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Original Research Article

Analysis of Visual Balance Based on the Proportion of Khalvat and Jelvat in the Thuluth Inscriptions of Ali Naqi Imami (Case Study: Courtyard of Imamzadeh Ismail, Isfahan)

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Abstract

Introduction: The inscriptions of Ali Naqi Imami in the Imamzadeh Ismail of Isfahan, with their various frames, require a research space to achieve a certain visual balance, and the best and most effective method for this purpose is to examine the ratio of Khalvat (empty, silent space) and Jelvat (manifested, active space) in the inscriptions. The aim of this research is to identify the spaces of Khalvat and Jelvat in the inscriptions of Ali Naqi Imami at the Imamzadeh Ismail and to analyze the methods used to create visual balance in them, ultimately leading to an understanding of the characteristics of his works. Therefore, the present research seeks to answer the following questions: «Which parts of the inscriptions have the most Khalvat and Jelvat areas, and in what manner?» Additionally, «How is the visual balance affected by these areas?»

Research Method: The inscriptions on the entrance gate of the Shaeya Mosque, the courtyard, and the shrine of Imamzadeh Ismail are the samples analyzed. In the present qualitative research with a descriptive-analytical approach, extensive studies were conducted on the available resources on the internet and in libraries, alongside field observations of the inscriptions. The basis of the measurement was the dots and analytical charts in Photoshop.

Findings: The research results indicate that Ali Naqi Imami, by using toothed letters and creating appropriate elongation extension, has achieved desirable Khalvat and Jelvat in the inscriptions. In the inscriptions of the entrance and courtyard of Imamzadeh Ismail, he created Jelvat in the interior and exterior of these works by designing wide, open loops and knots, as well as writing circular letters with open mouths. Also, in the inscription at the entrance to the Shaeya Mosque, the arrangement of the letters in fewer rows has created an appropriate sense of Khalvat, which has been effective in the visual balance and harmony of the inscriptions. He created Khalvat using taller ascending letters in a row of the inscription at the entrance of the Imamzadeh courtyard, which somewhat covered the existing gaps through the diacritics and tashkeel of calligraphy. This type of Khalvat is also observed in the individual letters of the inscriptions at the entrance of the shrine and the Shoa Mosque. Ultimately, the inscription on the entrance of the Shaeya Mosque has a relatively symmetrical visual balance, the inscription on the entrance of the Imamzadeh shrine has an asymmetrical balance, and the inscription on the courtyard of the Imamzadeh has even less balance, also in an asymmetrical manner.

Conclusion: Based on a study of writing styles in the inscriptions, Khalvat and Jelvat, the results indicate that the inscriptions on the entrance gates of the Shaeya Mosque and the Imamzadeh Shrine exhibit greater visual balance and symmetry. The inscriptions on the entrance gate of the Shaeya Mosque, the entrance gate of the shrine, and the entrance gate of the courtyard have progressively decreased in their visual symmetry.

Keywords

Khalvat, Jelvat, Visual Balance, Ali Naqi Imam, Positive and Negative Space, Thuluth Inscriptions

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Introduction and Problem Definition

Ali Naqi Imami, as a member of the Isfahan calligraphic family and an influential epigrapher in Safavid architecture, like his father, Mohammad Mohsen Imami, and his grandfather, Mohammad Reza Imami, has left behind valuable works in the buildings of Isfahan and other cities. Among the works of Ali Naqi Imami, one can mention inscriptions in the Chahar Bagh School-Mosque, the Jameh Mosque of Isfahan, and the Imamzadeh Ismail of Isfahan. Among his collection of works, some, such as the three inscriptions in the Imamzadeh Ismail complex, are among the thuluth inscriptions that have not yet been systematically studied. The interesting point about these three inscriptions is the time frame of their execution, which occurred between 1112 and 1115 A.H. They were executed in different manners and in three distinct frames. The apparent differences in execution style and framing, alongside the spatial and temporal proximity of these inscriptions, draw attention to how a single scribe observes the principles of calligraphy, the coherence of components, and the method of creating visual balance across different frames. Solving this issue while preserving the relatively common characteristics of this scribe's calligraphy can also elucidate the common architectural features of this collection. The key to solving the problem lies in challenging one of the components of calligraphy rules across different sections of the inscriptions, one of the most effective of which is the study of the arrangement of Khalvat and Jelvat spaces. By «jelvat», we mean the filled parts or the positive space of the inscription, and by «khalvat», we mean the empty parts or the negative space of it. Examining the inscriptions from the smallest components to their entirety is essential to understanding the Khalvat and Jelvat spaces and to achieving the final result intended by the scribe: the method of creating visual balance. In this context, one might ask: In which parts of the inscriptions by Ali Naqi Imam in the Imamzadeh Ismail complex have there been more prominence and subtlety, and what form do they take? And consequently, how is the visual balance affected by the crowded and secluded areas? With the results obtained from this research, it is hoped that a rough understanding of the characteristics of Ali Naqi Imam's epigraphy can be achieved and that the historical, research, and scientific documentation related to this collection can be expanded.

Research Method

Among the inscriptions of Ali Naqi Imami, three of his inscriptions in the Imamzadeh Ismail complex in Isfahan were selected as case studies; namely, the inscriptions on the entrance gate of the Imamzadeh courtyard in the southwestern portico, the entrance gate of the Imamzadeh shrine on the southern side, and the inscription on the entrance gate of the Shaeya Nabi Mosque on the same side. These inscriptions were studied in this qualitative research in a descriptive-analytical and comparative manner. To understand these valuable works, field observation and photography were conducted, and to collect reference information, resources available online and in libraries were consulted. To obtain documented and visual analyses, sections of the inscriptions were illustrated in Illustrator software according to the discussed topics, and to extract the positive and negative space of the inscriptions, aligned with the research topic, analytical pixel[1] charts in Photoshop were used. The basis of this research is the measurement of inscriptions, and the dot[2] of this measurement was placed at the level of smaller components. The Khalvat and Jelvat of sentences and lines were measured by creating light-and-dark contrasts in the inscriptions' text.

Research Background

Given the research subject, the concepts of Khalvat and Jelvat, as they appear in the calligraphy of Ali Naqi Imami's inscriptions, and the spaces of Imamzadeh Ismail have been identified as the main focus of the study. In this context, some sources can be considered as previous research achievements that have somewhat aided the cognitive process of this study and have been referenced in certain sections. Among the documented studies, «Nasr» (2006) in the article entitled «Echo in the Void Space, the Importance of Emptiness in Islamic Art», addresses the concept of empty, void, or secluded space in Islamic art and, with an internal perspective, explains its role and significance in the formation of certain Islamic art pieces. Among the numerous sources, some books are also considered as credible research, including the book «Fazaeli» (1971) titled «Atlas of Calligraphy, Research on Islamic Scripts», which discusses in detail the origin of scripts, their promoters and masters, and the nomenclature of Islamic scripts. Additionally, the comprehensive book entitled «Treatises on Calligraphy and Related Arts» by «Ghelichkhani» (1994) includes several valuable treatises on calligraphy, its principles and rules, tools, and related arts. This author has also written another important book, «Dictionary of Calligraphy and Related Arts» (1994), in which he defines and compiles commonly used terms and vocabulary in this field, and it is referenced in the theoretical foundations section of this research. The book «Treasury of Historical Artifacts of Isfahan: Ancient Relics, Historical Tablets, and Inscriptions in the Province of Isfahan» by «Honarfar» (1965) is also considered an important source in this field. The author, in addition to the etymology of Isfahan, has introduced historical buildings from various periods and provided descriptions of their inscriptions; information that has been useful in gaining a better understanding of Imamzadeh Ismail and its inscriptions. «Fazaeli» (1977) in the book «Teaching Calligraphy» has also described and explained the rules of calligraphy in general and specific terms, along with examples of scripts, which have been referred to in parts of this research. Although the mentioned sources are of scholarly and research value and have been referenced and consulted in certain sections, no dedicated research has been conducted on the discussed inscriptions, nor have their Khalvat and Jelvat been examined. Most available sources on epigraphy, calligraphy rules, and thuluth epigraphy, as well as information about the Imamzadeh Ismail building, have been utilized.

Khalvat and Jelvat and Visual Balance in Epigraphy

Jelvat, meaning visible and full, contrasts with Khalvat, meaning hidden and empty, and both fall under the multiple rules of calligraphy, which, in practice, are similar to the rules of Savad and Bayaz (black and white) (Ghelichkhani, 1994, 86). The Savad, or darkness, of the text is contrasted with the Bayaz, or lightness, of the background. More precisely, the Savad can be considered as the parts filled by the text, which take shape in the loops of letters such as «ص», «ف», «ق», «ه» and sometimes «ع» and «ح», while the amount of whiteness or empty space between them constitutes the Bayaz (Fazaeli, 1977, 83). So these two terms apply only to letters with loops or dots, whereas «jelvat» and «khalvat» refer to the filled and empty spaces within the components of a calligraphic work. The importance and validity of these two lie in their ability to ultimately create balance and harmony in the work. In a way, the presence and absence in calligraphy can be considered synonymous with positive and negative spaces in the visual arts, as these are defined with the aim of creating visual unity among elements. Anything that attracts the viewer's gaze in a visual connection is considered a positive element, while anything that acts neutrally is considered a negative element. In fact, if we consider a white page, the viewer's eye only sees its

whiteness. However, by creating a black dot on the page, the gaze shifts from the entire white page to that dot, because the dot creates visual pressure, and each of these two elements independently affects the viewer. The expression of black and white words here does not mean absolute black and white; whether a dark dot is placed on a light background or a light dot on a dark background, in both cases, the background is a negative and passive composite, and the dot plays a positive, active, and pressure-filled role within it (Dondis, 2015, 60). As the number of dots increases, the resulting pressure increases as well. Accordingly, in epigraphy, the text of the inscription serves as the positive space, filling various parts of the frame and creating what are known as «jelvat», while the background of the inscription, as the negative space, includes the empty spaces or «khalvat» of the inscription. Additionally, the placement of script components as visual elements adds weight to the overall composition of the work, which can ultimately result in visual balance, either symmetric or asymmetric. When the overall visual weight of an artwork is equal, visual balance is achieved. Disrupting this balance and harmony occurs when the artist intends to draw the viewer's attention to a specific point. This balance, which ultimately leads to visual equilibrium, if symmetrical, means that the two sections of a work of art (here, an inscription) have a similar composition. This type of symmetry is especially common in Islamic art and creates a balanced composition with a simple and logical weight that conveys a sense of calm and stillness. In contrast, asymmetrical balance consists of dissimilar elements and components within a work, arranged so that they visually present equal and balanced weight, resulting in a more diverse and dynamic outcome (Dehdashti, 2020, 57-58). The characteristics of some letters in calligraphy also independently influence the degree of Khalvat and Jelvat, as it is stated by "Ikhwan al-Safa" regarding the origin of letters in calligraphy: «The origin of all letters is a straight line, which at the same time is a diameter of a circle, and also a curved line that is the circumference of the circle. Other letters are composed of these two origins» (Bolkhari Qahi, 2024, 23). According to the viewpoint of «Seyyed Hossein Nasr», «It is the object that defines the space around it and gives meaning and determination to the space. In Islamic architecture, space carries positive meanings. Space is not determined by a positive object, but rather through the absence and lack of physicality or materiality. This is another aspect of emptiness; if we want a better term, we can call it «negative space». Regarding calligraphy, it should be noted that negative patterns are almost as important as positive patterns, especially in the Kufic script and its extreme form in the Shikasta (broken) script» (Nasr, 2006). In establishing a balance between Khalvat and Jelvat, it is also essential to note that excess or deficiency in either of these leads to the emergence of the other. In fact, adhering to these two rules aligns with the proper execution of calligraphy principles, namely, rules, proportions, composition, and the base, which are directly interconnected. For example, in adhering to the rule of composition, the calligrapher must use the base to carefully apply the rules of principles and proportions so that each letter and word is placed in its appropriate position, and the overall Savad and Bayaz, as well as the Khalvat and Jelvat between words, sentences, and lines, are considered with the appropriate distance from each other. Creating such a proportion between Khalvat and Jelvat can be attributed to this principle, which itself defines the rule of proportion: «Any line written with a single pen should have letters of the same type and similar shapes that are equally aligned, so that the components, whether singular or compound, large or small, do not exceed their defined limits, and similar components appear uniform and do not seem small or large» (Fazaeli, 1977, 85-89). The components of inscription scripts are generally divided into three categories: the first category includes the larger components, such as ascending letters, circles, and ascenders; the second category includes the smaller

components, such as knots, loops, and serifs; and the third category includes shapes composed of these two groups (Fazaeli, 1977, 86). The combination of these components and lines forms a fourth category. Based on this classification, the degree of simplicity and complexity of Ali Naqi Imam's inscriptions in Imamzadeh Ismail in Isfahan can be measured and analyzed.

The Inscriptions of Ali Naqi Imami in the Imamzadeh Ismail Complex in Isfahan

Ali Naqi Imami, from the artistic and calligraphic Imami family, was the son of Mohammad Mohsen Imami and the grandson of Mohammad Reza Imami Isfahani. This artistic family has left behind numerous valuable works in the buildings of Isfahan and other cities. Ali Naqi Imami, who lived during the reign of Shah Soleiman and Shah Sultan Hussein Safavid, began learning calligraphy from his father at a young age and became skilled in calligraphy, like his father and grandfather, especially in the Thuluth Jali script (large writing). Among the beautiful works he was commissioned to complete by Shah Sultan Hussein, the inscriptions of the Chahar Bagh Mosque-School in Isfahan are notable (Irani, 1966, 207; Rafiei Mehrabadi, 1966, 110). Among his other works, in addition to the inscriptions of the Imamzadeh Ismail complex in Isfahan, one can mention the inscription inside the northern portico of the Chaharbagh Mosque-School, the inscription on the entrance of the Maryam Beigum School in Isfahan, and the inscription on the western portico of the Jameh Mosque of Isfahan. Imamzadeh Ismail (PBUH) is located on the eastern edge of Hafez Street in Isfahan, opposite Imamzadeh Jafar. This complex includes the shrine of Imamzadeh Ismail, the Shaeya Nabi Mosque-Tomb, and the entrance Hosseiniyeh of the Imamzadeh. A major part of the Imamzadeh Ismail complex is dedicated to the Imamzadeh shrine, the courtyard, and the rooms within the courtyard, while other sections include the Shaeya Nabi Mosque-Tomb, the mosque's prayer hall, and the Hosseiniye. Construction of the Imamzadeh shrine began during the reign of Shah Abbas and was completed during that of Shah Safi, with further additions made during the reign of Shah Sultan Hussein (Honarfar, 1965, 524). This complex, based on the inscriptions, tombstones, and stone basins present, dates to the Seljuk and Safavid periods and is rich in valuable works in the fields of epigraphy, wall painting, wooden doors, and other wooden decorations that captivate every viewer. Among the inscriptions of this Imamzadeh, one can mention an inscription in the Thuluth script by Mohammad Reza Imami on the main entrance of the shrine, small and separate calligraphic tablets in the Nastaliq script by Mohammad Saleh Isfahani, and a tile inscription in the Thuluth script by Mohammad Mohsen Emami in the southern portico of the Shaeya Nabi Mosque. The Imamzadeh Ismail complex has a main entrance on the eastern side and another door on the southwestern side, near the Hosseiniyeh. On the outer belt of the portico, a scroll inscription by Ali Naqi Imami is inscribed in Thuluth script. Two other inscriptions by this artist are also located: one at the main entrance to the Imamzadeh shrine on the southern side, beneath the inscription of Mohammad Reza Imami, and the other at the entrance of the Shaeya al-Nabi Mosque on the same side of the complex, both written in the Thuluth script. These inscriptions, as seen in Fig. 1, have been executed in three different frames and in three distinct styles. Based on the inscriptions, their execution times are close to each other and correspond to the years 1112, 1114, and 1115 A.H.

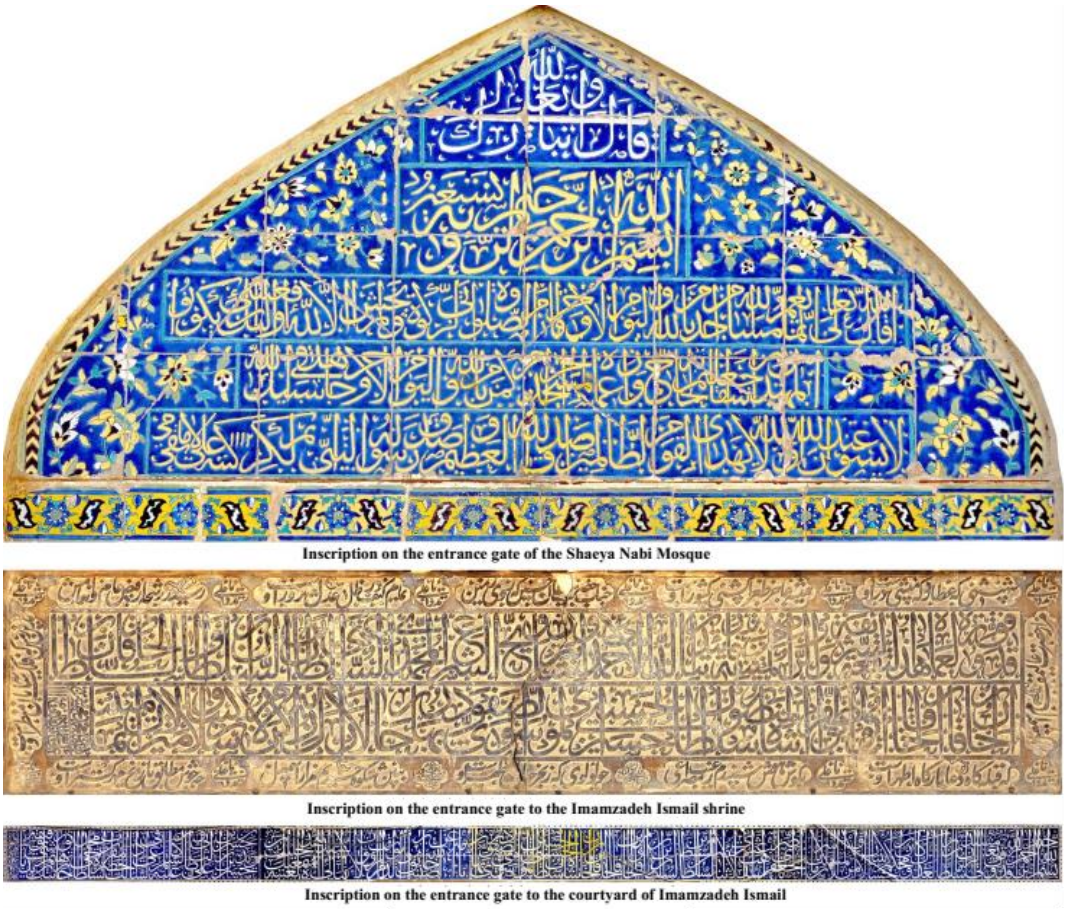


Fig 1. Ali Naqi Imami's inscriptions in the courtyard of Imamzadeh Ismail, Isfahan. Source: Authors.

Khalvat and Jelvat in the Inscriptions of Ali Naqi Imami at Imamzadeh Ismail

The Khalvat and Jelvat aspects of the inscriptions, as previously mentioned, correspond to positive and negative spaces. In this context, measuring the amount of positive space in the text relative to the negative space of the inscriptions' background can help understand the proportions of Khalvat and Jelvat spaces in the inscriptions. For this purpose, using charts based on counting the smallest unit of the image, namely pixels, in Photoshop, the number of these small square units in the entire inscriptions, their text, and their background was calculated and extracted based on the color units of each image. Based on these charts (Fig 2 & Table 1), the positive space of the inscription on the entrance portal to the courtyard of Imamzadeh Ismail (i.e., its text) accounts for % 52.37 of the total inscription. The ratio of positive space in the inscription at the Shaeya Nabi Mosque entrance is % 48.19, and at the Imamzadeh entrance, it is % 50.40. It should be noted that, considering the subject of discussion, only the section of the Thuluth script on the entrance inscription of the shrine has been taken into account for the percentage calculations. Moreover, such composition and formation of positive space in the inscriptions were likely influenced by their framing as well.

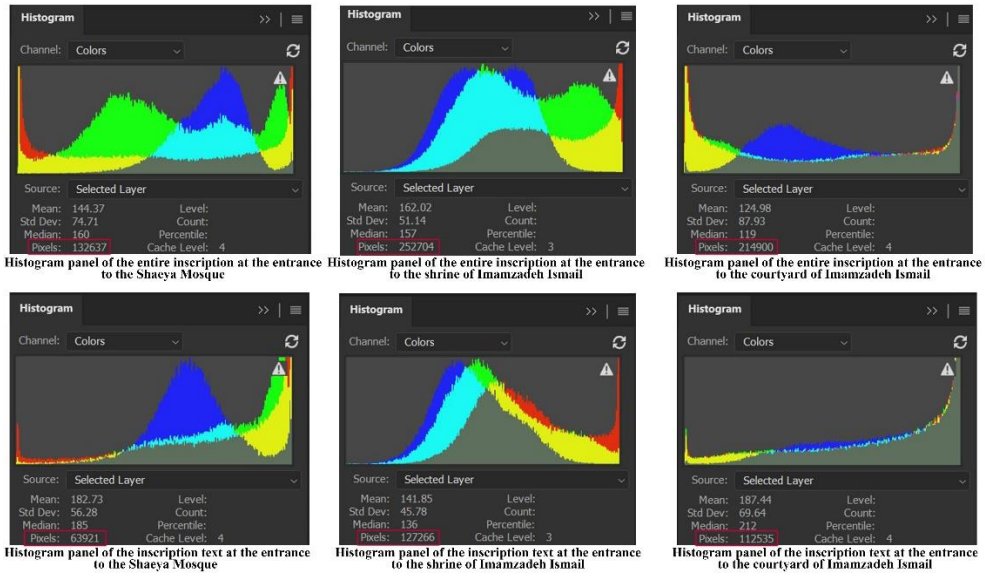


Fig 2. The number of pixels received from the histogram[3] panels in Photoshop based on the layers of inscriptions and their text. Source: Authors.

Table 1. The amount of positive space of the inscription text in its total space in terms of the number of pixels. Source: Authors.

Inscription	All the pixels of the inscription image	Positive space pixels	Negative space pixels	Occupancy rate Positive space of the total
Inscription on the entrance gate of the Shaeya Nabi Mosque	132637	63921	68716	% 48.19
Inscription on the entrance gate to the Imamzadeh Ismail shrine	252704	127266	125438	% 50.40
Inscription on the entrance gate to the courtyard of Imamzadeh Ismail	214900	112535	102365	% 52.37

In this analytical study, the smallest components of the inscriptions are examined to achieve an overall understanding of the balance between Khalvat and Jelvat. It may seem that the smaller components of the inscriptions have no effect on the degree of Khalvat and Jelvat; however, in reality, these smaller components and their arrangement alongside each other, through the combination of singulars and the formation of compounds, create a collection of Khalvat and Jelvat that ultimately defines the visual balance of the inscriptions. In the inscription at the entrance to the Shaeya Nabi Mosque, the Savad of the loops and knots is arranged so that each loop or blank space accommodates no more than one dot, creating minimal empty space. The length of most letters «ح», «ط» and «ه» is more than three dots; therefore, less empty space is created around these letters for placing other letters or diacritics and tashkeel[4], and for this reason, they are more Khalvat spaces. In contrast, the empty spaces in the loops of some letters, such as «ح» and «ط» in the inscription on the entrance gate of the Imamzadeh shrine, have larger openings, with lengths reaching five dots. The blank spaces created in some small letters are such that delicate letters like «ح» fit

within them. Additionally, in the inscription on the entrance gate of the Imamzadeh courtyard, larger circles and dots are inscribed, with their lengths reaching four or five dots. Accordingly, the Jelvat of the small letters in the two recent inscriptions is greater, while the khalvat of the small letters in the inscription at the entrance of the Shaeya Mosque is more pronounced. As seen in Table 2, the teeth of letters such as «ب» in the singular form and in combination with similar toothed letters, such as «ت» or the letters «س» and «ص», can influence the degree of compression and Jelvat, and sometimes the Khalvat of letters and compositions. Of course, there are slight differences in this regard; for example, the spaces between the teeth of the letter «س» in the inscription at the entrance of the Shaeya Mosque are slightly greater, and the beginning of the letter «ت» tends to lean slightly to the left. The letter «ت» in the courtyard entrance inscription, when attached to the letter «م», is written with greater height and curvature; however, in the shrine entrance inscription, not only are the teeth spaced closer together and the height of the letter «ت» less compared to «م», but the degree of rotation at the beginning of the letter «ب» has also decreased. This economy in spacing and height is attributable to the inscription's width and length. In the overall relationship of the teeth with other elements of the inscription, no significant Khalvat and Jelvat spaces have been created, and all of them have been inscribed in proportion and in accordance with the text and frame of the inscriptions.

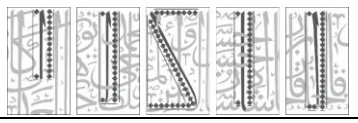
Table 2. Visual Analysis of the Khalvat and Jelvat in the Small and Fine Letters of the Inscriptions. Source: Authors.

Inscriptions	Groups	Image	Drawing
Entrance gate of the Shaeya Nabi Mosque	Loops & Knots		
	Teeth		
Entrance gate to the Imamzadeh Ismail shrine	Loops & Knots		
	Teeth		
Entrance gate to the courtyard of Imamzadeh Ismail	Loops & Knots		
	Teeth		

The elongated letters of inscriptions, which, according to the principles of epigraphy, reduce their dryness and create balance on both sides, are small details that have a significant impact on the entire inscription. For example, in the inscription on the entrance of the Shaeya Mosque, the specific elongation of the letter «ی» in the word «تعالی» with twenty-

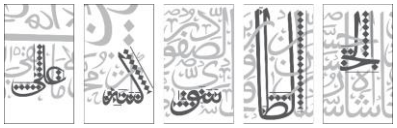
one dots is an example of the inverted «ی» commonly found in Thuluth calligraphy. This elongation has been applied both at the top of the rows and in the middle of the inscription, and although it was done all at once, it has neutralized the protrusion while maintaining the inscription's balance and symmetry. Such stretches and elongations are also observed in addition to the letter «ی» in the word «الحسینی» with eighteen dots and in the letter «س» in the word «السلطان» in the inscription on the entrance gate of the Imamzadeh shrine; with the difference that the first elongation is in the lower and middle rows of the inscription, while the second elongation is at the end of the upper row. In the writing of the elongation in the word «السلطان», it is likely that, due to the word «الخاقان» not fitting above the letter «س», instead of making the «س» toothed and the scribe writing «الخاقان» in a compressed form, it was preferred to write this letter elongated and without teeth. Of course, this preference, although it has less balance and symmetry compared to the dryness on the right side of the inscription, has managed to draw some of the viewer's attention away from the clutter of the section with Ali Naqi Imam's name toward itself, which has somewhat contributed to the visual balance of this part. The length of the inscription on the entrance gate of the Imamzadeh courtyard, as seen in Table 3, does not exceed eight dots and consequently has less elongation.

Table 3. Visual Analysis of the Khalvat and Jelvat in the Large Letters of the inscriptions. Source: Authors.

Inscriptions	Groups	Image	Drawing
Entrance gate of the Shaeya Nabi Mosque	Elongations		
	Circles		
	Ascending Letters		
Entrance gate to the Imamzadeh Ismail shrine	Elongations		
	Circles		
	Ascending Letters		
Entrance gate to the courtyard of Imamzadeh Ismail	Elongations		
	Circles		
	Ascending Letters		

Circles like the letters «ل», «ن», «ع», and «ی» create inner spaces and, in doing so, form areas around them; the size of these areas affects the Khalvat and Jelvat within and around them. These types of letters in the inscription at the entrance to the Shaeya Mosque are written in a size proportional to the other letters and with more balanced, tighter circles. Generally, fewer letters and diacritics are inscribed in their inner space, and sometimes they are completely empty. Their outer space also has a desirable Khalvat. In contrast, the circles in the inscription of the shrine's entrance gates and the courtyard entrance are larger and often elliptical; their openings are increased by the size of one or two dots. Similarly, within many of these circles, due to the created Khalvat, they serve as the starting or ending point of certain letters, or are filled with diacritics and tashkeel. The space around these letters, especially in the inscription on the entrance to the shrine, is less Khalvat in most cases. Overall, the circular writing of these letters not only did not create any fluctuations in the inscriptions but, in some parts, was an effective factor in creating visual balance, guiding eye movement, and reducing the dryness of the inscriptions. In general, the height of the ascenders, such as «ا», «ک», and «ل» in the inscription on the entrance of the shrine, is about eight to eleven dots, and this amount is proportionate to the other letters of the inscription. A kind of softness is observed in the letters, which the mentioned ascenders have not diminished, and the created Khalvat and Jelavat are also relatively balanced. However, the height of the ascending letters in the entrance inscription of the Shaeya Mosque ranges from 9 to 16 dots, and in the inscription of the courtyard entrance, it is approximately 13 to 19 dots. In the mentioned order, the softness of the letters has decreased, and their vertical and rigid qualities have increased, such that the tall and upright elements of the entrance inscription to the courtyard have given more verticality to the inscription, and overall, they have similarly affected the Jelvat of the entire inscription.

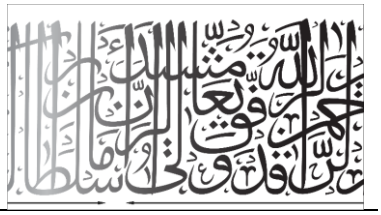
Table 4. Visual Analysis of the Khalvat and Jelvat in the Inscriptions. Source: Authors.

Inscriptions	Image	Drawing
Entrance gate of the Shaeya Nabi Mosque		
Entrance gate to the Imamzadeh Ismail shrine		
Entrance gate to the courtyard of Imamzadeh Ismail		

By combining letters, compounds are formed whose types and characteristics significantly affect their overall composition. The more letters are placed next to each other, the more pronounced the Khalvat and Jelvat created will be; a clear example of this can be seen in Table 4 and in the combination of the letters «ا», «ل» and «ط». In addition to the difference in the ascending letters in the entrance gate inscription of the courtyard, which was previously discussed, the selection of other letters and even the diacritics between these three letters, relative to the spacing and length of the letter «ط» in the inscription of the Imamzadeh shrine entrance, have created a greater Jelvat. Additionally, in the signature

(Raqam) section of the inscriptions, the degree of fullness in the spaces of the compound word «کتبه» is more noticeable; however, the highest degree of Khalvat in some compounds, such as the word «رسوله» in the inscription of the Shaeya Mosque entrance, is observed, which is likely due to the arrangement of letters and words on top of each other; a phenomenon that is less seen in this inscription. When different compositions with specific length and height ratios of each compound word are placed next to each other and sometimes on top of each other, various levels of Khalvat and Jelvat also emerge. Of course, the use of diacritics and tashkeel often moderates visual balance; however, in some areas, arrangements may create more Khalvat and Jelvat. For example, in Table 5, some rows show citrus fruits stacked multiple times, whereas others do not. The inscription at the entrance of the Shaeya Mosque, with fewer rows, has created more Khalvat in the «الا الله» section. In general, the spacing of compositions at the entrance inscription of the Imamzadeh shrine is smaller, which can be attributed to the inscription's type and the thickness of its letters. Ali Naqi Imami used two or three rows stacked on top of each other in this inscription, and in some sections, he wrote the letters in a single row. He placed the diacritics and, in some cases, the tashkeel in more appropriate positions and with suitable sizes in the empty spaces; therefore, the amount of Khalvat created seems less. In the inscription at the entrance of the Imamzadeh courtyard, the letters are written in rows of three, four, and even five stacked on top of each other, but in some sections, only a single row of letters is visible. These compositions have more ascending letters, such as the «سلطان», which is written in a single line with fewer diacritics and tashkeel. Overall, the compositions in the entrance inscription of the shrine are more uniform, resulting in a more orderly, less attention-grabbing eye movement that effectively creates visual balance and harmony.

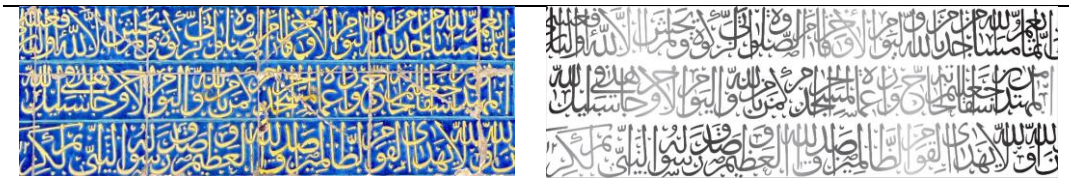
Table 5. Visual Analysis of the Khalvat and Jelvat in the arrangement of the inscriptions. Source: Authors.

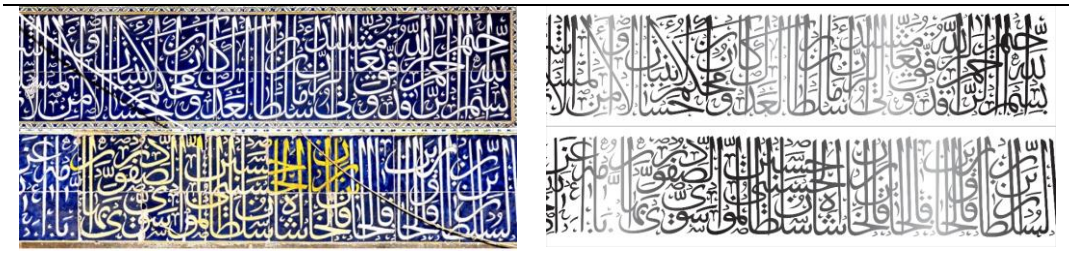
Inscriptions	Image	Drawings
Entrance gate of the Shaeya Nabi Mosqu		
Entrance gate to the Imamzadeh Ismail shrine		
Entrance gate to the courtyard of Imamzadeh Ismail		

It can be said that the way ascending letters are written has a direct relationship with the creation of Khalvat or negative space in inscriptions, because in most cases, especially in the inscription on the entrance of the Imamzadeh courtyard, in sections where the number of ascending letters is greater, the Khalvat has also increased. However, this feature cannot be generalized to all sections of the inscriptions. For example, as seen in Table 6, in the second row of the inscription at the entrance of the Shaeya Mosque, in the space between

the words «سقاخانه» and «مسجد» on the left side, the letters «ح», «و» and «ر» are written individually and in two rows, and in that section, there is only one diacritic. Also, in the left part of the upper row of the inscription at the entrance to the Imamzadeh shrine, Khalvat is created by the letter «ع».

Table 6. Visual Analysis of the Khalvat and Jelvat in the Lines of the Inscriptions. Source: Authors.

Entrance gate of the Shaeya Nabi Mosqu

Entrance gate to the Imamzadeh Ismail shrine

Entrance gate to the courtyard of Imamzadeh Ismail


In general, the Khalvat and Jelvat spaces of the inscription on the entrance of the Shaeya Mosque are almost symmetrically arranged in all three rows of the long inscription; this means that if the Khalvat is created on the right side of the first row, another Khalvat is observed in the same area in the row below it. This pattern is also somewhat similarly observed on the left side of the inscription and has ultimately played an effective role in creating visual balance, harmony, and symmetry. The adherence to symmetry in creating Khalvat and Jelvat in the inscription at the Imamzadeh's entrance is also evident; however, in some sections, the intensity of symmetry has diminished, resulting in an overall asymmetrical visual balance. However, if the pieces of the Ali Naqi Imami belt inscription in the southwest portico of the shrine courtyard are considered as three rows, this symmetry is not observed. In the middle section of the inscription, the highest degree of Jelvat is used in its central part, and right next to this section, there is a noticeable Khalvat. Other areas of Khalvat and Jelvat in the inscription are scattered throughout its various sections; therefore, it appears to have less visual balance and an asymmetrical structure. The mentioned features are shown in Table 7.

Table 7. A collection of Khalvat and Jelvat Spaces in line with the visual balance of the inscriptions. Source: Authors.

Inscription Components		Features	Entrance gate of the Shaeya Mosqu	Entrance gate to the shrine	Entrance gate to the courtyard
Small & fine letters	Loops & Knots	The loops with less wider Savad and smaller Bayaz.	*	-	-
		The loops with wider Savad and larger Bayaz.	-	-	*
		More Khalvat in Bayaz and around the letters	*	-	-
		Jelvat of the small letters with larger (هـ)	-	*	*
	Teeth	greater distances between the teeth	*	-	-
		Height and more curvature in the combination of toothed letters	-	-	*
		Creating less rotation at the beginning of toothed letters	-	*	-
		Balance in stretched inverse (ی)	*	*	-
		Balance in short inverse (ی)	*	*	*
	Elongations	Balance in toothed letters	*	-	٠
		Letters with natural elongation like (ب) and (ک)	*	*	*
Large letters	Circles	Tighter circles	*	-	-
		The inside of the circles being empty	*	-	-
		Wider spaces between circles	-	*	*
		Khalvat in the outer space of letters	*	-	-
		Jelvat in the inner and outer space	-	*	*
	Ascending Letters	Khalvat in ascending letters with fewer dots	-	*	-
		More Jelvat in the ascending letters with more dots	-	-	*
Compositions		Khalvat in a compound word with ascending letters	-	*	*
		Jelvat in the spaces between the letters of a compound	-	*	-
		Khalvat in compounds with fewer rows	*	-	-
Adjacent Compositions		Jelvat in composition overlaps	-	*	*
		Khalvat in compositions in a row	*	*	*
		Placement of compositions with short distances	-	*	-
		Khalvat in compositions with ascending letters in a row with diacritics and tashkeel.	-	-	*
		A more uniform blend of compositions in creating greater balance	-	*	-
Lines		More Khalvat in the sections with more ascending letters	-	-	*
		More Khalvat with the writing of individual letters	*	*	-
		The balance in creating Khalvat and Jelvat	*	*	-
		More visual balance and harmony	*	*	-
		Symmetrical balance	*	-	-
		Asymmetrical balance	*	*	*

Conclusion

The inscriptions of Ali Naqi Imami in the Imamzadeh Ismail complex are noteworthy for the differences in two writing styles and framing methods within a single location. Considering that the placement of the smallest elements of the inscriptions next to each other and their combination in the form of compositions and sentences creates Khalvat and Jelavt spaces that are effective in the final visual balance, it can be understood that Ali Naqi Imami, by using wider Savad and larger Bayaz spaces in the loops and knots, especially in the inscriptions at the entrance of the shrine and the courtyard of the Imamzadeh, has been able to create more Jelvat; whereas in other inscriptions, the use of narrower Savad and smaller Bayaz spacees has resulted in a desirable Khalvat. He has made slight differences in the writing of the toothed letters, writing these small letters in proportion to the text and the frame of the inscriptions, which consequently has played an effective role in the overall visual balance. Ali Naqi Imami, in all three of his inscriptions, although he used fewer elongations than most Thuluth inscriptions, this small number, when combined with appropriate extension and consideration of desired Khalvat and Jelvat spaces, has been effective in the visual balance and harmony of the inscriptions. In the writing of circular letters, the creation of open mouths in the circles has added to the Jelvat of the inner and outer spaces of these letters in the two inscriptions at the entrance to the shrine and the courtyard of the Imamzadeh; these Jelvat spaces, considering the density of the components of both inscriptions and the number and height of the ascending letters, have contributed to the overall harmony and visual balance of the inscriptions. The height of the ascending letters, especially in the inscription on the entrance gate to the Imamzadeh courtyard, is noticeable and has created both Khalvat in some areas and Jelvat in others. In addition, greater Jelvat is observed between the letters of the inscriptions, especially in the entrance inscription of the shrine. Additionally, in the entrance inscription of the Shaeya Mosque, Khalvat spaces are created with fewer rows, which has influenced the visual balance of the inscriptions. In other words, the more rows of compositions stacked on top of each other, the greater the Jelvat becomes; a feature seen in the shrine's entrance inscriptions and, more prominently, in the inscription at the entrance of the Imamzadeh courtyard. One of the effective factors in filling the gaps created in the Thuluth calligraphy is the use of diacritics and tashkeel, which he utilized the most in the entrance gate of the courtyard, as the most Khalvat spaces are observed in the sections with a higher number of ascending letters in this inscription. Not only the ascending letters but also the use of individual letters have played a role in creating effective Khalvat spaces; this is evident in the inscriptions at the entrance to the shrine and the Shoa Mosque. Ultimately, with this writing style and the creation of various Khalvat and Jelvat spaces, it can be concluded that the inscriptions at the entrances of the Shaeya Mosque and the Imamzadeh shrine exhibit greater visual balance and harmony. The inscription on the entrance of the Shaeya al-Nabi Mosque is primarily symmetrical, whereas that on the shrine's entrance is asymmetrical. The inscription at the courtyard entrance, although visually balanced, is less so and more asymmetrical because it has more Jelavat spaces, scattered elements, and, especially, Khalvat spaces.

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Appendix
1. Pixel: The smallest unit that makes up a digital image. For this term, the Academy of Persian Language and Literature has suggested the term «تصویر دانه» (image grain). In fact, in Photoshop software, we deal with digital images known as Bitmap, which are images converted into a collection of small squares or image elements called pixels (Faulkner & Chavez, 2019, 3).
2. A dot is the act of dragging the pen's nib on paper to the extent of forming a square, such that its sides are approximately equal or slightly less (Fazaeli, 1977, 87).
3. Histogram: A chart that displays the distribution of color intensities and brightness in an image and serves as a measure of the light, mid-tone, and dark (shadow) tones in the image (Shirakawa, 2012, 5).
4. Diacritics (Harakat) refers to (fatha, kasra, damma) and the sign of sukoon and tanween; and the Tashkeel include shaddah, madd, qata, and wasl. If the script is Reihan and Thuluth, delicate letters such as (س), (ص), (ح) and (ه) and decorations like (ء) are added, and calligraphers use them to create uniformity in the script and background, balance, and regularity of Savad and Bayaz because the letters and words in Thuluth are robust and large, and these embellishments adorn it (Fazaeli, 1977, 100).

References
- Bolkhari Qahi, H. (2024). *Qadr, the theory of art and beauty in Islamic civilization*. Sooreh Mehr Publishing Company. **[In Persian]**
- Dehdashti, H. (2020). *Familiarity with visual elements and qualities in the fundamentals of the visual arts*. Rah-e Abrisham. **[In Persian]**
- Dondis, D. E. (2015). *A primer of visual literacy* (M. H. Masih Tehrani, Trans.). Soroush Danesh. **[In Persian]**
- Fazaeli, H. (1971). *Atlas of calligraphy (Research in Islamic scripts).* Mashal Publishing. **[In Persian]**
- Fazaeli, H. (1977). *Teaching calligraphy* (1st ed.). Soroush Publications. **[In Persian]**
- Faulkner, A. & Chavez. C. (2019). *Classroom in a book. The official training workbook from Adobe- Softcover*. Adobe Press.
- Ghelichkhani, H. R. (1994). *Essays on calligraphy and related arts*. Rozaneh Publishing. **[In Persian]**
- Ghelichkhani, H. R. (1994). *Dictionary of calligraphy terms and expressions*. Rozaneh Publishing. **[In Persian]**

- Honarfar, L. (1965). *Treasury of historical artifacts of Isfahan: Ancient relics, historical tablets, and inscriptions in the province of Isfahan.* Saqafi Bookstore. **[In Persian]**
- Irani, A. M. (1966). *The emergence of script and calligraphers*. Yasavoli Publications. **[In Persian]**
- Nasr, S. H. (2006). *Echo in the Void: The importance of emptiness in Islamic art*. Shargh Newspaper, translated by Nader Shayeganfar (4), 16 & 17. **[In Persian]**
- Rafiei Mehrabadi, A. (1966). *The history of calligraphy and calligraphers*. Amirkabir Publishing Institute. **[In Persian]**
- Shirakawa. B. (2012). *Beginning photoshop*. San Jose State University. https://memarproje.ir