Philosophical and Computational Approaches for Estimating and Visualizing Months of Revelations of Quranic Chapters

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Abstract

The question of why the Quran structure does not follow its chronology of revelation is a recurring one. Some Islamic scholars such as [1] have answered the question using hadiths (sayings and practices of the Prophet), as well as other philosophical reasons based on internal evidences of the Quran itself. Unfortunately till today many are still wondering about this issue.

Muslims believe that the Quran is a summary and a copy of the content of a preserved tablet called Lawhul-Mahfuz located in the heaven. Logically speaking, this suggests that the arrangement of the verses and chapters is expected to be similar to that of the Lawhul-Mahfuz. As for the arrangement of the verses in each chapter, there is unanimity that it was carried out by the Prophet himself under the guidance of Angel Gabriel with the recommendation of God. But concerning the ordering of the chapters, there are reports about some divergences [3] among the Prophet's companions as to which chapter should precede which one.

This paper argues that Quranic chapters might have been arranged according to months and seasons of revelation.
In fact, based on some verses of the Quran, it is defendable that the Lawhul-Mahfuz itself is understood to have been structured in terms of the months of the year.
In this study, philosophical and mathematical arguments for computing chapters' months of revelation are discussed, and the result is displayed on an interactive scatter plot.

Keywords: Text mining, Visualization, Chronology of revelation, Chapters arrangement, Quran, Lawhul-Mahfuz

1. Introduction

The Quran is an early medieval religious book, lying at the heart of the Islamic faith. It consists of 6236 verses divided into 114 chapters called suras. The chapters have unequal length and seem to have been roughly arranged in decreasing order of length. The longest chapter contains 286 verses, and the shortest one got 3 verses. Some verses were revealed in Mecca while others in Medina. According to Muslims each verse was revealed to Prophet Mohammad by God through Angel Gabriel at a specific place, in a given time, in a particular way, and for a well definite purpose. In general the revelation of the verses was driven by events and circumstances that were taking place.
Some verses were revealed as a direct response to some events or questions that were posed to Prophet Mohammad; others were revealed for appeasing and strengthening Muslims in their belief through social laws and recommendations. There are also verses that were revealed to explain other verses.

Based on Islamic resources such as hadiths (sayings and practices of Prophet Mohammad), it has been established that, chapters and verses of the Quran are not arranged according to their chronology of revelation. In fact several Muslims [2, 5] and non-Muslims such as [6] have derived probable periods of revelation of the Quranic chapters.

Logically after having dated the chapters, the next obvious question that one would expect, should be why is the chronology not followed?

In this study an attempt to answer this question by providing philosophical and mathematical arguments is performed.

As for the arrangement of the verses in each chapter, there is unanimity that it was carried out by the Prophet himself under the guidance of Angel Gabriel with the recommendation of Allah. But concerning the ordering of the chapters, there are reports about some disagreement [3, 4] among the Prophet's companions as to which chapter should precede which one.

It might be important to notice that, ordering the chapters according to the chronology of revelation will not make any difference, as far as understanding the Quranic text is concerned. In fact many chapters consist of a mixure of different themes.

The Quran is copy of a heavenly guarded tablet called Lawhul-Mahfuz (Q: 56:78, 85:21-22). The tablet contains everything in the visible universe, as well as the invisible ones.
According to my personal judgment, the answer to the above question is that, the exact yearly chronology of revelation was not known. In fact the companions of the Prophet namely Ibn Mas'ûd, Alî Ibn Abî Tâlib, and Ubayy Ibn Ka'b had presented to the calif Uthman different chronologies, when he was compiling the chapters. Moreover the Prophet himself did not ask them to record the chronology of revelation, because the message of Islam does not reside in its yearly chronology of revelation. So the lack of a unanimous chronology led the calif Uthman to order the chapters according to the Prophet's way of reciting the Quran during daily prayers, as well as the months of Ramadan. In fact Angel Gabriel made the Prophet revise the Quran twice during the last year of his life as reported by [3]. Definitely the recitation was done in a well defined order.

When analyzing each chapter and its verses with respect to their position in the current arrangement, one can realize that, there is a kind of logic and some repetitive patterns behind this arrangement. For instance long chapters have been placed at the beginning while short ones at the end. The fact that the chapter of Fatiha is placed before the chapter of Baqara shows that, philosophical reasons have also been considered. The same reasons might have led to the placement of chapter Al-Alaq (being the first to be revealed) after Al-Tin.

Based on this tangible fact, I think it might be desirable and necessary to try deepening our understanding of the logic and repetition patterns that might have been used to arrange the verses and order the chapters.

It is expected that widening our understanding of the logic could further help clarify problems related to verses abrogation as reported in [3].

This paper argues that Quranic chapters might have been arranged according to months and seasons of the year when the revelations took place.

2. Related Work

Anterior Islamic scholars such as [1] have explained the current structure of the Quran. In fact [1] has also referred to the master copy of the Quran located on the first heaven. It is that master copy on the first heaven which is a direct copy and summary of the Lawhul-Mahfuz. The Quran on earth is a copy of the one located on the first heaven.

To the best of my knowledge I have encountered neither a philosophical written document nor a mathematical one about the chronology of the Quran based on months and seasons of the year, when the revelations took place. Therefore this is the first of its kind.

3. Problem Statement

Why chronology of revelation is not maintained in the Quran? Does the Quran follow any other specific chronology?

4. Proposed Solution

First of all, there is need to realise that, there is a problem with chapters' chronology of revelation. In fact many Quranic chapters were not revealed at a time. Some chapters ended before the end of previously revealed chapters. So clearly there is a dilemma about which chronology to consider. Should one consider the beginning or the end of chapters' revelation?

Based on this dilemma, it might be reasonable to agree with the current Quran's structure, which does not follow yearly chronology of revelation.

As mentioned previously, Muslims have entirely agreed that the arrangement of the verses was made by the Prophet himself. Concerning the chapters there are reports such as [4]

suggesting that, the current arrangement of the chapters is a result of efforts made by the companions of the Prophet, based on his instructions given through his prayers and recitations during the month of Ramadan. In fact there is a hadith [8] saying that the order of many chapters such as the seven longest, the Hawâmîm, and the Mufassal was known during the lifetime of the prophet. Therefore the Prophet's companions have ordered chapters that were not explicitly numbered by the Prophet himself.

However one could still argue that, knowing the order of the seven longest, the Hawâmîm, and the Mufassal chapters does not justify the overall ordering of the chapters. In fact it is not mentioned that the seven longest chapters should come before the Mufassal, or the Hawâmîm should come after the seven longest. According to me, this argument could make sense if at least it was once reported that, the Prophet recited one of the Mufassal or the Hawâmîm before any of the seven longest chapters during the month of Ramadan.

Therefore it makes sense to agree with the opinion of Imam Malik [4] who said that, the companions numbered the Quranic chapters according to their understanding of Prophet's instructions given through his prayers and recitation during the month of Ramadan.

Now coming back to the question itself, I think philosophical and mathematical arguments could help clarify the chapters' arrangement.

4.1 Philosophical Arguments for Clarifying the Arrangement of the Quranic Chapters and Verses

I.   Spiritual Arguments

Muslims believe that, the arrangement of the Quranic verses and chapters was dictated to Prophet Mohammad by Allah through Angel Gabriel. The arrangement obeys the flow of Islamic ideology, and the purpose of the Quran. For instance having chapter Al-Fatiha (being a summary of Islam) at the beginning followed by Al-Baqara (touching almost every aspect of the Quran) shows that logical and philosophical reasons have been taken into consideration.

Knowing that Allah is the only One who knows the future and the invisible (Q: 11:123, 31:34), it is therefore logical to argue that the preserved tablet (Lawhul-Mahfuz) is expected to either omit or hide exact dates of coming into existence of creations.
In fact if this was not the case, then the guardians of the tablet as well as the Angel Gabriel would have definitely been able to know the future. This would obviously contradict one of the attributes of Allah. Based on this principle it is possible to affirm that, the realization of the tablet's content is made in a random manner that is solely defined by Allah Himself.
If the Lawhul-Mahfuz's content does not get executed in the order it is written, there is normally no way to expect the Quran as its copy (Q: 56:78, 85:21-22) to be arranged according to yearly chronology of revelation.

I think seasons and months of verses' revelation have been considered in the structural organization of the Quran. In fact seasons and months are more palpable facts than years. Human memory has tendancy to easily remember climate (seasons and months) than years. In chapter 9 verse 36 it is mentioned that: "The number of months in the sight of Allah is twelve (in a year), so ordained by Him the day He created the heavens and the earth…". This is an indication that the structural organization of the universe is divisible in twelve months. Knowing that the creation of the universe and the coming into existence of every creation have been written on the Lawhul-Mahfuz, it seems reasonable to imagine the Lawhul-Mahfuz itself structured in terms of the twelve months of the year. Consequently knowing that the Quran is a copy and summary of the Lawhul-Mahfuz, it is convincing to conclude that the structure of the Quran should resemble that of the Lawhul-Mahfuz. As conclusion one could suppose that, periods of revelation might have also been taken into consideration in the arrangement of the verses and ordering of the chapters. The month of revelation of a chapter refers to the beginning of its revelation. The Quran being structured in terms of months of the year indicates that, its message does not have an end, since months are rotating without ending.

4.2 Mathematical Arguments

The hypothesis is that, Quranic chapters might have been arranged according to months of revelation.
To validate this hypothesis, the following algorithm has been developed.

Algorithm

a. Let's start with definition of some variables needed for computing months of revelation of the chapters.

Let Y denote the number of years when revelation effectively took place
The Quran was revealed in approximately 23 years. About 3 years there was no revelation. Therefore Y is equal to 20 years of revelation.

Let M denote the number of months in Islamic calendar, which are 12.
Let m denote any given month.

Let S denote the total number of Surahs in the Quran, which are 114.
Let s denote any given Surah.

Let V denote the total number of verses in the Quran, which are 6236. The opening verse is only considered for chapter 1.
Let AvY denote average number of verses revealed per year.
Let AvM denote average number of verses revealed per month.

Now in order to compute the month of revelation of a given chapter, we do the following:

First compute average number of verses revealed per year, and then average number of verses revealed per month.

Using the above defined variables we get:

Average number of verses revealed per year i.e $AvY = V / Y$
Substituting with the respective values, we get:
$AvY = 6236 / 20 = 311.8$, we need to consider 311 verses per year, since a verse was never partially revealed.

Next we need to calculate average number of verses revealed per month. The reason why I did not directly divide 6236 by 20x12 will be given in the coming steps.

Average number of verses revealed per month i.e $AvM = AvY / M$
Substituting with the respective values, we get:
$AvM = 311 / 12 = 25.9$, we consider 25 verses per month for same reasons as above.

b. Now in order to compute revelation month of a given chapter, we do the following steps:

  i. Select a chapter and get its number
  ii. Sum all verses of the chapters coming after the chapter, and call it SumVersesAfter
  iii. Subtract SumVersesAfter from V, and call the result ActualComputingVerses
  Then compute ActualComputingVerses modulo 311, and called the result R1
  iv. If R1 is less than or equal to 25, then the first month of Islamic calendar (Muharram) was the month of revelation of the chapter, and stop,
  Else go to step v.
  vi. Divide R1by 25, and call the quotient Q, and check following steps:
    a. if Q is a natural number, then the month of revelation is Q,
    b. else the month of revelation is Q+1.

To validate the hypothesis, I am going to use chapter 96 which has got a known month of revelation. It was revealed in Ramadan.
To compute the month of revelation of chapter 96, one needs to subtract verses i.e chapters revealed after it.
So 18 chapters (97,…114) making total 111 verses, which have to be subtracted from the 6236 verses.
So 6236 – (111) = 6125 verses which have to be divided by 311 first, then by 25 if required, in order to find month of revelation of chapter 96.

First we divide the 6125 verses by 311 whereby the division stops as soon as the rest is smaller than the divisor. In other words we take 6125 modulo 311.

Let the result of 6125 modulo 311 be denoted by R1.

If R1 is 0 then the chapter was revealed during the first month of Islamic calendar that is Muharram.

If R1 is greater than 0, then we divide it by 25 whereby the division stops as soon as the rest is smaller than the divisor. In other words we take R1 modulo 25.

Let the result of R1 modulo 25 be denoted by R2.

Let the quotient of R1 divided by 25 be denoted by Q.

If R2 is equal to 0, then the month of revelation is Q, else it is Q+1.

The rest of the division to obtain
6125 : 311 = 19 years, and the rest is 216 verses , so 216 : 25 = 8 months, the rest is 9 verses for the 9th month which is the month of Ramadan.

Since there are about 25 verses per month, and chapter 96 has got 19 verses, then the remaining 6 verses belong to the next chapters which are chapter 97 and 98. And it seems that chapter 97 was also revealed in Ramadan since it is even mentioning the night of decision which is in Ramadan.

These calculations show that chapter 96 was effectively revealed during the month of Ramadan.

This method does not determine chapters' years of revelations. The computation of chapters' years of revelations has been done in [7], whereby machine learning techniques were applied to the Quranic text.

6. Result and Interpretation

Programming languages usually used for web application (Javascript, PHP, HTML, CSS) were used to compute the months of revelation.
Figure 1 shows a plot of surah (chapter) versus month of revelation. Chapters revealed in Mecca are represented with "*" markers, while "+" markers represent those revealed in Medina.
Focusing on a marker, displays a window mentioning the surah number followed by the month when it was revealed.
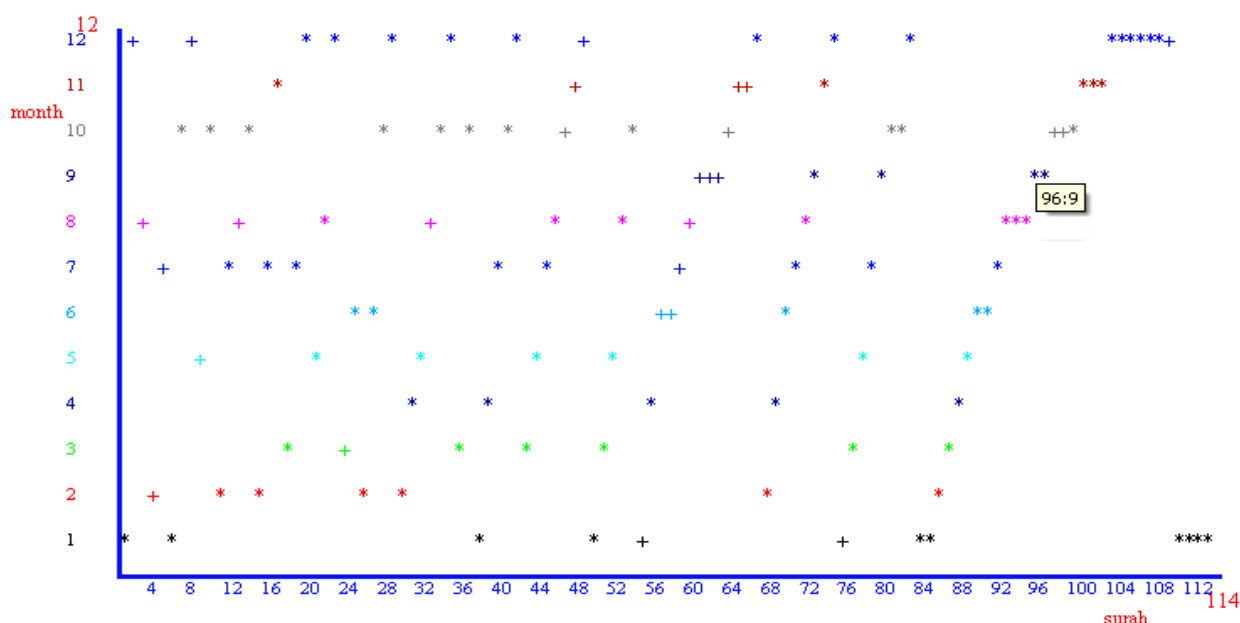

Fig.1. Plot of surahs versus months of revelation of Quranic chapters

It could be noticed that the fourth month (Rabi-uthani) has not got any chapter revealed in Medina, which is a striking result. Why is it so, needs to be further investigated.

The maximum number of Medinan chapters received in a month is 4, while for the Meccan ones, it is 14. This is quite normal since the Medinan chapters are mostly long.

Tabular form of the graphical result is shown in table 1.

Muharram (12 , 481)		Safar (7 , 754)		Rabiul-Awwal (7 , 475)		Rabi-uthani (5 , 283)		Jumadul-Awwal (7 , 449)		Jumaduthani (7 , 300)	
1	7	4	176	18	110	31	34	9	129	25	77
6	165	11	123	24	64	39	75	21	112	27	93
38	88	15	99	36	83	56	96	32	30	57	29
50	45	26	227	43	89	69	52	44	59	58	22
55	78	30	60	51	60	88	26	52	49	70	44
76	31	68	52	77	50			78	40	90	20
84	25	86	17	87	19			89	30	91	15
85	22										
111	5										
112	4										
113	5										
114	6										

Rajab (10 , 698)		Sha'ban (11 , 559)		Ramadan (7 , 122)		Shawwal (15 , 931)		Dhil-Q'ada (8 , 242)		Dhil-Hijja (18 , 942)	
5	120	3	200	61	14	7	206	17	111	2	286
12	111	13	43	62	11	10	109	48	29	8	75
16	128	22	78	63	11	14	52	65	12	20	135
19	98	33	73	73	20	28	88	66	12	23	118
40	85	46	35	80	42	34	54	74	56	29	69
45	37	53	62	96	19	37	182	101	11	35	45
59	24	60	13	97	5	41	54	102	8	42	53
71	28	72	28			47	38	103	3	49	18
79	46	93	11			54	55			67	30
92	21	94	8			64	18			75	40
		95	8			81	29			83	36
						82	19			104	9
						98	8			105	5
						99	8			106	4
						100	11			107	7
										108	3
										109	6
										110	3

Table 1. Chapters' month of revelation

Months	Order
Muharram	1
Safar	2
Rabiul-Awwal	3
Rabi-uthani	4
Jumadul-Awwal	5
Jumaduthani	6
Rajab	7
Sha'ban	8
Ramadan	9
Shawwal	10
Dhil-Q'ada	11
Dhil-Hijja	12

Table 2. Months of Islamic calendar

In table 1 the notation "month (x, y)" represents the month name, x is the total number of chapters, and y is the total number of verses of the chapters.

In each column, the first numbers are the chapters' numbers, and the second numbers are the number of verses of the corresponding chapters.

Table 2 shows the months' names and their positions in the Islamic calendar.

5. Benefits of Chronology of Revelation

5.1 Spiritual Benefits

According to some hadiths (Sahih al-Bukhari, Muslim, Ahmad, abu Dawud, Ibn Majah, Tirmidhi), there are moments or periods whereby prayers are most of the time accepted. Based on this idea, it is hoped that the knowledge of periods of revelation of the verses might assist understanding and memorizing them.

For instance it might be experienced that, analyzing, understanding, and memorizing a particular verse on a given month could be easier and more efficient.

At least from my own personal experience, I found that chapters revealed in the month of Ramadan tend to be easily memorizable when read during that month.

5.2 Practical Benefits

Could the Quran structure be a model of teaching?

The Quran has got a unique way of teaching. In the schools, usually teachers select a particular topic for every day; they do not mix topics, except when they depend on each other. In other words the teaching is conducted in a waterfall manner. Only after having covered a topic completely, then a previous or future topic is introduced. Most of us are used to this system, and find it good.

However the Quran has got a special way of teaching in the sense that it combines in a single chapter different themes or topics, which might not be related and dependent on each other. But the topics are either already taught or to be developed in the future.

The waterfall system or traditional system of teaching does not offer the students all the possibilities to regularly and iteratively test their understanding and imagination of previous or future chapters, as well as collectively relearn them for improving their understanding. The Quran has filled this lacking feature of the traditional learning system, and it seems to work, since billions of Muslims find it perfect for learning and memorizing its verses.

7. Conclusion and Future Work

This study has presented some philosophical and mathematical approaches for explaining the current arrangement of the Quranic chapters.
It has been explained that, the Lawhul-Mahfuz's content does not get executed in the order it is written, and for that reason there is normally no way to expect the Quran as its copy to be arranged according to yearly chronology of revelation.
However in this research it is suggested that, the Quran might follow another specific chronology of revelation. It has been shown that, the arrangement of the Quranic chapters might have been made according to months of revelation.
Month of revelation of chapters based on the proposed mathematical method has been presented in tabular form, as well as on a Cartesian coordinate using scatter plot.
Scatter plots offer the possibility for visually analyzing chapters' distribution across the 12 months of the Islamic calendar during the 23 years of Quranic revelation.

The next step for completing this study involves thorough examination of the secondary Islamic materials e.g hadiths, exegesis, in order to fully validate the computed months of revelation of the chapters.

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