A self-portrait of the illuminator: ‘Mention in your prayers the priest Mkrtitch, the miniaturist and the illuminator of this book. And say with the same mouth : May God have mercy with me and my parents, the priest Katchatour and his wife.’ (15th century?).

Source: MS Leiden, Or. 5483, f. 5b
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Codicology Three:
making, lay-out

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The making of the manuscript, instruments

A number of instruments and techniques are necessary to produce a manuscript.

First there are the pens necessary to write with. In the Islamic and Middle-Eastern realm these have almost exclusively been reed pens.

Then there are inks, to be made according to certain recipes. These inks are kept ready in ink-wells.

Coloured inks are used, and sometimes colouring is used for the paper (we will not treat this in detail).

These instruments are used by the copyist after he has made up his mind concerning the lay-out of the book.

Lay-out instruments will be shown and discussed. Lay-out in the manuscripts will be discussed in the follow-up.
Varieties of reed pens from the Maghrib and from the Mashriq.

Source: F. Déroche 2006, p. 105
A glass inkwell of Roman times, and detail.

Source: not noted. Original in Leiden Museum of Antiquities.
Complex inkwell from Morocco for the making of polychrome manuscripts.

Another ceramic inkwell from Morocco (19th/20th century) for the making of polychrome manuscripts.

Source: Original in collection J.J. Witkam, Leiden.
Another ceramic inkwell from Morocco (19th/20th century) for the making of polychrome manuscripts.

Source: Original in collection J.J. Witkam, Leiden.
Another ceramic inkwell, with silver frame, and provided with a Maghribi reed pen, from Morocco (19th/20th century) for the making of polychrome manuscripts. Source: Original in collection J.J. Witkam, Leiden.
The same ceramic inkwell, with silver frame, and provided with a Maghribi reed pen, set in its holder, from Morocco (19th/20th century), for the making of polychrome manuscripts.  

Source: Original in collection J.J. Witkam, Leiden.
Inkwells from Central-Asia for making monochrome manuscripts.

Inkwell from Central-Asia for making monochrome manuscripts, with pen rest.

Inkwells for making manuscripts in two colours.

Portable penholder with inkwell, for making manuscripts in two colours. Ottoman style after originally Japanese design.
Reed and bambu pens.
Reed pens, Middle-East.
The Reed pen and its parts

Source: Adolf Grohmann, *Arabische Paläographie* I (1967), p. 120
Mistara, ruler with fixed lay-out, and line-applier of bone (from Egypt) Source: Originals in collection J.J. Witkam, Leiden.
Paper scissors (Egypt), with detail: Ya Fattah (يا فتاح)

Utensils for making polychrome manuscripts: complex inkwells.
Source: private collection, Leiden.
Text lay-out, the word(s) on the page(s)

Basic issues to be kept in mind:

1. The page as part of the book

2. Distribution on the text on the page, division between ink and blank

3. The blank is as important as the ink: stability or instability of reading. If the words are bricks, the blank is the cement.

4. ‘Scales of grey’ in the overall view: first impression of accessibility, first impressions for identification.

5. Interline (‘leading’), margins, frames, gadwala

6. Colours

7. Size of script, number of script forms per line of text

8. Ornaments (=> illumination)
Shiʿr Abi Talib. A manuscript from Baghdad, dated Muharram 380 (990), copied from and collated with a manuscript in the handwriting of Ibn Ginni (d. 392/1002). Source: MS Leipzig 33, f. 32a.
Shi‘r Abi Talib. Colophon dated Baghdad, Muharram 380 (990), copied from and collated with a manuscript in the handwriting of Ibn Ginni (d. 392/1002).
Source: MS Leipzig 33, f. 32a
A *mistara* from South Arabia, with a page lay-out in columns.

A simple student’s *mistara* from the Cairo genizah.

Mistara, ruler, here containing the layout for an opening page with *shamsa*, possibly of an Ottoman Qur’an. Found as a bookmark in a manuscript.

Source: collection W-001, and *mistara*, collection Jan Just Witkam, Leiden
A simple student’s *mistara* from Egypt. The threads are pasted to the cardboard. The reverse side of the cardboard has the exact mirror image of this page.

The present side makes a recto page in an Arabic manuscript, the reverse makes the exactly identical verso page.

Age not determined, but possibly beginning 20th century. Height c. 29 cm.

Source: Original found in 2010 in the Library of Deir al-Anba Maqar, the Monastery of St. Macarius, Wadi Natrun (Egypt).
Our sources about lay-out in Islamic manuscripts

Indirect or implicit sources are the manuscripts (and the *mistara*) themselves. They show the application of the rules, but they do not formulate these rules. In the manuscripts all rules about lay-out are implicit. Methodologically there is the danger that the researcher projects his/her own ideas about lay-out onto his/her study material.

Direct sources are accounts by copyists, or sets of rules that have been formulated by them. These are extremely rare. I have published one such a set in 2002, which was formulated for 19th-century copyists of Ottoman Qur’ans. But the rules are much older.

Recently I found in several Mamluk Qur’ans in the National Library of Egypt (*Dar al-Kutub al-Misriyya*) similar sets of rules. Either type will be reviewed here. And a reason for their existence will be offered.

Again, as is always the case with manuscripts: there are rules, but the copyists are under no obligation to permanently follow these.
Lay-out rules for Ottoman Qur’ans

Twenty-nine rules are formulated:
(MS. Leiden, Or. 11.701, ff. 90b-91a, copied 1279 AH)

1. Each one of the thirty agza’ is written on ten leaves […].

2. The beginning of each guz’ coincides with the beginning of the page.

3. On the beginning of each page is the beginning of an aya, and at the end of each page is the end of an aya.

4. The end of each sura coincides with the end of the lines.

(Then follows a large number of rules about the handling by the copyists of specific words or phrases, such as fil-Qur’an al-‘Azim, al-Hamdu lillah, which must be written at the beginning of a line, etc.).

29. […] No word is cut into two, one part being at the end of the line, the other part at the beginning of the (next) line, and everything that must be observed is written in red ink.
Lay-out rules of a Mamluk Qur’an, dated 858/1454-1455), with the ex-libris of Sultan Abu Sa‘id Khushqadam.
Source: MS. Cairo, DAK, Masahif 90, ff. 1b, 2a
Lay-out rules for a Mamluk Qur’an

(Taken from MS. Cairo, DAK, Masahif 90, f. 1b, dated 858/1454-5, copy with on f. 2a an ex-libris of Sultan Abu Sa‘id Khushqadam):

...وأما ما هو في مجموع صفحاته،
فالأول أن كل صفحة أولها أول آية وآخرها آخر آية،
والثاني أن آية كل سجدة من سجود التلاوة أخرها آخر سطر،
والثالث آخر كل سورة آخر سطر،
والرابع أن كل حزبين في عشرة أوراق وصفحة، إلا الجزء الأول والأخير، فان كلا منهما اثنا عشر ورقة كواصل لأجل الفاتحة والغالقة بالذهب،
والخامس أن كل حزب مجزا بالثمن والربع والنصف في كل دائرة الذهب في هامش كل صفحة، وإن وجد شيئ من ذلك في غير موضعه المذكور فهو سهو من الكاتب،
وقد تم ذلك بحمد الله عز وجل، فان الله تعالى يغفر لكاتبنه وللقارئ فيه، ولمن نظر فيه,...
The application of the layout rules of a Mamluk Qur’an, dated 858/1454-1455).

Size of the original: 86.5 x 60 cm

Source: MS. Cairo, DAK, Masahif 90, f. 132b
Title-page of *Makarim al-Akhlaq*, by al-Khara’iti, a work of which is said that it is *mugazza’* (مجزأ), which means that it is divided into parts (*agza’* - أجزاء).

Look how the ruling in the paper has been made by a *mistara*. This is called ‘blind ruling’, because no ink or other visible colorant has been used for indicating the lines on which must be written. This is, of course inherent to the use of the *mistara*. Blind ruling is a common feature in Islamic manuscripts.

Source: MS Leiden Or. 122, f. 1a.
A page from the autograph manuscript of *Tuhfat al-Labib* a textbook by al-‘Awfi (lived 883/1478 = date of the copying).

An autograph manuscript basically is a manuscript for which the author and the copyist are one and the same person (نسخة بخط المؤلف).

Look at the blind ruling (*mistara* used), look at the catchword (*تغقبة*), look also at the wide margins and the other, earlier ruling (vertical) in the leaf.

Lay-out: single text block. Extravagant lettering in the last four lines. Yemeni influence?

Source: MS Leiden Or. 1a, f. 288b.

Single text block lay-out, with indentation for poetry, with extra column in the margin for large script names of biographees (alphabetically arranged on the *ism* ‘Ali).

Look at the catchword (تعقيبة) at the bottom (left).

Source: MS Leiden Or. 16c, f. 60b

Single text block lay-out, blind ruled opening as a label for the complete title of the work. This is often the case in books from the Maghrib, and comes instead of a regular title-page.

Look at the catchword (تعقيبة) at the bottom (left).

Source: MS Leiden Or. 24, f. 1b
The end of *Zahr al-Adab wa-Thamr al-Albab* by al Husri. Manuscript dated with letters in the *abgad* system: Saturday 21 Safar of the year l-m-h (= 30-40-8) or (less likely) t-h (= 9-8) but not clear. *Maghribi* script.

Lay-out in two blocks: double column lay-out, for the poetry. Followed by the less-wide, single block lay-out, for the colophon. In the colophon also a royal commission (not identified) for a princely library in Fas, Morocco.

Complex *mistara* used, traces still visible.

Source: MS Leiden Or. 27, f. 130a
Title-page of *al-Shuhub al-Lami‘a* by Ibn Ridwan (after 600/1203). *Maghribi* script, undated, but possibly c. 1000 AH.

Complex *mistara* used, traces clearly visible.

Source: MS Leiden Or. 29 (1), f. 1a.

Part of text in the margin, as a correction to an omission. Note the different orientation of the marginal text, which is done in order to avoid that text of the margin could be confused with that in the main block. In this way contamination is avoided. One marginal correction is separately indicated.

Note the catchword (تعقيبة).

Source: MS Leiden Or. 48, f. 89b.
Arabic translation by Qusta b. Luqa (died c. 300/912) of the Greek work by Heron of Alexandria (d. ca. 70 AD) on the lifting of heavy weights with little effort. *Naskh* script. Lay-out leaves space open for the technical drawings of the machines described. Note the catchword (تَعَقِيبَة).

Source: MS Leiden Or. 51, pp. 60-61.
Zig-i Ilkhani, astronomical tables by Nasir al-Din al-Tusi (d. 672/1274). *Nasta‘liq* script (الخط الفارسي), dated 835 AH.

Lay-out leaves space open for tables (here for a survey of the old-Persian calendar). Text is set within a frame, so that there can never be a confusion with notes in the margin. Use of red ink. Look at the page number, which is possibly authentic.

Source: MS Leiden Or. 75, f. 17a.
The story of Ma’mun with Shagarat al-Durr, an Arabian Nights-like story. *Maghribi* script. Undated, but possibly late-16th or early 17th century (because of provenance history). Language with features of middle-Arabic.


Source: MS Leiden Or. 89, f. 21b.

Look at the catchword (تَعْقِيْبَة).

Source: MS Leiden Or. 102, ff. 1b-2a.
Title-page of *Al-Zig al-Kabir al-Hakimi*, by Ibn Yunus al-Misri (d. 399/1009). *Naskh* script written on lines (an Oriental feature, possibly Iran). Not dated, but several *tamalluk notes*, one dated 852 AH. Another *tamalluk* note by the Ottoman astronomer Taqi al-Din b. Ma‘ruf (2nd half of the 16th century).

Lay-out: complex frame work. Different script size.

Source: MS Leiden Or. 143, title-page.
al-Ragaz al-Mantiqi, by Ibn Sina (d. 428/1037).

*Naskh* script, dated 514 AH, possibly in the hand of Fayruz b. Ruzbihan.

Lay-out: Double column (poetry).

Source: MS Leiden Or. 184, ff. 27b-28a.

Source: MS Leiden Or. 204, ff. 30b-31a.
Kitab Khalq al-Nabi wa-Khulqih, by Abu Bakr Muhammad b. ‘Abdallah b. ‘Abd al-’Aziz (lived in the 5th cent. AH). *Naskh* script. Dated ca. 441/1049 AD, copied in Ghazna (Ghazni in present-day Afghanistan)

Lay-out: Single text-block, within frame in gold. Gold script with outline. One of the oldest known illuminated Arabic manuscripts.

Source: MS Leiden Or. 437, p. 2.
Shahnama by Firdawsi (10-11th century AD). Nasta‘liq script. Dated 840/1437 (from Shiraz?).

Lay-out: Illuminated introductory page. Titles in illuminated cartouche. Main text in two columns (poetry). Headings transcending the division into two columns.

Source: MS Leiden Or. 494, f. 9a.
*Shahnama* by Firdawsi (d. 1020 AD). *Nasta‘liq* script. Dated 840/1437 (from Shiraz?).

Lay-out: Main text in four columns (poetry), to be read two by two, horizontally (as one can see from the rhyme). The illustration exceeds the text block for an extra spatial effect.

Illustration: Rustam slays the white elephant. The ‘breaking verse’ on top, right side, is the direct reason for the positioning of the illustration.

Source: MS Leiden Or. 494, f. 49a.
Shahnama by Firdawsi (d. 1020 AD). Nastaʿliq script. Dated 840/1437 (from Shiraz?).

Lay-out: Main text in four columns (poetry), to be read two by two, horizontally (as one can see from the rhyme).

Page fillers with simple illumination. These are used to fill up the page, in anticipation of a full-page illumination or illustration on the next-following page. A common feature in illustrated Persian manuscripts, where the system of breaking verse is used.

Source: MS Leiden Or. 494, f. 269a.
Volume 1 only of the *Shahnama* by Firdawsi (d. 1020 AD). *Naskh* script, dated 614/1217, a pre-Mongol manuscript, the oldest dated copy of the text, the sole basis for the edition by Khaleghi-Motlagh. Not illustrated.

Lay-out: Main text in four columns (poetry), to be read two by two, horizontally (as one can see from the rhyme).

Full-width bands interrupt the four-columns lay-out. These contain wishing texts in Arabic, written in an archaic Kufi script. Their presence is enigmatic and they do not seem to have a direct relevance to the text.

Source: MS Florence, BN, CL-III-24, f. 3b.
Autograph notes by the Egyptian historian al-Maqrizi (d. 1442). Dated 839/1435. Scholar’s hand.

Lay-out: Main text one block. Rubrication by the author/copyist. Look at the signature by the author, in the last two lines of the page.

No *mistara* seems to have been used. But it is evident that al-Maqrizi used a double inkwell, for black and red ink. Look at the use of the red ink inside or on top of the letters.

Source: MS Leiden Or. 560, f. 14b.
Illustrated astronomical compilation in Persian, probably from Anatolia, not dated, but 14th or 15th century? Persian Naskh script. Heading in Thuluth.

Lay-out: Main text one block. Large title. Rubrication.
Illustration (gadwal): mansions of the moon during one month, explanatory text within the illustration. Circle made by measurement, as there is no geometrical construction possible for dividing a circle in 28 equal parts.

Source: MS Leiden Or. 563

Source: MS Leiden Or. 1015, f. 158b-159a
Mishkat al-Anwar by Abu Hamid Muhammad al-Ghazzali (d. 505/1111). *Naskh* script in several sizes. Dated 630 AH.

*Safina*-shaped, note-book. Text goes as a border around main text block.
Colophon of a collection of shorter divinatory, medical and physical texts in *gadwal* form. The *gadwala* (table drawing) and the *naskh* (copying of the text) are mentioned.

Dated end Gumada I 960 (1553), possibly in Constantinople (but this is not mentioned in the manuscript).

Lines in separate bands.

Source: MS Leiden Or. 5, f. 46a
Several texts on *Ikhtiyarat*, omens for the days and nights of the week and the month.

*Gadwal*-work, dated end Gumada I 960 (1553).

Source: MS Leiden Or. 5, ff. 4b-5a
Several texts on *Ikhtiyarat*, according to the 28 stations of the moon. *Gadwal*-work, dated end Gumada I 960 (1553).
Source: MS Leiden Or. 5, ff. 5b-6a
Several texts on the advantages and disadvantages of wine drinking and drunkenness.

*Kitab Siyasat al-Badan wa-Fada’il al-Sharab* | *wa-Manafi`uhu wa-Madarruhu wa-ma yatawalladu lil-Mukthir minhu.*

In the form of *tashgir*, tree-like diagrams. A *Kitab Mushaggar*.

*Gadwal*-work, dated end Gumada I 960 (1553).

Source: MS Leiden Or. 5, f. 20b (right half only)
Lithographed Qur’an (52.2 x 35.2 cm), with interlinear translations and glosses. Delhi, late 19th century. Source: Private collection, Leiden, ff. 2b-3a.
Explication of the mystical diagrams of the school of Ahmad al-Qushâshî. Manuscript from Aceh, Indonesia, middle of the 19th century. Text in Arabic. No use of mistara.

Source: MS Leiden Or. 2222
An Ottoman Qur’an manuscript, dated 1853-1854, here showing 26:94-134. The same words or groups of words, here in red ink, have been symmetrically placed on either page of the opening. Source: MS Istanbul, TIEM 469, ff. 186b-187a (taken from F. Déroche, Le livre arabe (2004), p. 97, No. 28.
A Qur’ân of Acehnese origin: the first sura.
First half of a double illuminated page in folio format (18th century?).

Provenance: found, in 1873, on the body of an Acehnese warrior killed in action.

Source: MS Leiden, Or. 2064, f. 7b.
Tabular medical manuscript in Persian from India (19th century). Double-page information, at the right the tabellaric arrangement, at the left the elucidations. Writing orientation is functional in this type of lay-out. 
Source: Collection Jan Just Witkam, No. 2, ff. 10b-11a.
An automaton of a moving bird, as explained in the work on automata, *fi Ma`rifat al-Hiyal al-Handasiyya*, by Abu Bakr Isma`il al-Gazari (602/1205).

Al-Gazari described a great number of such machines, but it is doubtful whether they ever came beyond the stage of a prototype.

Source: MS Leiden, Or. 117, p. 18.
Bibliographical references:


Bibliographical references (cont’d):

H. Voorn, *De papiermolens in de provincie Noord-Holland*. Haarlem (De Papierwereld) 1960


References to manuscripts in the Leiden library can be found in the on-line inventories by J.J. Witkam. These can be accessed through the URL: www.islamicmanuscripts.info and then navigate => inventories => Leiden.