

Magic Squares in the Hebrew Manuscripts of the Kaufmann Collection

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ABSTRACT

The paper reviews the metaphysical symbolism and the practical effects attributed to magic squares in Chinese, Muslim, and Jewish traditions. It surveys the Hebrew manuscripts preserved in the Kaufmann Collection of the Hungarian Academy of Sciences, and studies the context, the rationale, and the *modus operandi* of the squares in them, taking into consideration primarily Muslim antecedents and parallels. It examines whether the symbolic background and the metaphysical content associated with the squares are manifest in the texts, or deducible from the context, or whether these aspects are completely obscured and ignored.

KEYWORDS

magic square, Kaufmann Collection, Hebrew manuscripts.

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A magic square is a table consisting of an arbitrary number of rows and columns, each of which contains a number or a letter. The numbers, or the numerical values of the letters, add up to the same number in each row, column, and diagonal.¹ The concept of magic squares first emerged in either India (Tolsa 2020: 8–9) or China (Cammann 1960: 116). The earliest known example of a magic square in an Islamic context appears in a medical text from the 9th century, in which a three-by-three square is depicted as a device to ease childbirth.² Tolsa (2020: 8, 12–13) has argued that the diagram, its purpose and its description correspond to contemporary Indian sources. From the Islamic world, magic squares soon spread to Jewish culture and, from the High Middle Ages onwards, frequently appeared in amulets and manuscripts of various genres.

MAGIC SQUARES IN CHINA

Magic squares were considered to be more than just protective charms or mathematical puzzles. In diverse cultures, they received metaphysical symbolism that was specific to the beliefs in question. For instance, as Schuyler Cammann (1961) discussed at length, the magic square of three (comprising the numbers from one to nine) conveyed complex philosophical and religious ideas in China. The first appearance of the diagram was in the form of the Luoshu 洛書 pattern, which was a square composed of black and white dots arranged in nine groups. Each group represented a number from one to nine, according to the number of dots it contained, with number five in the centre of the pattern. According to Chinese tradition, the diagram was revealed to the mythical King Yu 禹 in the twenty-third century B.C.E., but in fact it attained to popularity only in the tenth century C. E. As Cammann convincingly demonstrated, the square of three was a visual representation of ancient Chinese conceptions of the universe. In this model, the central unit (corresponding to the number five) could represent an ideal sovereign, his (earthly or heavenly) palace, China, or the axis mundi. In short, the square served as an expression of centrality. Furthermore, it was not regarded as a static diagram, rather, constant movement was attributed to it. The central number, representing either the ultimate ruler or his palace, marked the beginning of a movement that perambulated the numbers of the square in a fixed order, returning to the centre again. This dynamic, periodic movement attributed to the diagram made it a suitable symbol of eternal return and periodic regeneration of the universe. Due to its inherent mathematical properties, the square of three was well-suited to expressing cosmological ideas: for example, the number five is not only visually in the central position, but it is also the arithmetic mean of the surrounding numbers; moreover, five multiplied by three (the base number of the square of three) results in 15, which is the constant sum of all rows, columns and diagonals of the square; five multiplied by nine (the number of the cells in the square) results in 45, which equals to the sum of all numbers in the square, etc. Thus, the diagram was able to express in mathematical terms the idea of centrality, harmony, and equilibrium. The numbers composed of either black or white dots represented the principles of *yin* 陰 and *yang* 陽, the two complementary opposites

¹ For a complete definition, see Sesiano 2017: 3: 'A magic square is a square divided into a square number of cells in which natural numbers, all different, are arranged in such a way that the same sum is found in each horizontal row, each vertical row, and each of the two main diagonals.' For the history and constructions on magic squares, see Sesiano 2019.

² In the encyclopaedia entitled *Firdaws al-ḥikma* written by the Persian physician 'Alī ibn Sahl Rabbān aṭ-Ṭabarī, cf. Tolsa 2020: 8.

through which the universe operates. Besides philosophical ideas, also practical aspects were associated to the diagram: people used it as a device of divination considering it as a protective charm.

MAGIC SQUARES IN ISLAMIC CULTURE

The same holds true for Islamic squares: on the one hand, they expressed metaphysical ideas, such as the order of the universe or the operation of a certain divine attribute. On the other hand, however, they were regarded as mere magical devices through which practical aims could be attained.³ The first square is attested in a medical work from the ninth century, and soon it appears in magical texts, by Ġābir ibn Ḥayyān and by Maslama al-Qurṭūbī, for example (Tolsa 2020: 16–18).

We can find a theoretical discussion of the concept in the *Rasā'il iḥwān aṣ-ṣafā* (*Encyclopaedia of the Brethren of Purity*), an extensive work composed in 10th century Iraq. The tractate on geometry describes eight magic squares, explaining that after examining the characteristics of the geometrical shapes and the properties of the numbers, the combination of both should be studied, since it brings about qualities that could not be caused by one without the other. (Iḥwān aṣ-ṣafā, *Rasā'il*, vol. 1, p. 109) According to the author of the treatise, therefore, the effect of the numbers is increased if they are arranged in certain geometric shapes. The author goes on to accent (*ibid.*, p. 114) that the uses of the squares are detailed in another tractate of the *Encyclopaedia*, entitled the 'Tractate on Talismans and Spells' considered the most important part of the whole work. It is the last and the longest tractate, for the study of magic was a prerequisite for understanding all the sciences treated previously in the work (Iḥwān aṣ-ṣafā, *Rasā'il*, vol. 4, p. 283). According to the theory put forward by the authors of the *Encyclopaedia*, both the numbers and the geometrical shapes operate with the powers of the universe, and the mystical qualities of the numbers are modified by the geometric forms in which they are composed. The combination of numbers with geometric shapes exerts influence on reality and alters the order of the universe.

Arabic magical handbooks usually do not discuss the rationale behind the squares since it is considered a hidden mystery that should not be made accessible to everyone. This is explained in the introduction to the most important work on magic squares, written in the 13th century by the Sufi mystic al-Būnī.⁴ In other cases, the magical effect of the geometric form is regarded as self-evident, and for this reason there are many false squares in the magical manuals (for example, when the numbers in the cells are repeated). The geometric shape was attributed such a power that the mere resemblance to a proper magic square was supposed to have a magical effect. The handbooks often contain practical instructions for preparing the squares, such as the material on which they should be inscribed, the colour and quality of the ink or the writing substance, the time at which the diagram should be prepared, the incense that should be burned, the physical and mental state of the person preparing it, the order in which the lines of the square should be drawn, and the order in which the numbers or letters should be written in the cells.⁵

³ For a detailed study on the cultural history of magic squares in the Islamic world, see Hallum 2021. For magic squares on Islamic amulets, see Porter 2011: 166–171.

⁴ Cf. the introduction of his magical-mystical work entitled *Šams al-ma'ārif al-kubrā* (2011), pp. 6–7.

⁵ Cf. for example the magical handbook written by aṭ-Ṭūhī, n. d. [Cairo, ca. 1960], pp. 117–119.

MAGIC SQUARES IN JEWISH CULTURE

Magic squares entered Jewish culture from the Islamic world. The earliest Hebrew squares date back to the 10th century and can be found in the Cairo Genizah. To date, no comprehensive study has dealt with the magic squares in the Genizah; therefore, it is difficult to make general statements about them. The examples I have seen are amulets that do not come with a theoretical explanation of how they work.⁶ Conversely, due to the Kabbalists' keen interest in letter mysticism, squares frequently appear in Kabbalistic texts, and sometimes even the esoteric knowledge required to the understanding of their nature is revealed to a certain extent. For instance, Yosef Şayaḥ (1505–1573), a leading rabbinical authority of sixteenth century Damascus, authored books that touched upon the subject of magic squares, such as *Šōšan Yesôd 'Ôlam* and *Toledôt 'Adam* (Kaplan 1985: 162). Although Şayaḥ explicitly refused to disclose the hidden secrets of the squares entirely, stating that such mysteries could not be put into writing, he did describe some of their characteristics and provided practical instructions for their use. For instance, he established fundamental associations between squares and specific planets: the square of three corresponded to Saturn, that of four to Jupiter, *et cetera*. Thus, he connected the seven classical planets to the seven simplest squares (from the 3x3 square to the 9x9 square). More complex squares (from the 10x10 to the 20x20 square, excluding the 15x15 square) were associated with the ten *sefirôt*, i.e., manifestations of God through which the mystic may approach God and attain divine knowledge. Şayaḥ presented the squares as meditative devices through which the mystic could enter the scheme of the *sefirôt*. He described the cells of the squares as rooms, and the rows as houses. Embarking on a mental journey, the mystic was destined to travel from house to house, all the while contemplating the lights that emanate from each, until he reached the presence of God. Meditation on a square should be practiced in seclusion (*hitbodedût*, which corresponds to the Sufi technical term *ḥalwa*), with the head placed between the knees, that is, in the so-called prophetic posture. The mystic should contemplate (*hitbônen*) the lights, colours, and letter combinations of the rooms. The meditation is accompanied by a prayer composed of ten supplications, each one invoking a different name of God (*Ehye 'ăšer 'ehye*, *YH*, *'Elohim Ḥayim*, *'El*, *'Elohim*, *YHWH*, *'Adonay Şewaôt*, *'Elohim Şewaôt*, *'El Ḥay*, *'Adonay*), and each one mentioning one of the ten *sefirôt*.⁷

MAGIC SQUARES IN THE HEBREW MANUSCRIPT TRADITION

As mentioned earlier, magic squares frequently functioned as protective charms. As such, they were inscribed on paper or parchment, or engraved on various metals, and worn on the body. However, they also frequently appear in manuscripts of diverse genres, often with no connection to the surrounding text. The Hebrew manuscripts preserved in the Kaufmann Collection at the Library of the Hungarian Academy of Sciences may serve as a sample to study the phenomenon of magic squares in manuscripts copied from the end of the Middle Ages until the end of the early modern period.

⁶ Cf. for example T-S K 2.7, fol. 1v; T-S AS 16.212, fol. 1r; T-S Ar.29.106, fol. 1r; T-S AS 180.102, fol. 1v; T-S AS 183.31, fol. 1r; T-S K2.7, fol. 1v; T-S NS 306.27; T-S NS 264.51, fol. 1v.

⁷ On Şayaḥ and for the English translation of the prayer, see Kaplan 1985: 158–166.

Taking the shelfmarks into consideration, the Kaufmann Collection comprises 591 manuscripts.⁸ However, this figure is misleading as many of the shelfmarks indicate volumes composed of various manuscripts bound together. I was able to find magic squares in 14 of these (2% of the volumes).⁹ As expected, squares occur most frequently in magical manuscripts, but they also may appear in Kabbalistic, liturgical, medical, and other texts. Sometimes they do not form an integral part of the text, seeming completely unrelated to the subject matter. In these cases, they are usually added to the end of a text unit or can be found on the pages or on the parts of pages that had remained blank after completing the copy of a certain text.

The 3x3 Square Composed of the First Nine Letters of the Alphabet

The square that occurs most frequently in the manuscripts is the simplest, 3x3 square containing the first nine letters of the alphabet. As with the ideas associated with the Luoshu, the popularity of this square may lie in its ability to express key concepts of the belief system through its mathematical properties. In Hebrew writing, numbers are represented by letters; therefore, numerical squares and squares composed of letters are identical. The central number of the square, indicated by the Hebrew letter 'hê' (which, on the one hand has the numerical value of five, and on the other hand serves as a substitute for the ineffable name of God) is an obvious visual representation of God as the origo. The sum of the numbers added up vertically, horizontally and diagonally is 15, which corresponds to the numerical value of the letters YH (Y=10, H=5), a shortened form of the tetragrammaton, YHWH.¹⁰ Furthermore, the total sum of all the numbers in the square is 45, which equals the numerical value of the expanded tetragrammaton. The expanded form of a word is produced by writing down the word employing the names of the letters it contains YHWH = YWD HA WAW HA. The numerical value of the expanded form is the sum of all the letters it contains Y (YWD=20) H (HA=6) W (WAW=13) H (HA=6); 20+6+13+6=45. Thus, the square of three is a visual representation of the name of God, expressing both God's centrality in the universe, and the essential identity between the universe and God.

As previously mentioned, Jewish mystics, like their Muslim counterparts, associated the squares with the seven astrological planets (and certain metals). The square of three was related to the planet Saturn and to the metal lead. This had practical implications: if used as an amulet, the square had to be cut upon a sheet of lead, at a time astrologically appropriate for the movement of the planet Saturn, and it was supposed to mobilize the forces of that planet.¹¹

Are these inherent numerological properties and supposed astrological peculiarities explained or even alluded to in the manuscripts? Hardly. In most cases, the square of three simply appears as a protective amulet with no metaphysical implications. The functions attributed to it vary: easing childbirth (A 245, p. 80; A 247, pp. 149, 219, 281, 291; A 269, p. 81; A 488, p. 9; A 526, p. 378); divination through requesting a revelatory dream (A 247, p. 281; A 269, p. 80; A 520, p. 206; A 526, pp. 431–432); seeking protection when dealing with rulers and potentates (A 247, p. 281;

⁸ The only published catalogue of the collection is Weisz 1906.

⁹ In manuscripts Kaufmann A 149, 240, 245, 247, 269, 271, 419, 442, 444, 488, 520, 521, 526, 527.

¹⁰ For religious reasons, in practice the number 15 is indicated in Hebrew by TW ($\text{T}=9$, $\text{W}=6$), in order to avoid the profanation of the divine name.

¹¹ Budge 1961: 394. The square of three (among other Hebrew squares) is discussed briefly also in Schrire 1982: 64–67 and in Gondos 2025: 63–65.



ז	ט	ב
י	ה	ו
ח	א	ו

Fig. 1 Kaufmann A 271, p. 13



זאת כוונת הרבנו עשונו כמדרשו חזקוני
חתימה שנקראים חסדו ענין וכללם
חשן טו כזה

6	1	8
7	5	3
2	9	4

טו

4	9	2
3	5	7
8	1	6

טו

Fig. 2 Kaufmann A 419, p. 5

A 269, p. 81; A 526, p. 433; A 527, p. 91). Conversely, the mathematical properties of the square are discussed in a manuscript entitled *Sêfer ha-Šêm* (*Book of the Name*, A 271, p. 13) (Fig. 1) attributed to 'Avraham ibn 'Ezra' (1089–1164/1092–1167). However, the mathematical properties are not associated with any mystical content explicitly. Nevertheless, it can be supposed that since the whole work treats the names of God, its letters, numerical values *et cetera*, the reader is supposed to infer the metaphysical relevance of the square from the context. The same may hold true for manuscript A 419 (Fig. 2), which contains short texts, prayers, poems, notes, and personal records. The square is depicted in two versions, with two different orders of the numbers, written using the digits of the Indo-Arabic numeral system (i.e. the digits used in Christian Europe). Only the mathematical properties of the squares occur in the concise note that accompanies them. The context is clearly magical and mystical. The squares are copied between two text units:

a Kabbalistic prayer and a short work on *šinnûy ha-šêm*, changing the name of a person for magical purposes, for example, in case of illness. Nevertheless, there is no definitive proof that the copyist regarded the square itself as a magical or mystical device.

Below is a brief list of the volumes of the Kaufmann Collection that contain the square of three, along with the page in which the square appears. The abbreviation ‘coll.’ indicates that the volume is a collection of various manuscripts bound together. In these cases, the list specifies the subject matter of the section in which the square appears.

A 245, on. p. 80: The manuscript contains mystical and magical prayers, rituals, practices, and recipes, beginning with the mystical work entitled *Sêfer ha-Malbûš* (copied in the 16th–17th cent., Ashkenazi script)

A 247, on pp. 149, 219, 281:¹² *Sêfer Sôdôt mi-Refû’â* (*Secrets of Medicine*), magical-medical work collected from diverse sources (17th century, Italian semicursive script)

A 269, on pp. 80–81 (coll.): The section that contains the squares is a collection of magical and medical recipes (17th–18th cent., Italian script)

A 271, on p. 13 (coll.): *Sêfer ha-Šêm* (*Book of the Name*), philosophical work on the names of God (dated: 1515, Byzantine script)

A 419, on p. 5: The squares are copied among notes and personal records; the immediate context is magical and mystical, but the squares seem unrelated to the adjacent texts (dated: 1790–1794, cursive script)

A 488, on p. 9 (coll.): The square appears at the end of a list enumerating the names of God according to the number of letters the name contains, starting with a divine name of one letter and finishing with a name of 27 letters (18th cent., Italian script)

A 520, on p. 206 (coll.): The square is copied between the end of a work on astrology and the beginning of a work on mathematics (16th–17th cent., Ashkenazi script)

A 526, on pp. 378, 431–433: *Sêfer Sôdôt mi-Refû’â* (*Secrets of Medicine*) (16th–17th cent., Italian script)

A 527, on p. 91: Magical and medical recipes (dated: 1578, copied in Palestrina, Italy)

Obviously, the square appears in medical-magical, mystical, and mathematical texts. The same manuscript may contain multiple appearances of the square, sometimes on adjacent pages, with distinct functions attributed to them. For instance, in A 269, the square on p. 80 (Fig. 3) is represented as a device for requesting a revelatory dream: ‘Write down the amulet and put it un-

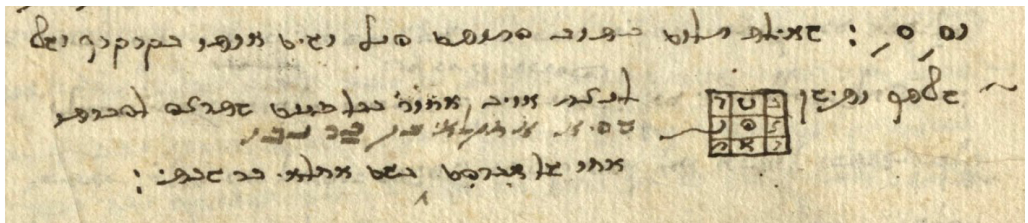


Fig. 3 Kaufmann A 269, p. 80

¹² Besides these, the manuscript contains two more squares of three on p. 209, but in these only two numbers recur, while others are missing (i.e., they do not contain all the numbers from 1 to 9). The purpose of the squares is to succeed in doing something.

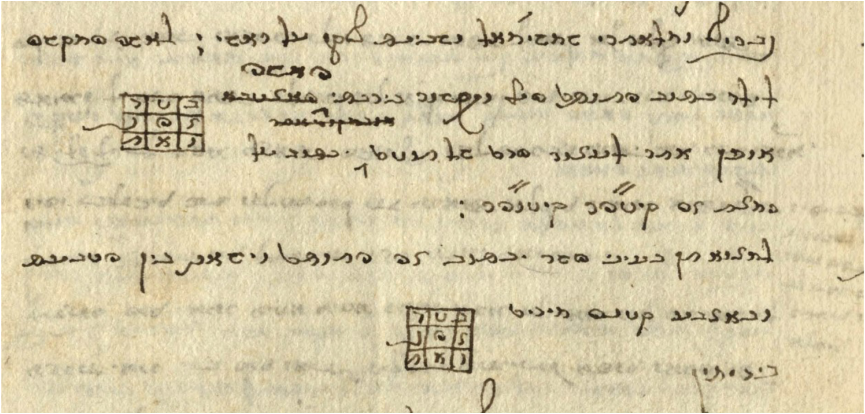


Fig. 4 Kaufmann A 269, p. 81



Fig. 5 Kaufmann A 526, p. 378

der your head, ask your question and fall asleep!"¹³ On p. 81 (Fig. 4) the same square is presented as a device to ease childbirth: 'For the woman who has difficulty giving birth: Write down the amulet and tie it to her thigh!'¹⁴ On the same page, after another short recipe (not related to the square), the amulet is copied third time, with the following instructions: 'To find favour in the eyes of the governor, write down this amulet and put it between a ring and the little finger of your right hand!'¹⁵

Another manuscript (A 526) provides more elaborate instructions for the same purposes. As a device for easing childbirth, the square occurs twice on p. 378 (Fig. 5). According to the instruc-

¹³ "שאלת חלום כתוב החותם ושים אותו בקדקדך ישאל שאלתך ותישן"

¹⁴ "לאשה המקשה לילד כתוב החותם ותקשור בירכתי האשה"

¹⁵ "למצוא חן בעיני השר יכתוב זה החותם וישא[.] בין הטבעת ובאצבע קטנה מימיו ביד ימין"

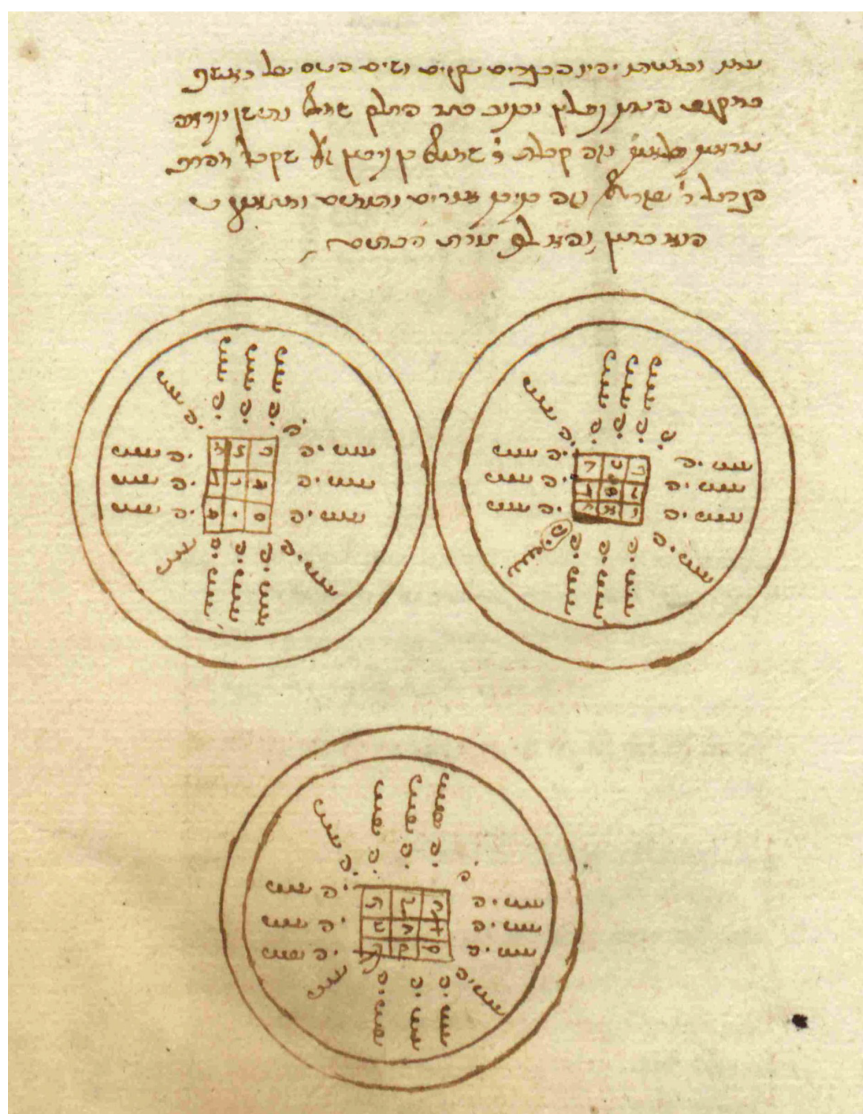


Fig. 6 Kaufmann A 526, p. 432

tions, it should be written on two pieces of potsherds that did not encounter water. Two biblical passages should be written around the squares, Isaiah 49:9: beginning ‘Saying to the captives: go out; to those who are in darkness: show yourselves...’; and Psalms 142:8: beginning ‘Bring out my soul from the prison...’ The potsherds should be placed on the woman’s legs, and she will give birth immediately.¹⁶ The same manuscript also presents the square as a divinatory device (A 526, pp. 431–432, Fig. 6):

¹⁶ For a parallel, see Gondos 2025: 63–64.

'In order to ask for a dream ... write down these three houses (*battim*) depicted below ... on a plate made of silver or lead, and beware that no iron should touch it ... and recite this biblical verse: And I was still saying my prayer when the man Gabriel whom I have seen in vision at the beginning, was made to fly swiftly, coming to me about the time of the evening offering. [Daniel 9:21] Then utter this name: S G T and repeat the biblical verse ... and purify yourself! And no one should sleep with him or in his bed, and his cloths must be clean. You should put the plate on your head in the *miqvê*, you should wear a phylactery ... and fall asleep, and you will see tremendous things and miracles. This was bequeathed by rabbi Šemû'el ben Tibbôn, may his memory be blessed, and he received it from the great rabbi 'Ezrî'el, and this was written on the 'ûrîm and the *tûmmîm*^{17,18}

The diagram that accompanies the instructions is complex: the square is depicted three times, each square written in the middle of double circles, surrounded by the words 'YH 'annenî' ('God, answer me') from every direction (15 times).¹⁹

An interesting example of the square of three can be found on p. 223 of A 247, where the characters in the square are spectacle letters (with the equivalent Hebrew letters written in the corners of each cell). The purpose of the square is 'to protect against all harmful things' (Fig. 7).

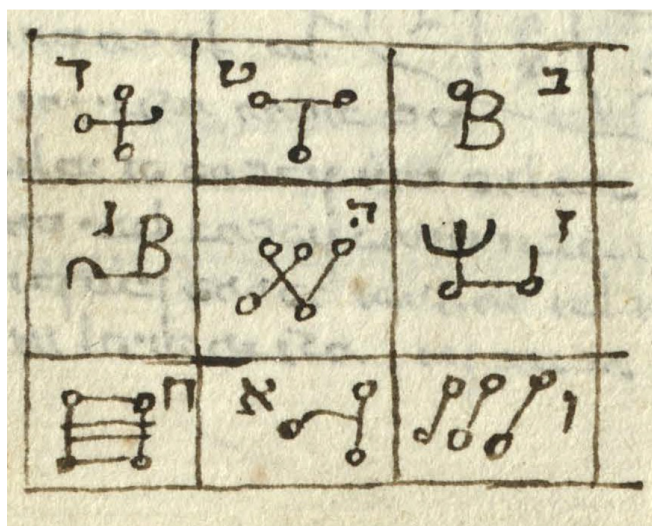


Fig. 7 Kaufmann A 247, p. 223

¹⁷ Divinatory devices of the high priest in Ancient Israel, cf. Ex. 28:30, 1 Samuel 14:41, *et cetera*.

¹⁸ "שאלת חלום [...] כתוב אלו ג' בתים המצויירים למטה [...] בטס של כסף או עופרת והזהר שלא יגע בו שום ברזל [...] תאמר זה הפסוק ועוד אני מדבר בתפילה והאיש גבריאל אשר ראיתי בחזון בתחלה מועף ביעף ונגע אלי כעת מנחת ערב ואחר תאמר זה השם שגת ואמור הפסוק פעם אחרת [...] וטהר עצמך ולא יישן איש עמו ובמשתו יהיו הבגדים נקים ושים הטס על ראשך במקוה הנחת תפילין [...] ותישן ותראה נוראים פלאים וזה קבלת ר' שמאל בן תיבון ז"ל שבקל מהרב הגדול ר' עזריאל וזה כתיבת אורים ותומים"

¹⁹ A 520, p. 206 also contains detailed instructions for a divinatory dream obtained by means of the square of three. The square of three is surrounded by the words YH 'annenî in A 247 pp. 219 and 291, as well.

The Square of Four that Contains the Numbers from 1 to 16

The square appears in A 488, p. 8 (collection of various works, 18th cent., Italian script), after a list of divine names ordered by the number of letters they contain. It starts with a one-letter divine name and ends with a 27-letter name. The square is composed of the letters with a numerical value ranging from 1 to 16 (Fig. 8). A short note clarifies the provenance of the square, stating that it was handed down by a certain 'Avraham 'Aryê, envoy from (?) [...] Tiberias, at the end of the year [5]547 [=1787].²⁰ It is 'a remedy for all kinds of illnesses, especially for bubbles, by the power of this holy name'.²¹ Consequently, the letters of the square are supposed to conceal a name, which is not specified in the instructions. Since the sum of the letters is 34, it may conceal a divine name with the same numerical value. According to Wallis Budge (1961: 394), this square of four, containing the numbers from 1 to 16 is normally associated with the planet Jupiter and with the metal tin.



Fig. 8 Kaufmann A 488, p. 8

The Square of Five that Contains the Numbers from 1 to 25

On the last page of a manuscript (A 419, p. 233) in which someone copied all kinds of short texts for his personal use, there appears a square written in Indo-Arabic numerals (Fig. 9). The same manuscript also contains two versions of the square of three, again copied with the digits commonly used in Christian Europe (on p. 5). The brief explanation that accompanies the square confines itself to its most obvious mathematical property, namely, that the sum of the numbers in each row, column and diagonal is 65. The square does not form part of an organized text unit: it is copied amongst various notes and records. Since neither this nor the squares of three are related to any magical content in the manuscript, one can assume that the copyist was unaware of their

²⁰ "אברהם אריה שליח [...] טבריה בשלהי שנת התקמז"

²¹ "מכל חולי ובפרת מחולי הבעושים בכח שם הקדוש הזה"

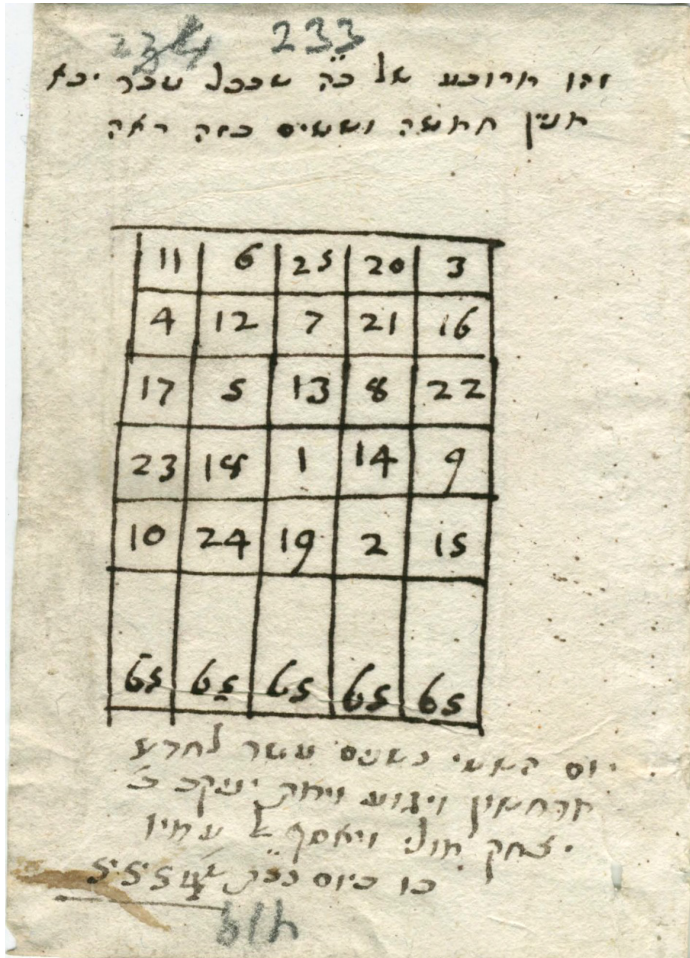


Fig. 9 Kaufmann A 419, p. 233

magical-mystical peculiarities and regarded them as mere mathematical riddles. In any case, the square containing the numbers from 1 to 25 is usually associated with the planet Mars and the metal iron in Jewish mysticism. The sum of the numbers, 65 is equal to the numerical value of the consonants in the divine name 'Adonay (1+4+50+10) (Budge 1961: 395).

SQUARES IN WHICH THE NUMBERS/LETTERS ARE REPEATED

Sometimes, the phonetic value of the letters was regarded more important than their numerical value. In these cases, the letters of a word of magical relevance were written in the square. Since the mathematical properties of the square are of secondary importance, the letters can be repeated, and in consequence, the squares do not meet the prerequisites of proper magic squares. In most cases, the first row of the square contains a word that is easy to understand, and the mean-

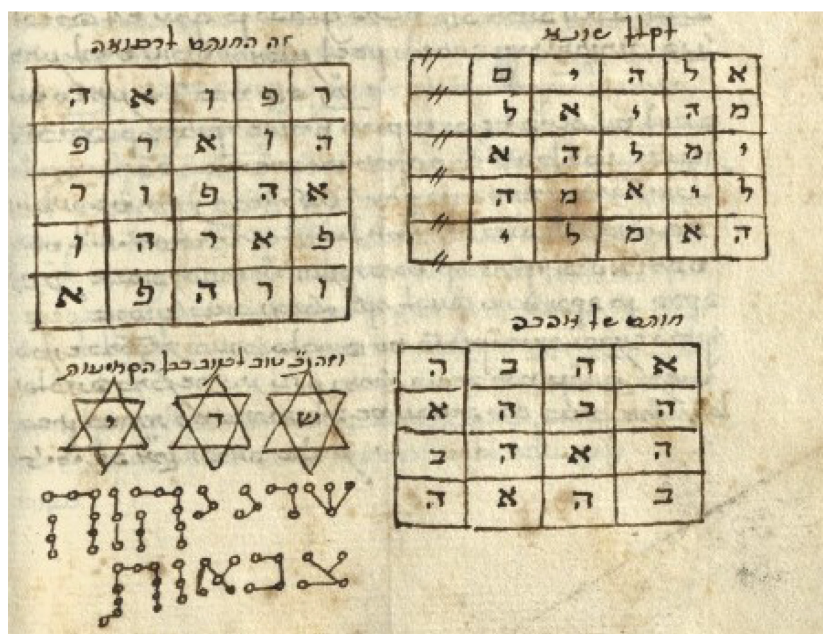


Fig. 10 Kaufmann A 247, p. 218

ing of the word corresponds to the function of the square. Examples of similar squares occur on p. 218 of manuscript A 247. The squares have short notes indicating their purpose but lack any further instructions. For example, the name *Elohim* ('God') is written in a square that may be used to curse one's enemies; the word *refū'ā* ('healing') is written in a square that heals; and the letters of the word *'ahavā* ('HBH, 'love', written with the Hebrew letter *bêt*, pronounced as 'v') are inserted in a square that can be used to incite love (Fig. 10).

The Square of Four that Contains the Letters 'HWH

The square appears on page 43 of manuscript A 442 (Fig. 11), copied by various hands in the 19th century using North African script. It contains various kinds of texts: poems in Hebrew with Judeo-Arabic headings, short records, magical texts, a Passover Haggadah and other liturgical texts. The hand that copied the square and the accompanying remarks appears far less skilled than the copyists of the rest of the manuscript. According to the heading, it is 'an amulet that is good for everything'.²² It contains a conjuration that begins with the words 'answer me', invoking various *nomina barbara*, several angels (such as Rafael, Gabriel, Uriel) and the divine name 'I am who I am' (*Ehye 'ašer 'ehye*), the name by which God introduces himself to Moses in Exodus 3:14. The amulet does not form part of a larger text; it appears to have been copied between two unrelated records. The text does not explain the meaning of the letters copied in the square. One may propose that the letters 'HWH (אהוה) conceal the initials of the second part of Genesis 1:1:

²² "קמיע טוב לכל דבר"

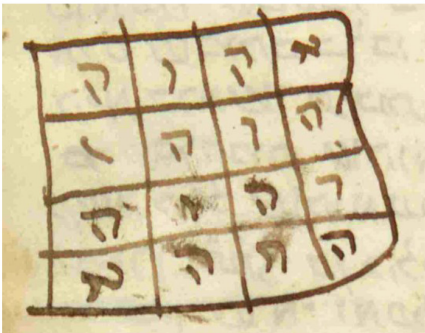


Fig. 11 Kaufmann A 442, p. 43

‘[In the beginning God created] the heavens and the earth’ (את השמים ואת הארץ). Moreover, it evokes the name ‘HYH (*Ehye*), the first word of the phrase ‘I am who I am’, which frequently appears in spells, including the one that accompanies this amulet.

The 5x5 Square Composed of Letters that Have the Numerical Value of Odd Numbers

I found the 5x5 square containing the letters ‘alef, gîmel, hê, zayin and têt (which correspond to the odd numbers from 1 to 9) in three manuscripts of the Kaufmann Collection. This square is well known in Arabic magical tradition (see below) but occurs less frequently in Hebrew texts.

The square appears in manuscript A 149 (Fig. 12), which is a collection of manuscripts copied in Italian cursive script by different hands during the 16th-17th centuries. An ownership note

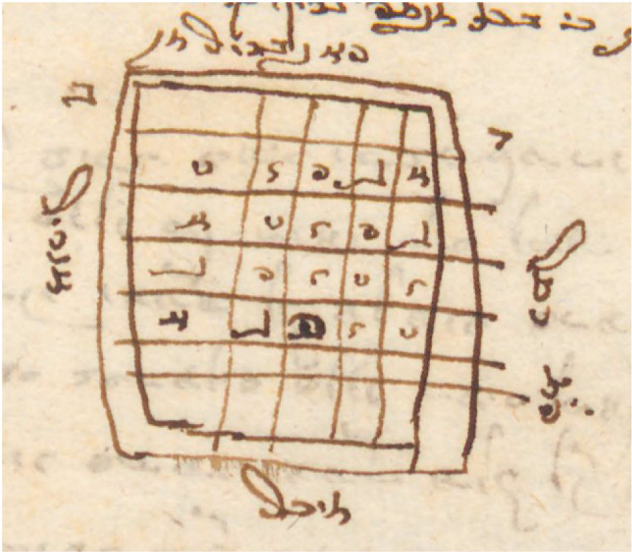


Fig. 12 Kaufmann A 149, p. 175

by Yisrael Modena dated to the year 1694 is placed on page 169. Pages 171–178 form a separate section within the volume. This unit is composed of a slightly smaller quire than the others in the volume. The text bears no title, and, in its current arrangement, it begins on page 173 with a numbered magical recipe (no. 15). However, recipe no. 15 is not followed by any other recipes, and two-thirds of page 173 and the following page (p. 174) are blank. A small collection of recipes follows on pp. 175–176 numbered from 1 to 14. Recipes 1–13 are copied by the same hand, while a different scribe copied 14–15. Page 177 is blank, and p. 178 contains a recipe for a mixture of substances to help a sick person who cannot sleep. This recipe is in Italian written in Latin characters. After the Italian recipe there is a Hebrew one, neither is numbered. These recipes are very unsophisticated and contain hardly more than a single instruction. For example, according to recipe no. 8, to find out if one is under the influence of a spell, one should investigate a vessel full of nut oil. If he can see his reflection, he is not enchanted. According to recipe no. 12, to find out if a sick person will survive, one should bring a bird to the sick man's bed; if the bird looks at him, he will recover from his illness. However, most of the recipes are more complex, operating with divine names, unintelligible magical names (*nomina barbara*), and acronyms that stand for magical words or names. These names should either be written or engraved on different surfaces, or uttered aloud, or in some cases, simply contemplated mentally. For example, recipe no. 3 is a spell guarding the horse from stumbling and the rider from falling. When the rider mounts the horse, he should concentrate on four letters (*D, M, ' , H*) from a passage of Psalm 36:7 (*Adam u-vhemâ tôšî'a ha-Šêm*; 'man and beast the Lord preserves'). According to the instructions of the recipe, concentrating on the letters prevents accidents, and even if the rider falls from the horse, he will not be injured. Most magical names differ from the text of the recipes visually: while the text is in cursive script, the names are in square characters.

The importance of square letters is explicit from the recipe that accompanies the figure of the magic square:

'In case of a plague, one should write on a piece of parchment with square script, and one should also put the herb called *rôta* in it [in the amulet]. [It should be prepared] on Wednesday, when the moon starts to increase, before sunrise. Before preparing it, he should recite the psalm "Let the graciousness [of the Lord, our God be upon us]" [Psalms 90:17], and after that he should say: "I gather it in the name of the Lord, the God of Israel, in order to protect so-and-so, the son of so-and-so from the plague and from the pestilence!" After that he should engrave it on a golden ring, and he should hang this amulet upon himself. While he wears the amulet, he should not fear anything, God willing. But this amulet is of no use for another plague, since each plague needs a new amulet. And it looks like this: [5x5 magic square]²³ (Kaufmann A 149, p. 175).

The recipe is accompanied by a brief summary of the instructions, which also adds new directions to the former ones:

²³ "למגפה צריך לכתוב על קלף כתב אשורית וגם צריך לשים בתוכה מעט אשב הנק' רוטא ביום ד' בתוספת הירח קודם זריחת השמש וקודם שתכתוב תאמר מזמור ויהי נועם ואח"כ תאמר אני מלקט אותה בשם ה' אלוקי יש' לשמירת פלוני בן פלוני מהדבר ומהמגפה ואח"כ תחתוך אותה בטבעת של זהב ותילה זאת הקמיע עליו וכל זמן שזאת הקמיע עליו לא תתיירא בע"ה גם קמיע זאת אינה מועילה למגפה אחרת כי בכל מגפה צריך קמיע חדש וצורתה יהיה זאת"

‘Cure from the heaven for so-and-so, the son of so-and-so. Amen, amen. I have received [as a tradition] that the following conditions should be fulfilled with regard of this amulet: it should be written on *rôš ḥodeš* [the first day of the lunar month] that falls on Wednesday; the letters should be written in alphabetical order, *’alef* before *gîmel*, and *gîmel* before *hê*, and so on; when making the incision, one should recite the first passage of [the prayer] “Hear, oh, Israel” [Deuteronomy 6:4], and “Let the graciousness” [Psalms 90:17] after that. And it does not work for more than a single year”²⁴ (Kaufmann A 149, p. 175).

The square contains the letters *’alef*, *gîmel*, *hê*, *zayin* and *ṭet*, which correspond to the odd numbers 1, 3, 5, 7 and 9. However, the copyist made an obvious error by failing to complete the fifth row of the square. Could this have been deliberate? Although the numbers that should be written in the fifth row can easily be calculated, someone mechanically copying the square and ignoring the rule of its composition would be unable to fill in the empty cells of the table.

The square composed of the odd numbers of the alphabet is well known in Arabic culture, as well. However, in Muslim magical tradition this square has no protective function. On the contrary, the square composed of the Arabic letters *alif*, *ġîm*, *hâ*, *zâ*, *ṭâ* (which have the numerical values 1, 3, 5, 7, 9) provoke calamity and is used as an evil charm. The reason is that letters with a numerical value of an even number are called ‘the letters of relief, expansion’ (*hurûf al-baṣṭ*) in Arabic, while those with a numerical value of an odd number are regarded as ‘the letters of anxiety’ (*hurûf al-qabḍ*). Relief and anxiety are two fundamental Sufi concepts that describe both the mystic’s fluctuating spiritual states and the opposing manifestations of divine actions in the universe. The concepts of relief and anxiety do not correspond to the Hebrew pair of concepts *middat ha-dîn* and *middat ha-raḥamîm* (God’s attributes of justice and mercy), since relief (*baṣṭ*, literally ‘expansion, relaxation’) can have negative connotations. For example, it can describe the mystic’s state of unawareness, laxity or inattention. Conversely, anxiety may be an incredibly positive quality, like the excited perturbation a lover feels in the presence of his beloved. Complex mystical concepts, however, often appear in a simplistic form in magic: consequently, while in Arabic magic the general idea of Muslim letter mysticism dividing the letters in two opposite sequences of relief and anxiety is well-known, the intricate meaning of the pair of concepts is neglected. Therefore, spells and amulets operating with the letters of anxiety are usually malevolent (Canaan 2002: 161).

In the manuscript of the Kaufmann Collection, the Hebrew instructions for preparing the square contain remarks about how the letters should be written. While the image next to the instructions shows the form of the square in cursive script, the recipe explicitly states that square characters must be used in the amulet. This suggests that the square script is endowed with a special power. This is like the Arabic practice of writing magical spells with disconnected letters. In Arabic script, letters are connected to one another, and this connected form does not display every element of each character. The disconnected form of the letters are visually the most complete forms of the characters. According to Arab magical tradition, a letter exerts its strongest magical influence through its most complete, independent form. In both the Arabic and Hebrew magical traditions, deviation from common usage bears special significance: just as disconnect-

²⁴ "אסוותא מן שמיא לפלוני בן פלוניא אמן אמן וקיבלתי אני שזאת התנאים צריך בקמיע זאת הנ' דהיינו צריך שתהיה כתיבתה בר"ח שיהיה יום ד' גם צריך שיכתוב בסדר אלפא ביתא א' קודם לג' וג' קודם לה' וכול' גם צריך כשיחתוך ה[צ]ורה שיקרא פ' ראשונה דשמע ישראל ויהי נועם אח"כ לא יועיל כי אם לשנה א'"

ed letters normally do not occur in Arabic, the square script is unusual in an everyday Hebrew context. Furthermore, the instructions accompanying the magical recipe in the Kaufmann manuscript stipulate that the letters should be written in alphabetical order. Similar requirements appear in Arabic magical manuals as well, since the order in which the letters or numbers are written modifies the effect of the square (aṭ-Ṭūḥī, n. d., pp. 164–165). The square is surrounded by the names of the angels Gabriel, Michael, Uriel and Azriel – a feature again well-known from Arabic magical tradition, where the names of these same angels often accompany magic squares. The square is set within a frame, and it has empty, superfluous cells both above and below.

Redundant cells and rows, and a frame around the square also occur in the second instance of the square in the Kaufmann Collection (Fig. 13). The square appears in manuscript A 444 was copied in the 18th century in North-African script. The square is on a page between two text units: a Judeo-Arabic Haggadah and a collection of liturgical poems (*piyyūṭim*). The Haggadah is incomplete, ending abruptly in the middle of the Exodus story, on p. 14 of the manuscript. One-third of the page remained blank suggesting that the copyist discontinued his work. However, the same scribe copied a magic square on the following page. As with the previously discussed occurrence of the 5x5 square in manuscript A 149, also in A 444 the square is surrounded by a frame and the names of angels (only Gabriel and Uriel this time, as only two sides of the frame are elaborate). While the text units on the preceding and following pages are in cursive script



Fig. 13 Kaufmann A 444, p. 15

in square letters, on leather or parchment made from the skin of a kosher animal; it should be placed in a case together with some *rôṭā* herb cut on a determined day; and so on. The square is surrounded by a frame and four angelic names. Both the instructions and the visual representation of the square may be a variant of the square in manuscript A 149, discussed above, with the difference that here, in A 247, the amulet is attributed to ha-Ari (Isaac Luria, 1534–1572).

In summary, regarding the form, the 5x5 squares display features characteristic of Arabic magic, such as the frame, angelic names, distinctive script, and the concept of creating a square with letters that have a numerical value equal to an odd number. These features have parallels in Arabic tradition. However, while in Arabic tradition such a square is malevolent, the squares that occur in the Hebrew manuscripts of the Kaufmann Collection do not have this property.

The Square of Seven Composed of Seven Arabic Names of God

The square contains the initials of seven names from ‘the 99 most beautiful names of God’ (*asmāʾ Allāh al-ḥusnā*), a well-known concept in Islam which asserts that God has 99 names revealed to humankind, each one depicting a different divine attribute. The square appears in two manuscripts of the Kaufmann Collection (A 240, p. 49 and A 521, p. 87). Manuscript A 240 is a collection of prayers; magical and astrological texts copied in the 17th–18th centuries in Sephardic script. A title was added on the flyleaf by a later hand: *Séfer segûlôt ve-qabalâ maʾasît ve-ʿeize liquṭîm mi-sêfer megalê ʾamûqîm ha-nidpas u-mi-sefarîm ʾaḥerîm qedûmîm k[itvei] y[ad]* (‘Book of amulets and practical Kabbala, and selections from the Book Revealing Depths which has been printed, and from other ancient manuscripts’). A 521 was copied by different hands in the 18th century in North African script. It is a collection of various short works bound together, some of which are in Judeo-Arabic. It contains poems, astronomical works, geomancy, angelology, lists of names of angels according to encampments or army units, names that natural phenomena are denominated with in the four seasons of the year, names that the angels are called in the twelve months of the year, rhyming dialogue between good and bad inclinations, etc.

The squares themselves are identical in the two versions, but the instructions diverge. A common feature is that the square, which contains the initials of Arabic divine names – the letters F, Ġ, Š, T, Z, Ḥ, Z – is surrounded by the corresponding names in Arabic: *Farīd, Ġabbār, Šakūr, Tawwāb, Zahir, Ḥabīr, Zakī* (meaning Unique, Almighty, Thankful, Forgiving, Manifest, Knowing and Pure respectively). Furthermore, both sources attribute the square to Moses Maimonides, and the first instruction regarding its use (to incite love) is similar in both versions. The continuation, however, differs. A 521 (Fig. 16) contains fewer instructions, although these are more detailed than those in the parallel version. According to A 521,

‘This is the seal of Rabbi Moses Maimonides, peace be upon him, which serves to incite love either between a man and his wife, or between a man and his fellow. Take a plate made of lead and tin, engrave these letters on it, perfume it with resinous incense and bury it in the ground of the house of that person [whose love] you want [to incite] and write on the plate his name and his mother’s name, and this is the image [of the seal – the square is depicted with the Arabic names around it].’²⁶

²⁶ “זה חתימה של הרמב"ם על"ה לאהבה בין איש לאשתו או בין אדם לחבירו קח לוח מן עופרת ובדיל ותחתוך על הלוח זו האותיות ותקטיר אותו בגפרית וקבור אותו בקרקע הבית שאתה רוצה אהבתו וכתוב עליו שמו ושם אמו על הלוח וזו היא הצורה”



Fig. 16 Kaufmann A 521, p. 87

The instructions for use mention another way of preparing and hiding the amulet, without indicating a different purpose. The same aim, i.e. love, could also be attained by engraving the seal on tin, fumigating it with a different type of incense, and burying it under a weak fire (a strong fire would melt the tin, as mentioned in the instructions). However, manuscript A 240 offers a list of seven different uses for the same amulet: inciting love, madness, hatred, spilling blood, making a person sick, ‘binding’ a person (rendering him impotent) and bringing back a thief who has escaped.

The most interesting feature of the square is undoubtedly that it operates with Muslim divine names. As I have discussed elsewhere, this square can be traced back to a Muslim amulet, which during the process of adapting it to Jewish cultural milieu, has been purged from its most explicit Muslim characteristics.²⁷ A phase of transition between Muslim and Jewish uses can be observed in a Judeo-Arabic manuscript preserved in the Real Biblioteca del Monasterio de San Lorenzo de El Escorial,²⁸ in which the square and the Arabic names are surrounded by seven circles, each circle containing a quotation from the Quran (24:35 and 6:59) and an adjuration invoking seven demons, the last of which is Maymūn. It is hard to consider it as a mere coincidence that the name of the last demon in the Judeo-Arabic text (Maymūn), and the name of the rabbi to whom the amulet is attributed in the Hebrew sources (Môšê ben Maymôn in Hebrew and Mūsā ibn Maymūn in Arabic) is partially identical. It is more probable that during the process of adaptation to the Jewish environment the demon Maymūn was converted into the well-known Rabbi Mūsā ibn Maymūn.

²⁷ The parallel of the amulet can be found in a Judeo-Arabic manuscript dealing with letter mysticism. The unit in which the amulet occurs is entitled *al-Qasam al-ġāmi’ aš-šarīf* (meaning ‘universal adjuration’), and it is a textual parallel of the anonymous Arabic magical treatise entitled *Kitāb dā’irat al-aḥruf al-abġadiyya* (‘Book of the circle of the letters of the alphabet’), cf. Zsom 2017.

²⁸ The amulet can be found in manuscript G-I-13 (11), fol. 4r.

CONCLUSION

Magic squares found their way into Jewish culture from the Islamic world, and therefore they retained properties attributed to them in Islamic magic and mysticism. However, since teachings regarding their composition, symbolism and operation were secrets that should not be publicly propagated, these details were written down in an extremely limited extent by Muslim authors and were hardly available for Jewish readers. Nevertheless, they may have been accessible through oral communication with Muslims.

In the Hebrew manuscripts of the Kaufmann Collection, magic squares mostly occur in medical, magical, and mystical contexts, but their relation to their immediate context is often unclear. The rationale behind the squares, their *modus operandi* is never explained or even mentioned, while their mathematical properties are sometimes discussed. The most popular square is the square of three, which probably attained such esteem due to the letter H (perhaps the most common abbreviation for the name of God) in its centre, and because of the easily discernible numeric al symbolism through which the square represents God and the universe as his emanation: both the origo and the square as a whole equal the numerical value of God's ineffable name obtained by means of different computations. In the manuscripts, the same square may have different magical functions, and we can find false squares as well. The influence of the Muslim background appears in the practical instructions regarding the composition of the squares, the effects attributed to them, and sometimes in reminiscences of Muslim concepts that go back to the Quran.

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