into the hands of infidels; and are much shocked at the idea of using a brush composed of hogs' hair (which was at first done here) to apply the ink to the name, and often to the words, of God. Hence, books have hiterto been printed in Egypt only by order of the government .... I am acquainted with a bookseller here who has long been desirous of printing some books which he feels sure would bring him considerable profit; but cannot overcome his scruples as to the lawfulness of doing so.[151]

Let me juxtapose al Jabarṭī's burning critique of Napoleon's first proclamation with some of the points that Edward Lane puts forward in the above quotation. Napoleon began his Arabic proclamation with a tradition Muslim opening: "In the name of God, the Merciful, the Compassionate. There is no god but God. He has no son, nor has He an associate in His Dominion." Trying to make quick political allies, if it were well known that Muslims might "fear some impurity" to the name of "the Deity," God, Napoleon, I think, would have left this off of his Arabic proclamation. So, I have to question just how widely held this so-called fear of impurity was. It is possible that Napoleon was simply ignorant of a widely-held fear of

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151. Lane, 260-261.

impurity given that his memo was far from perfect, as al Jabarṭī entertainingly laid out. However, this observation of Lane's is absent from al Jabarṭī's assessment-- an important point that I believe an Azharī shaykh would not have omitted. It suggests that Lane was voicing an unpopular Muslim perception of the printing press.

Another point of Lane's is that "they fear their books... would fall into the hands of infidels." I have not found this critique anywhere else in my research and have found that, instead, early Arabic printing on the typographic press took place in Europe (presumably whom Lane means by infidels). The Ottoman Sultan allowed Arabic books to be imported from Italy as early as 1500--even Arabic Qurʾāns. While there are interpretations of purity laws that people apply to handling Qurʾān, I have not found this applied as an argument against printing categorically. This is a point al Jabarṭī does not really speak to, but Ibrahim Muteferrika argued for the press for fear that books would be lost at the hands of a foreign power, like the Mongols sacking of Baghdad from Medieval Islamic history. I am not sure if Lane was unaware of Muteferrika's arguments in Istanbul. It is difficult to imagine since Muteferrika's treatise reappears in Morocco 30 years after Edward Lane wrote his *Manners and Customs of the Modern Egyptians*. Whether or not he was omitting it for the tastes of the British reading public, the absence of this counter-point serves to exoticize.[152]

Hog's hair brushes are, in fact, effective when working with oily liquids such as ink. And, it is conceivable that a legal scholar might reason that the religiously unclean animal should in

152. Lane was trained in lithographic printing in his brother's print shop, so it is possible that he had heard of the Ottoman printing developments in Istanbul. I have not found any evidence to clarify this point. The important point is that the comparison between the Istanbul and Cairo experiences detracts from the exotic portrayal of Lane.

no way come into contact with the name of God. There were disputes about branding the name Muhammad on a camel or other livestock. Branding would cause some bleeding and the unclean liquid should not come into contact with the Prophet's name.[153] However, I must rely on al Jabarṭī here. Had the view been widely held popularly or among religious scholars, I think he would have taken the opportunity to expose Napoleon's ignorance of Egypt, Arabic, and Islam. Yet, he did not mention it anywhere.

Indeed, books were printed "in Egypt only by order of the government." Muhammad Ali was impressed with Napoleon's use of the printing press as a means of coordinating troops, sharing findings among the *Institute d'Egypte* scholars, and representing the colonial administration to the Egyptians. The governmental model adopted by Ali had more to do with appropriating the colonial precedent of Napoleon than with Islam. Muslim India adopted printing in an entirely different fashion-- a decentralised, private enterprise model.[154] I will discuss Muslim India later, but wish to highlight Lane's implication of "Islam"[155] rather than the European colonial mission. That is to say, the differences between European and Muslim printing histories and tendencies are explained not by colonial power but by Muslim "inconsistencies and superstitions."[156]

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153. Lane, 48. Similarly, Muftis debated the merit of copying Qurʾān on paper imported from Europe with watermarks on it in the 13/14th c.
154. See Ian Proudfoot in Riddell and Street, ed, *Islam: Essays on Scripture, Thought, and Society*, 45.
155. "Islam" is used as a symbol of the irrational. See Edward Said's comments in *Orientalism* about characterizing the Orient as childlike and irrational, 40.
156. Lane, 261.

Writing between 1833 and 1835, Edward Lane's authority[157] and comments about the Bulāq press are generally accepted for the time. The Bulāq press was used to print some cultural and religious books later, but it started as a government press and printed "more than a hundred books... most of them for the use of the military, naval, and civil servants of the government."[158] With scant mention of the Napoleonic model, Lane stresses the political nature of this press. Muhammad Ali has "established a printing office; but the works which have issued from it are almost solely intended for the instruction of his military, naval, and civil servants." Ali had also established a printing press dedicated to newspaper printing, in Arabic and Turkish, which reported primarily on the "affairs of the government" like Napoleon's presses 20 years earlier.[159] In short, Muhammad Ali was inspired not by popular Muslim sensibilities about printing but by the French use of the printing press during Napoleon's three year colonial mission to Egypt.

While Lane writes that the Egyptian Muslims "object to printing their [Muslim] books,"[160] he breaks from some Orientalist writers who say that there were no books to be found. Instead, Lane observes that there are many libraries and books.[161] Largely, these libraries were associated with mosques. Curiously, Lane then proceeds to describe the process of writing in rich detail. Given his extensive research based on conversations and first-hand experience, the details sound like something a copyist might relate to him: "The leaves of the book are seldom

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157. See Edward Said, *Orientalism*, 23. The idea of drawing on the authority of Edward Lane.
158. Lane, 201.
159. Lane, 517.
160. See Lane, 201. Also see Ayalon, *The Press in the Arab Middle East*, 167.
161. Lane, 190.

sewn together... the paper is thick and glazed... imported from Venice and glazed in Egypt. Reeds are used instead of pens; and they suit the Arabic character much better. The Arab, in writing, places the papers upon his knee ..."[162] And, he continues for another half page.

There are two points of interest in Lane's description of traditional manuscript copying above. First, the level of detail sounds as if Lane was relating, close to verbatim, a conversation with a copyist or scribe. They were abundant in Islamic countries by this point, as the manuscript tradition had been developing since the Abbasid's adoption of paper in 750. Secondly, Lane highlighted that the reed is better suited to the Arabic language than the pen--an interesting technical observation that he granted to manuscript production but not to printing. Lane did not have technical insights into printing. Rather, in printing, Lane pointed to "impurity" of the ink, books reaching the "hands of infidels," and hogs' hair brushes. It sounds like a different set of rules, a different religion even. More than with manuscripts, the printing press (typographic, in particular) presented a host of technical limitations when applied to the Arabic language in the 18th and 19th centuries (e.g., cost of a fount of type, difficulties due to Arabic's cursive script). The difficulties of printing in Arabic script were not limited to Muslim countries bearing the weight of colonial occupation and weakening economies. It is worth noting that Oxford and Cambridge scholars of Arabic and Persian had a difficult time printing their research typographically as late as 1820.[163] Few people could articulate to Lane the technical process of Islamic book printing, unlike manuscript

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162. Ibid., 190-191.
163. Roper, "Arabic Printing and Publishing in England before 1820," 51.

production.[164] The typographic press was new to the Muslim world, and part of a larger complex of growing European power and aggression. There were technical shortcomings of the press, and, tied to European power, it was not quickly adopted by those who valued the established traditional methods of duplication linked to the Islamic education system. Orientalism filled the silence with "superstition."

These Orientalist narratives about early Muslim printing continue to propagate today. There are multiple phases in Muslim printing. I limit the discussion to the earliest phase in order to comparatively examine the narrative against Muslim voices and history. And, this early period influences narratives about "Islam" today. The reliance on "superstition," conservatism, and the irrational to explain away complex differences continues today. Anecdotally, a number of my friends learned this narrative in history classes,[165] a *Wall Street Journal* article echoed it,[166] and much of the secondary literature accepts it. In short, Lane's observations about Muslim printing circulate in unlikely circles today and gain authority with time. Muslim voices contemporary with Edward Lane suggest a different story.

A contemporary Muslim scholar, Rifaʿa Rafiʿ al-Tahtawi, served as the imam (prayer leader) for the first student mission to France from 1826 to 1831.[167] Like al-Jabarti, Tahtawi was educated in the traditional Islamic sciences, but also possessed significant knowledge about Europe. Commenting more directly about the press than Jabarti, Tahtawi wrote a balanced

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164. This is surprising since Lane was trained in his brother's lithographic print shop.
165. Not that Muslim printing should be the center-piece of a Middle Eastern history course, I was disturbed to hear a friend of mine recite the argument of fear and conservatism as the reason for the "delay" in the Ottoman adoption of the typographic press.
166. See Waldman & Pope, "War on Terrorism is Against Muslims," *The Wall Street Journal*, 9/21/2001.
167. Ami Ayalon, *The Press in the Arab Middle East* (New York: Oxford University Press, 1995), 168.

opinion of the press: "In these papers (*jurnalat*) every Frenchman is permitted to praise and censures as he pleases ... Nothing in the world is so full of lies as these papers."[168] Tahtawi observed the potential good of everyone having a voice, in theory. Trained in an intellectual tradition which produced detailed, reasoned commentaries of Qurʾān, Tahtawi did not see the appropriate care invested in the French papers. As with al-Jabarti, his argument does not revolve around hog hair brushes or infidels, rather the quality of the writing was inadequate to these scholars. Indeed, the value of the word was being diminished by such thoughtless treatment.[169] The emphasis on the quality of the writing explains better the position of these two scholars and why in the 1840s Tahtawi himself began publishing periodicals.[170]

Impact of Lithography on Early Muslim Printing

In addition to European colonialism, another factor that sets early Muslim printing apart from European print history was the invention of lithographic printing by Alois Senefelder in Germany, 1796. Typographic printing in the Arabic script posed a technical challenge and initial investment unparalleled by European languages. For a type fount in Arabic, a print shop had to purchase roughly 625 characters as opposed to 300 in European languages. Arabic is written in a cursive script and has four forms per letter--initial, medial, final, and independent--not just upper and lower cases. Early typographic efforts in Arabic script fell

168. Tahtawi, *Takhlis*, p. 150- quoted from Ayalon, *The Press in the Arab Middle East*, 168.
169. This is an idea developed, among others, by Timothy Mitchell, *Colonising Egypt,* 132-141.
170. Ayalon, *The Press in the Arab Middle East*, 168.

short of, for Muslim audiences, the Islamic book aesthetic standards that had developed over Islam's long manuscript tradition.

Lithograph was better suited to producing aesthetically pleasing Arabic script. This is a technological development rarely mentioned in Orientalist critiques or descriptions of Muslim view of printing. However, after the invention of the lithographic process--which Moroccan scholar Muhammad al-Ṣaffār will explain below--Muslim communities adopted it with enthusiasm.

Muhammad al-Ṣaffār was, like Jabarti, a scholar and religious leader. He travelled as an observer and religious advisor on a Moroccan diplomatic envoy to France. He took close notes of the mechanical (typographic) press. Hardly critical of this technology, al Ṣaffar describes the typesetter at work in the Impremerie Royale:

> He sets down the first line (of letters) on a metal rule and puts it in the frame, then he composes the second line, and so on until he fills [the frame]. Even if he does not understand the writing and cannot read it, he knows its equivalent in type. We tested one of them by writing out a line [in Arabic], and he set it down exactly. We told him to break it up, which he did, and there were thirty-four letters. Then he returned each to its place swiftly and without a mistake. This completely astonished us.[171]

al-Ṣaffār wrote his account in 1845- 1846, twenty years before Morocco started a print shop and roughly fifty years after the arrival of Napoleon's colonial expedition. While Morocco had

171. Susan Miller, ed, *Disorienting Encounters: Travels of a Moroccan Scholar in France in 1845-1846, The Voyage of Muhammad As-Saffar* (Los Angeles: University of California Press, 1992), 202-3.

not yet established a press, al-Ṣaffār took keen interest in typographic and lithographic techniques that he saw. Absent from his account is any comment on the inappropriateness of the technology for printing Arabic or religious texts. He was on a government mission to explore European methods that might prove useful at home. As a scholar and religious leader, I think he would have expressed concern if it were present. Instead, there is a great deal of enthusiasm in al-Ṣaffār's detailed description of the lithographic process:

> The most amazing writing machine we saw there was a special way of printing a book regardless of the writing, be it Arabic or non-Arabic, eastern or western [script], or whatever. They do this by taking a sheet written on with special ink that is reddish, like the dye from walnuts. Then they fasten it to a stone. When they open it up, the writing appears on the stone just as it was on the page. With this stone, they print as many pages as they like; all of them emerge exactly like the original, without additions or subtractions, corruptions or alterations. I wrote a line with that ink on a piece of paper, which they then placed on a stone, and the writing became imprinted on it. Then they printed other pages from the stone, which came out exactly like the first page. [In this way] one can print an entire book in whatever handwriting one wishes.[172]

Once it was available, traditional Muslim scholars preferred lithograph for a number of reasons. One, the lithographic process did not involve the typesetter.[173] This both reduced the

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172. Ibid., 204.

173. Recall Ibrahim Muteferrika's appeal to the ulema on the necessity of a good editor. Indeed, the idea of a technician handling knowledge that he was not qualified to handle was disturbing to the religious scholars.

chance for errors in the text and was closer to the traditional manuscript workflow which had a long history and was a part of the traditional Islamic education system.[174] Aesthetically, lithographic printing did not compromise the unique character of calligraphic texts which was connected to regional identity and aesthetics of the book. Particularly, the Maghrebī script is still considered quite unique compared to other calligraphic scripts, a point of regional pride and a challenge for scholars trained outside of Moroccan manuscripts.

In Morocco, the first printing press was a privately owned lithograph press that was bought by a citizen, al-Rudani, and brought to Meknes. Along with the press, al-Rudani enlisted the help of an Egyptian printer who had technical expertise. When given to the ʾulama of Fez in 1864, they saw the lithograph as a way to revive Islamic tradition.[175] They knew the lithograph could produce numerous books while retaining the integrity of the Maghrebī script and Islamic book aesthetics. The ulama used the press as a way to put themselves back in the center of intellectual life and to revive Islamic tradition against the cultural influence of Europeans.

When the lithographic press arrived in Morocco, scholars interpreted the technology, debating its merits. Morocco has the reputation of being, typically, conservative, valuing and preserving Islamic traditions. One Islamic scholar in Morocco, a traditionalist, offered an argument in favor of the printing press (in this case, lithographic). The scholar, Muhammad Haqqi, presented a modified version of Muteferrika's *Means of Printing* in order to argue his case for the press as a tool for reviving the Islamic sciences and education. He opened his appeal

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174. Abdulrazak, *The Kingdom of the Book*, 33, and Miller, ed, *Disorienting Encounters*, 204.
175. An observation made by Fawzi Abdulrazak in *The Kingdom of the Book.*

with a ḥadīth (Saying of the Prophet): "What the majority of Muslims see as acceptable is then acceptable with God as well."[176] Haqqi appealed to the traditional Muslim more than Muteferrika's text 100 years earlier. Haqqi, a popular 19th century Sufi, invoked some Sufi terminology (*baraka, karama*) and stressed the blessing of printing many books, spreading Islamic knowledge.[177]

Early Muslim Printing in India

India's experience with the printing press illustrates the importance of lithography, as well. Printing in India was nothing new. Jesuit typographic presses had operated since 1556 in India. And, Christian missionaries operated a low volume typographic press in Madras, when in 1780 presses began operating in the capitals of Calcutta, Bombay, and Madras.[178] As noted by Proudfoot, the English Company "had an ideological preference for independent presses" and private enterprise, a much different environment than the Ottoman Empire to the west.[179] India, from the earliest days, based their print model on the private press. There were a number of private Muslim presses that printed traditional Islamic works; the first Muslim printing press was sponsored by the Nawwab Ghāzī al-dīn Ḥaydar in 1819.[180] Unlike the Ottoman printing experience, religious texts were immediately printed on this new technology in both Arabic and Persian-- printing the *Panjsūrah* (five sūras of the Qurʾān) and an

176. Abdulrazak, *The Kingdom of the Book*, 90. This account is drawn from Abdulrazak from sources available only in Arabic.
177. Ibid., 91-93. Again, contrast this blessing with the fear of "their books" falling into the hands of the infidels that Lane mentioned.
178. Proudfoot, 163.
179. Ibid., 163.
180. Ibid., 163.

Arabic dictionary, *Tāj al-lughāt*. Five years later, the Indian Company established new lithographic presses in each of its Presidency capitals as a cheap means of printing administrative documents. A few of the presses were given to the Bombay School Book and School Society and immediately applied to printing textbooks in local languages (e.g. Urdu, Gujarati).[181] Not ten years after the technology was adopted in Europe, a printing boom fueled by lithography flourished in Muslim India and throughout the subcontinent.

The mix of private/ independent presses and lithography made for a unique publishing environment, when compared to early Ottoman and Egyptian experiences with the press. Lithography was a profitable method. The first Muslim printer, Hajj Ḥaramain Sharīfain, in the print capital of Lucknow was said to be able to sell cart loads of Saadi's *Gulistan* and *Bustan* for any price; and, as his cart approached "he would be received with pomp."[182] Protected formally from any government involvement by the 1835 Press Act, Lucknow alone had over a dozen lithographic presses operating in 1848-- all Muslim owned and operated. Religious tracts and textbooks rated high among the 700 titles that Lucknow-Cawnpore (a prolific Persian-Arabic lithographic press) had printed by the middle of the 19th century.[183]

Lithography was much cheaper than the typographic press. In India, the lithographic press was adapted in unique ways that were unknown in Europe. In Europe and even in the Ottoman capital, lithography was used primarily for maps and graphs. When attempts were made to apply it to text, the results were seen as amateurish.[184] Whereas in India and most

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181. Ibid., 163.
182. Sharar 1975:107, citation from Proudfoot, 164.
183. Proudfoot, 164.
184. Ibid., 181. See the Malta decision of 1827, culturally- typography had a more authoritative and

Muslim lands, as illustrated by the Moroccan traveler Al-Saffār's comments, lithography was not only economical but fit the existing aesthetics of the book. Books could be mass produced while also utilizing the existing skills of valued calligraphers, who etched their designs for print.

Conclusion

By comparing Muslim responses to the printing presses, the idea of there being any "Islamic" response to printing becomes problematic. Muslims made arguments for the printing press, citing the "blessing" of producing many books, in Haqqi's case. And, in the cases of Ali and Muteferrika, some made very pragmatic arguments focusing on the practical value that the press has in organizing a government and strengthening military resolve in the shadow of increasing (and visible) European power. These various arguments suggest that there is not a mysterious, irrational Muslim bias against printing as Lane and others wrote.

The anxieties of common Muslims may be preserved in accounts like Lane's. However, that is no basis for constructing a view of "Islam" or an "Islamic" attitude towards printing. Lane draws on "superstition," and as another European observed: Muslims think "their sacred books would no longer be scriptures if they were printed."[185] These observations at very least elevate a folk view in the construction of the Other, while ignoring the views of educated elites in official positions of influence-- figures like Jabarti, Muteferrika, and al-Saffar. And, they

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official appearance. This decision illustrates this tension between Islamic book aesthetics and European expectations.

185. Contemporary writer of Edward Lane, quoted from Bernard Lewis, *The Emergence of Modern Turkey* (New York: Oxford University Press, 1968), 50-51.

ignore that books were commonly, in Islamic lands, read in the context of the traditional education system.[186] Listening to these voices calls Orientalist narratives into question. Reading their opinions together, given their different historical settings, exposes not a unified "Islamic" response to printing, but a shared set of traditional Islamic values surrounding the book and shared concern over European power. There was a common need to operate with an awareness of European colonialism, but the opinions and trajectories chosen were far from unified. Orientalist narratives of early Muslim printing emphasize religion. Yet, early Muslim printing must be understood by including religion as one influential category within the new political world forged by European colonialism.

186. There was an obsession with "the scarcity and extravagant price of Books" by Lane and other European observers. For many, this was a potential market and a great business opportunity. To me, it overlooks *how* and *where* information was consumed in traditional Islamic society. Quote from Matra-Banks letters in Richard Clogg, "An Attempt to Revive Turkish Printing in Istanbul in 1779," *Interational Journal of Middle Eastern Studies,* 10,1 (1979), 68.

CHAPTER 5

CONCLUSIONS

Looking at early Muslim printing from a comparative perspective, I found no uniform "Islamic" adoption of the printing press as previous explanations suggest. The idea that "Islam" is antithetical to print technologies is incorrect but not entirely unfounded. There are historical data from which this narrative derives. The factors which were germaine to the decision to delay adoption of typographic print technologies until the early 1700s are often ignored. The central tension in the story of early Muslim printing is: early Muslim printing cannot be understood without an understanding of Islam, yet Orientalist narratives (like those of Edward Lane and Thomas Carter) often privilege the category of Islam to the exclusion of all other factors. In such narratives, Islam is portrayed as monolithic, conservative, and antithetical to print technologies.

Authoring or reenforcing these narratives about Muslim printing, previous scholarship on the Muslim presses has dwelled on the late adoption of the typographic press relative to the widespread and rapid adoption of Gutenberg's press in Europe in the mid-1400s. Muslims and non-Muslims alike suggest that the Ottomans turned their back on "progress" at this historical moment. A comparative and historical analysis of early Muslim print histories illustrates diverse implementations of print technologies, problematizing the narrative of a monolithic Islam.

Yet, there are some common values evident in the comparative histories of early Muslim printing. Constructing a normative set of "Islamic values" is instructive to illustrate how printing did not necessarily support key values of Muslim society like: the value of oral tradition, the value of calligraphy, the Islamic educational values of the Teacher-Student relationship, and the prized skill of memorization. In this thesis, I argue that Muslims, and the Ottomans in particular (as the first Muslims to have contact with printing), were not turning away from an inherently useful technology out of fear and conservatism; rather, the technology did not solve any perceived problems for Muslims in light of the Islamic religio-aesthetic values outlined.

These Islamic values help to explain how the printing press was a poor match for Muslim society. These values comprise four general categories: the value of oral tradition, the value of calligraphy, the Islamic educational values of the Teacher-Student relationship, and the prized skill of memorization. To begin, Muslim views of the Qurʾān are different from Christian views of the Bible. The Qurʾān is, most importantly, a recitation of the speech of God and, second, a book written down. In previous Islamic information revolutions, the recording of the Qurʾān was only to preserve the "text" for posterity in a society that valued memorization of the entire "book." This orality has been present from the very beginning of Islam. With the writing of the Qurʾān, the art of calligraphy developed centuries after the first written Qurʾān. The art is interpreted as decorating the revelation of God, and many Muslims practice calligraphy as a form of silent reflection or meditation. Both forms, professional and personal, contribute to an aesthetic that would continue to be refined up to the modern period. By the time Gutenberg's

press was invented, Muslims could not see a need for the early typographic press which was quite crude when measured against the 1000-year-old Islamic book arts.

The comparative analysis of Muslim printing reveals patterns of adoption of the printing press (both typographic and lithographic) that can be explained by the "Islamic values" presented in chapter 3. Suggesting a set of Islamic values, or "essentializing," is not an attempt to over-simplify Islam. And, it is not an effort to reduce Muslims to religious automatons who act out of this set of values dogmatically. On the contrary, constructing this set of values illustrates the religio-aesthetic standards against which the technology of the printing press was measured. These Islamic values developed out of 1000 year history of working with paper and reach even further back to the life of Muhammad. Providing a framework of values helps to illustrate how Muslims negotiated unique historical circumstances and Islamic tradition. Each of the general values impacted the adoption of the printing press. First, the value of oral tradition meant that Muslims had a well developed means of transmitting knowledge via oral communication, thus diminishing the perceived need for a printing prees. Second, the value of calligraphy meant expectations for books were sophisticated, The elaborate calligraphy of the early typographic printing press could not match the calligraphy of the manuscript tradition. Finally, the Islamic educational values of the Teacher-Student relationship, and the prized skill of memorization diminished the need for mass-produced, typographic texts. Education was personal and books were only needed in the context of a teacher-student relationship. Books were copied, in this environment, as an exercise in memorization as well. While these values manifest differently across Islamic lands, these core values influenced the early adoption of the printing press by Muslims from 1700 to 1900.

In addition to the impact of the four Islamic values noted above, the history of early Muslim printing was affected by two forces absent from Europe's early experiences with the press: European colonialism and the invention of lithographic printing. Concerning the first, European colonialism, it affected the history of early Muslim printing by providing a model of printing (e.g., Napoleon's colonial press), colonial administrators and travelers wrote the seminal works from which our own narratives of Muslim printing derive, and European power and colonialism provided an impetus for Muslims to adopt the printing press (as a tool of cultural and military defense). Orientalist narratives explaining early Muslim printing fail to address these two profoundly important forces. The Ottoman Empire's elite, while not formally faced with colonization, were aware of Europe's rising power. Emissaries were sent to France to forge alliances and learn useful techniques of government. Said Efendi and Ibrahim Muteferrika presented the typographic press as a useful tool to promote education in the natural sciences, geography, and military arts. Presented as such, the Sultan and Shaykh al-Islam approved Muteferrika's printing shop but prohibited the printing of religious texts. The printing press was adopted as a way of responding to European power. This is seen again in Egypt, where the Bulāq press was established as an administrative arm of Muhammad Ali's government after seeing Napoleon's effective use of the printing press to manage his colonial army.

Second, the lithographic press's invention in 1795, affected the early history of Muslim printing by making possible the mass production of texts that conformed better to the aforementioned Islamic book aesthetics. Accomodating the religio-aesthetic value of calligraphy, lithographic printing meant Arabic calligraphers could lay out pages that looked

identical to those of the rich manuscript tradition. When lithographic technology became availble, Muslim societies adopted the technology fairly quickly and often printed religious texts without hesitation. The cases of Morocco and Muslim India show how the lithographic press provided Muslims with a mechanism to mass produce religious texts which conformed to the religio-aesthetic values of the manuscript tradition.

The story of Muslim printing is a uniquely Islamic information revolution. That is, the history and values of Islamic societies met with the technology of printing in a way that was shaped by these religio-aesthetic values. It is a complicated intersection rather than a reflexive denial of "progress," as has been argued by past scholars. Also, Muslim printing was nothing less than an information revolution in a series of such revolutions spanning across Islamic history. An "information revolution," defined broadly by Headrick, makes new kinds of thinking and communication possible. Thus, the adoption of the printing presses in Islamic lands is a moment in the broader story that began with events during the life of Muhammad, like the writing of ḥadīth by the Companions of the Prophet.

In calling the beginning of Muslim printing an Islamic information revolution, we must weigh European colonialism heavily in the analysis. For a cultural shift to be deemed an information revolution, certain criteria would have to be met. Most importantly, an information revolution must involve a change in information gathering, storage, display, communication, or systems of naming. This change must open new methods of thinking, as paper enabled design and construction of buildings to be separated. We see the Ottoman, Egyptian, Indian, and Moroccan presses all meeting these criteria. These revolutions were further complicated by colonialism, which provided an impetus to integrate printing into the

existing Islamic book culture. Significantly, the majority of predominantly Muslim countries today are former colonies. The first Arabic typographic press in Egypt was Napoleon's. The story of Muslim societies adopting printing runs almost parallel to European colonialists establishing operations in these same countries. Thus, the print history of the Muslim world is both compressed and not analogous to Europe's printing history. In fact, rising European military power was a major factor in the Ottoman decision to adopt the typographic press for Muslim use. Clear administrative and military utility had been recognized in France by early Ottoman envoys sent to research and establish political ties with France.

After Muslim printing was firmly established by the middle to late 1800s, the story of printing in Muslim countries quickly gets very complicated and convoluted as newspaper printing becomes popular. I have left that subject to another study, but it begins to point to the relevance of this early period of Muslim printing, In his work *Imagined Communities*,[187] Benedict Anderson asserts that print capitalism, in large part through the newspaper, forms a communal consciousness that is affirmed daily. Vernacular language communities, he argues, solidify and nurture national consciousness. Coupled with the rise of literalism, many of our contemporary political and religious problems come into focus. Understanding this early history of Muslim printing will help, I hope, unravel the network of the four Islamic religio-aesthetic values, politics, power, and technology that impacted this period of history.

As I have mentioned, the story of Muslim printing began to get even more complicated after 1850 when newspapers took off throughout Islamic countries. Indeed, the world and the

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187. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (New York: Verso, 1991): 5-7.

story of printing and technology has changed vastly since then. Technology is notoriously fast moving. Yet, many of the deeper forces remain no matter how they have changed on the surface. Islamic tradition is still, in the abstract, in negotiation with technologies--most recently, Internet technologies. European and American power continues to influence the representation of Islam--in many cases invoking old narratives born out of the colonial experience. The printing press is just one case. The Qurʾān is still a predominantly oral phenomenon. A walk through the streets of a Muslim city like Fez or Cairo is colored by numerous Qurʾān reciters playing on cassette players.

Since the beginning of printing in Muslim countries--as with Europe-- the modern idea of "literalism" is taking hold. Literalism is the idea that the printed book is to be read in one particular way, that the text, itself, carries authority. The printed text presupposes an individualistic and silent reader. There is no need to learn from a respected teacher in the context of a personal relationship. The experience is vastly different from many of the values of traditional Islamic education: hearing and memorizing texts, studying a text only in the context of a close teacher-student relationship, and reading manuscripts copied in the handwriting of a student or professional copyist. The network of issues surrounding "literalism" is vast, but seeing them in the context of this early move to printing can help detangle the intertwined issues of power, technology, and religion.

Islam is not a barrier to printing nor to any other technology, inherently. There are, however, patterns of adoption of print technologies in various Muslim societies. And, there are Islamic religio-aesthetic values against which the potential benefits of a technology are measured. Identifying these values helps to illustrate how the story of the early Muslim

printing press was not one of dogmatic conservatism, but complex negotiation with tradition and further complicated by the power relations of European colonialism. Studying the story of early Muslim printing and its unique trajectory exposes the inadequacies and omissions of prior narratives and these narratives' roots in European colonial observations. By understanding the Islamic religio-aesthetic values that informed Muslim decisions regarding printing, a modern Islamic informations revolution, we are better able to approach and understand the complex of current events which relate to or stem from the early Muslim decisions to print.

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APPENDIX A

DATES IN EARLY MUSLIM PRINTING HISTORY

1041-49	The first typographic press operates under Pi Sheng in China. Not widely adopted because of the number of unique characters in the Chinese language.
1485	Sultan Bayezid II prohibits Muslim printing in the Ottoman Empire
1514	"Book of Hours" prrinted, widely believed to be the first Arabic book printed (in Fano, Italy), linked to the Arab Christian community of Syria
1588	Italian merchants procured a letter of protection from Sultan Murād III establishing permission to export Persian, Turkish, and Arabic texts into the Ottoman Empire.
1538	Antonio Paganini's "Venetian Qurʾān" exported to the Ottoman Empire
1515	Fatwa issued by Shaykh al-Islam, permitted Christian and Jewish typographic printing presses to operate in Istanbul (Hebrew and Armenian).
1706-11	First Arabic press (in Aleppo, Syria) established by Syrian & Lebanese Christians. Printed the "Book of Pslams."
1727-49	Ibrahim Muteferrika's Arabic/ Ottoman Turkish press established in Istanbul for publishing secular documents only.
1798	Napoleon establishes Arabic and French presses in Egypt, Alexandria and Cairo
1801	Napoleon's colonial presses removed from Egypt
1803	Ban on religious printing relaxed in Istanbul- that is, the "Ottoman state printing works started to publish popular and intellectual works from the Islamic

	tradition"[188]-- still banned from the press were Ḥadīth (Sayings and traditions of the Prophet) and Tafsīr (Commentary on the Qurʾān)
1803	First complete Qurʾān printed in Kazan, Russia for Tartar subjects of the Tsar.
1817-55	Moveable type printing in Iran (55 known editions printed)
1818	Islamic texts published in Istanbul (e.g. Hasiyah al-Dawwani) from this point
1819-21	Muḥammad Ali establishes a government press in Bulaq, a Cairo suburb, for military use
1830	Printing appears in Iraq and Palestine
1832	Early lithography in Iran
1861	Ali's press is decommissioned
1864	Lithographic press brought to Meknes, Morocco; quickly moved to Fes
1869	Beginning of newspaper printing and subscriptions via post in Iraq
1874	Reintroduction of typography in Iran (lithography shops close in 1955) & First Muslim, Arabic press in Beirut, Lebanon
1874	Printed Qurʾān: due to dubious Qurʾāns from the Persian colonies
1877	Ottoman Press established in Yemen (Arabic)
1880	First Moroccan typographic press operating in Tangier
1883[189]	Mecca, Arabic press established

188. Kreiser, 5.
189. Dates are drawn from Messick's *Print Culture* or widely accepted.

APPENDIX B

NOTES ON ARABIC/PERSIAN WORD PROCESSING ON MAC OS X (v. 10.3.3)

These notes will expire quickly, but I want to document what I learned from my unwanted education in typography, Unicode, and Arabic/Persian word processing.

While I was working on this thesis, the Mac OS X was fairly new and totally Unicode capable. An important lesson that I learned is that Unicode capability means nothing if your word processing software cannot make use of the resources of the operating system. Microsoft's Word X for OS X was not Unicode capable at the time I started my project, thus it could not handle many of the diacritics needed for Arabic transliteration. Only recently Microsoft Office 2004 has been released and may solve the problems experienced with Arabic script and transliteration.

I wrote this thesis on the Mellel Word Processor v. 1.7.5 (written by Eyal Redler and copyrighted under Redlex), designed for the Mac OS X and directed towards the community Mac OS X users that need a versatile foreign language word processor-- it handles dozens of languages in addition to Arabic/Persian script with full transliteration capability.

Also, for a font, I chose the Gentium font which is free on the GNU license. As such, it can be downloaded free on the Internet. It prints better than it displays on the the screen, but it has served me well. It is based on the Times New Roman type and has both Regular and Italic (for foreign language words) faces.

I trust Arabic word processing/ transliteration will get easier as software catches up with the Mac OS. However, this is the solution I arrived at after considerable effort and research and, well, I am sticking to it.

To download the Mellel word processor, go to:

http://www.redlers.com/

And, the Gentium font can be downloaded from:

http://www.sil.org/~gaultney/gentium

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